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THE ROTATION TREATMENT OF SCOLIOSIS.

By A. MACKENZIE FORBES, M. D.,
Montreal, Canada,

Surgeon in Charge, Children's Memorial Hospital; Surgeon in Charge, Orthopedic Clinic, Montreal General Hospital.

A new method for the treatment of structural scoliosis is here submitted, and, as the theory on which this method is based is of importance, a short study of scoliosis is included in the consideration. This method is evolved from that already described to the Canadian Medical Association, June, 1911, as the *paradoxical method*. This latter method was suggested after examining a series of patients suffering from scoliosis in an endeavor to discover the best attitude in which to place a patient for the preparation of a plaster torso on which to fashion a remedial corset. Then was discovered a paradox, namely, that an apparent correction of the spinal curve, of sometimes as much as one to two inches, was got by rotation in the manner shown in Fig. 1.

The discovery of the paradox has led to an avid study of the mechanics of scoliosis in search of an explanation as to the cause, and early in this study the possibility of creating a new centre of turning, other than that in the spinal column, was discovered (Fig. 9).

Thought and the study of other men's works have suggested the theories of the mechanics of scoliosis given in this article, and the theory of the treatment suggested. To Henry O. Feiss, late of Cleveland, Ohio, and for some time of Edinburgh, Scotland, is due the greatest part of that portion of this paper dealing with the mechanics of scoliosis. From his, in the writer's opinion, most complete and modern studies of the mechanics of scoliosis, the writer has not hesitated to quote constantly and verbatim.

It is usual to describe two distinct forms of scoliosis. The first of these is known as *functional scoliosis*. It is characterized by a lateral deviation of the spine from the normal without accompanying bony change. The second is known as *organic scoliosis*. Here there is distinct bony change. Perhaps the first may, in certain or all cases, be the forerunner of the second; although this is a point which has hardly been proved, and which can hardly be proved, it has been held advisable to assume that it is so, it being considered that the deformi-

ties described under these two terms differ only in degree.

PATHOLOGY.

The graver forms of scoliosis represent a complex deformity. There is a posterior prominence and a lateral descent of the ribs, usually of the right ribs. The rib wall seems to have been crushed in toward the spinal column. It is flattened. The posterior convexity is sharp and razorlike. On the opposite side the ribs are deep and hollow behind, but as a rule prominent in front (Figs. 2 and 3). The sternum is often divergent. The spinal column is curved, usually in the dorsal region. The curve is convex toward the side on which the ribs are prominent. There are compensatory curves, usually in the cervical and lumbar regions. These compensatory curves are in obedience only to the laws of gravity. They depend alone on, and are secondary to the primary change. The individual vertebrae also are often changed.

To describe the pathological changes briefly, we might say: There is a prominence of the ribs on one side posteriorly, and at the same time there is a bulging of the ribs on the other side anteriorly. *Scoliosis* is more than a deformity of the spinal column. *It is a deformity of the trunk, and especially of the thorax as a whole.*

Physiological scoliosis: Pathological scoliosis may be simulated by a physiological change in the form of the trunk due to attitude, and in order to understand pathological scoliosis it is necessary to understand the relationship which it bears to physiological scoliosis. Every attitude is either one of strain or nonstrain. If one bends to the left side, the ribs on the left side become more prominent posteriorly, and flattened laterally. Thus in certain attitudes the thorax is in a position simulating the deformity of scoliosis, and further, if the patient remains in this pseudoscoliotic position long enough he will tend to become deformed—pathological scoliosis will be produced.

ETIOLOGY.

Let us now consider scoliosis from the point of view of etiology. Early scoliosis, called functional or postural scoliosis, is, as its name would apply, often due to strain or posture, but there must be some underlying cause in order to make strain effective. A general atonic condition (Internal and External Atony, *Boston Medical and Surgical Journal*, August 11, 1910) is noticed in nearly all patients suffering from lateral curvature of the spine. With the lateral curvature of the spine it

is usual to notice an increased lordosis and often a protuberance of the lower part of the abdomen (Fig. 4). There is often, also, an alteration in the shape of the dorsal spine, which may be either straighter in an anteroposterior direction, or more kyphotic than usual.

More advanced or severe forms of scoliosis which present bony change are, possibly, often due to, or follow functional scoliosis, and are thus indirectly due to strain. In other cases these seem to be due to, or to follow, certain definite primary conditions, such as, 1, infantile paralysis; 2, rickets; 3, empyema and certain other thoracic inflammations; 4, congenital anomalies of the spine; and, 5, possibly a lessened bony resistance.

Besides these primary causes there are secondary causes, viz., the mechanics of the gradual change which is undergone by the trunk before it assumes the attitude of scoliosis.

MECHANICS OF SCOLIOSIS.

The trunk as a tube: In all erect attitudes some effort is necessary to enable a person to stand alone, and this effort is afforded by muscular power, but there are certain positions in which the muscular power may be reduced to a minimum, and these are obtained by distributing the weight uniformly about a vertical line which passes through the centre of gravity (Parow, Homer).

The body is not a firm mass, but consists of segments joined together, one segment resting upon another. To prevent the body from collapsing, connection between the segments must be rendered firm. This is done by tightening the tube of tissues connecting superimposed ones. Thus to maintain the erect attitude the line of gravity must pass through the base of support. So in all bodies in which balance is maintained there is a constant equilibration by means of shifting segments (Rimmer, Herman).

Whether for the sake of balance, or not, the result of segmental movement must mean that the tube of soft parts made up of muscles, fascia, integument, and joining adjacent segments is subject to a constant change in tension. So in the maintenance of an erect attitude, the tube of soft parts is subject to difference in tension according with the amount of shifting of the superimposed segments. To translate the words of Meyers (*Lehrbuch der physiologischen Anatomie*, 1856): "If one leaves out of consideration the presence of the ribs and sternum, then the whole trunk wall is to be considered as a cylindrical or sac shaped tube, containing the viscera." The ribs may be considered as bony interruptions in this sac shaped tube. According to the analysis of this investigator, the muscles of the chest are actually continuous with those of the abdomen, the only difference being the insertion of the ribs in the upper part, so that the practical distinction between abdominal and thoracic parietes is merely one of rigidity; consequently a pull from any part of this tube will not stop at any particular rib, but will always be communicated to the one above, so as finally to exert itself upon the total thoracic wall.

Seat of movement: Now Feiss, in his most valuable work already quoted (*American Journal of*

Orthopedic Surgery, 1906, 1907, 1908), draws attention to the facts that are so important in the theory of the rotation treatment about to be described, viz., that the chief seat of motion in the spinal column is the dorsolumbar region. Here it is commonly said that rotation, lateralization, flexion, and extension occur. Far more important in the consideration of the advantages of the rotation treatment are the facts pointed out by Lovett, that in the dorsal region rotation is freer than side bending, that it is the most marked of dorsal movements. (Lovett, *Boston Medical and Surgical Journal*, August 6, 1903). It has been repeatedly proved that lateralization of the spine as a whole cannot occur without rotation, or rotation without lateralization.

Any motion of the dorsal column must necessarily be followed by motion of the thorax, because the ribs are attached in such a manner that a movement of any of the upper ten vertebræ is rendered impossible without carrying with it a rib, and, as each rib is attached to the sternum, a movement in a rib must necessarily be followed by movement in the sternum, and, because of the attachment of all the other ribs to the sternum, movement in each of them must follow. These facts point out that, relatively speaking, the thorax moves as a whole or as a single segment in movements of the trunk.

Effect of movement: The effect of movement has been demonstrated by Röntgen rays of the normal thorax placed under strain and by Röntgen rays of a fetus placed under the same conditions (Fig. 5). These demonstrate that side bearing and rotation cause narrowing of the thorax on the convex side, and descent of the ribs and crowding on the other side. In a twist the enveloping tube of soft parts, muscles, fascia, skin, etc., running from the thorax to the pelvis, is strained spirally until it is taut, the pelvis running with it until it is brought to a standstill by the muscles, etc., which hold it to the thighs.

Effect of strain: Tension of the rib wall is accompanied by strain and followed by sharpening of the angles of the ribs, separation of the individual ribs, and downward inclination of them; but on the other side the ribs become crowded together and there is no tendency to sharpening of their angles (Figs. 5, 6, 7, 8, and 9). If the convex thoracic wall comes under strain, this strain is communicated into the spinal column at its posterior part, thus while the ribs are being separated, and their angles are becoming more acute, the arches of the vertebræ are being so acted upon by them (Fig. 9) that the vertebral spinous processes are being pushed in one direction and the parts of the bodies of the vertebræ are approximating the bent wall in the other direction. The dorsolumbar intersection in the spinal column being a region of great mobility, the thorax is permitted to move as a segment, and diversion of it means that its walls are subjected to strain; thus the ribs, as part of these walls, are changed in shape and direction. These changes are communicated back into the dorsal column, and thus follows a redirection of its parts. The effect of bending is to tighten the convex side, which means that the rib wall is compressed, and consequently that particular side of the thorax is nar-



FIG. 1.—Demonstration that by rotation of the trunk superiorly and inferiorly a fixed pelvis apparent correction of a spinal curve can be produced. Dotted line marked 1 shows the position of the spinous processes when the patient is turned to the left. Dotted line No. 2 demonstrates the position of the spinous processes when the patient is turned to the right. Lines 3 and 4 demonstrate the position of the angles of the ribs in these movements.

rowed, the posterior convexities of these ribs are narrowed, and the separate ribs descend (Figs. 5 and 8).

Unity of the thorax: It may be taken as proved that *movement is a unity in the thorax*. Any motion of the dorsal spine must mean motion of the thorax. In subjecting the thorax to stress or strain great tension must come upon the ribs (Figs. 7 and 8). A movement in a rib means movement in the sternum, and thus movement in all the ribs. The majority of the ribs are attached to two vertebrae, therefore movement of one rib is usually followed by movement in the vertebra above and in the vertebra below (Feiss). The same strain which tends to distort the ribs also renders them levers for diverting the vertebrae (Fig. 9).

The elastic limit: The trunk is continually assuming the attitude known as that of physiological scoliosis. The thorax is normally under constant subjection to the stresses and strains which are the cause of the alterations in the shape and direction of its walls, and normally, when these stresses and strains are removed, the thoracic walls resume their old position by virtue of that quality which is known as elasticity, which is obviously the quality by which the possessor of it will resume its original form when a diverting force is removed. There is, how-

ever, a limit to elasticity. A very slight rhythmic bending may be applied to the same beam many hundreds of times in the same direction, and the beam, while recovering many times, may be in the end changed; thus if strain is carried beyond the limit of elasticity, permanent distortion may result. By bending the human trunk the ribs give on the side of the convexity, becoming more prominent posteriorly and descending on that side (Fig. 8). If the limit of elasticity is overstepped this position is wholly or partly retained, and pathological scoliosis may ensue.

Compensatory balance: With change in shape comes change in the centre of gravity, and with this change in the centre of gravity there will be a tendency to shift the thorax for balance. This, as well as the direct pressure already described, causes lateral curvature. In other words, the spinal curve, seen as part of the deformity known as scoliosis, may be the result of equilibration during recovery. Again, if, when the pelvis being fixed, a twist occurs, we see rotation at the dorsolumbar intersection and the thorax rotating as one piece until its elements react, then we get a dorsal curve (Figs. 1, 7, and 9).

We see now how the normal may assume all the attributes of the scoliotic. We see also that pathological scoliosis is seen when the elastic limit in physiological scoliosis is overstepped. In certain postures the bones tend to deform without actually doing so, but if these postures be carried far

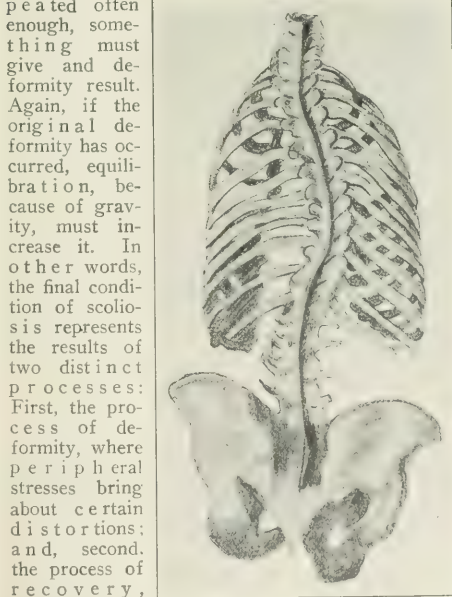


FIG. 2.—From Feiss. Demonstrates the deformity seen in right-sided scoliosis. "Scoliosis is more than a deformity of the spinal column, it is a deformity of the trunk and especially of the thorax as a whole."

ment of parts for balance. I do not know whether I have been plain enough, and as we are considering a complex subject, I shall repeat in other words:

Physiological scoliosis is common. The body assumes this position daily. It is similar to pathological scoliosis. Physiological scoliosis is a posi-

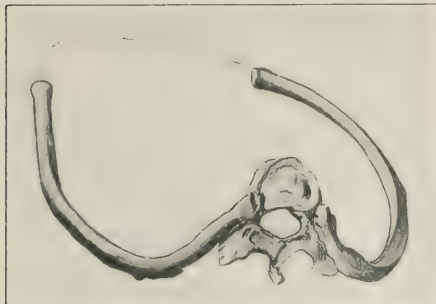


FIG. 3.—From Feiss. Demonstrates the deformity of scoliosis.

tion of strain. Consider the normal in such a position of strain, and ask whether this normal if strained, as seen for a long period, can avoid gaining just such marks of strain as we see in the scoliotic. It is the deformity of the thorax alone which marks the difference between the normal and the scoliotic. The distortions of the thorax alone result from deforming stresses. The other distortions are compensatory. When these distortions become fixed, scoliosis including its compensatory curves is completed by recovery. To be brief: Deformity and attempted recovery are synchronous. All the processes are carried out together; first, there is an impulse for deformity; second, an adaptation of structure to the stresses; and, third, there is compensation in other parts. Cervical curves, lumbar curves, high shoulders, prominent hips, and deformities of other kinds are simply to be regarded as compensatory changes in recovery. Their occurrence is probably due to the alteration in the centre of gravity, to the primal deformity, necessitating a readjustment of balance. The pathological changes found in scoliosis are not the result of disease of the bones, but are modifications in shape and structure resulting from abnormal pressure and strain, usually in a growing spinal column.

TREATMENT.

The treatment of scoliosis should be based on the etiology, pathology, and the mechanics of the deformity, all of which have already been considered. Although the subject of scoliosis has been studied for decades, perhaps even centuries, we are still in comparative darkness regarding its effective treatment.

It seems useless to consider the treatment of functional scoliosis where there is no bony change, with organic scoliosis where there is often most serious structural change, consequently we will consider the treatment of these as the treatment of separate and distinct conditions. The treatment of

early, or functional scoliosis, is the treatment of the underlying cause. If the patient has assumed a faulty attitude, then this must be corrected. If there is general debility, the treatment of this debility is the treatment of the scoliosis. If there is a general atonic condition of the spine and the internal organs, which through sagging are probably the cause of at least the protuberant abdomen which so often accompanies functional scoliosis, the spine and the abdominal contents must be supported. In patients suffering from functional scoliosis the lateral deviation of the spine is due to the atonic condition of the spinal ligaments and the influence of gravity upon the spine, just as the lordosis is due to the atonic condition of the spinal ligaments and the influence of gravity upon the spine. There are certain patients who suffer from early, or mild, nonstructural scoliosis who do well under treatment by regulated gymnastic exercises, in conjunction with a well ordered life. These are the patients who improve under treatment by an abdominal support, such as is ordinarily prescribed for the condition known as internal and external atony (*Boston Medical and Surgical Journal*, August 11, 1910).

The treatment of scoliosis with bony change is, however, a very different matter. Here we are called upon to treat a deformed trunk with definite changes in the bony framework. It is difficult to see how gymnastic or any form of exercises can influence these. It is difficult to see how such can



FIG. 4.—(Living patient, Children's Memorial Hospital.) Shows the increasing lordosis and protuberant abdomen of internal and external atony. This girl was brought for the treatment of scoliosis from which she suffered. The protuberance of her lower abdomen was so great that a practitioner had decided that she was pregnant.



FIG. 5.—From Feiss. Rontgenogram of a fetus bent sideways. It demonstrates the effect of bend on the rib wall.

produce any definite change in vertebræ whose very shape is changed, in a spinal column whose form is changed, in ribs whose contour is modified, and

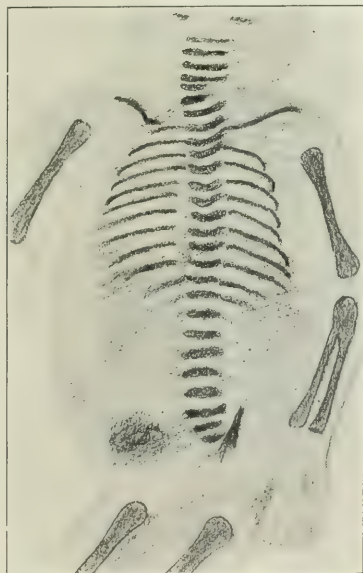


FIG. 6.—From Feiss. Rontgenogram of a fetus twisted. Note the similarity of the effects of twist and bend (Fig. 5).

generally in a trunk which is so unlike the normal. Serious conditions require serious measures, and constant corrective force will perhaps be alone sufficient materially to improve the later cases of scoliosis.

When casually examining a scoliotic spine, extension will naturally present itself as the remedy for the spinal deformity; yet to straighten a bowed stick leverage is always preferred. We are not dealing, however, with deformities of the spine alone or with a bowed stick, but rather with a compound deformity of the human trunk, a lateral

deviation of the spine with rotation of the individual vertebræ accompanying other changes, principal among which is the extraordinary change of the thoracic parietes generally. Such being the case, it is difficult to see how extension alone can be considered a sufficient remedy, or how wise it would be to apply a permanent side force in treatment, as such must be exerted on the deformed thorax before it can be extended to the deviated spine. It has already been demonstrated that lateral deviation of the spine is accompanied by rotation of the bodies of the vertebræ toward the side of the convexity of the lateral curve; and accompanying the progressive deformities of the spine we see these deformities of the thorax generally which are characteristic of organic scoliosis. It has been demonstrated, also, that we may have physiological scoliosis, and this, fact is of the greatest importance, because the production of this scoliosis on what I may be permitted to call the reverse side may help to undo the deformity of pathological scoliosis.

Treatment must aim at the redirection of growth along normal lines. In the past it has most frequently been our aim to straighten the crooked spine, neglecting, I think quite frequently, the other component part of the deformity. We have treated one or two symptoms of a complex deformity without regard to the deformity as a whole. The aim of the treatment here suggested is to place the thorax in a position as far as possible from the abnormal by the production of physiological scoliosis on the reverse side to the

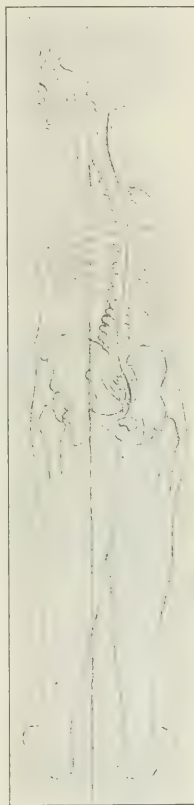


FIG. 7.—From Feiss. Demonstrates the position of the thoracic parietes in rotation. It demonstrates the similarity of the parietes in either rotation or lateralization, and lastly the similarity between physiological and pathological scoliosis.

pathological scoliosis, and to maintain it in this position that the law of Wolff may be made manifest; that the forced change of form and function of the thoracic parietes may be followed by certain definite changes in their external conformation.

In studying the position of the vertebral spinous processes of one suffering from scoliosis, and the movements possible in the vertebral column, it is to be remarked that apparently lateral deviation may be corrected by means of torsion (Fig. 1), while in reality the apparent correction is due to the assump-

This mechanical truth has perhaps always been applied to the spinal column and it may be applicable to this when subjected to torsion under certain conditions, but we have proved that it is not true in the case of a scoliotic, whose thorax is subjected

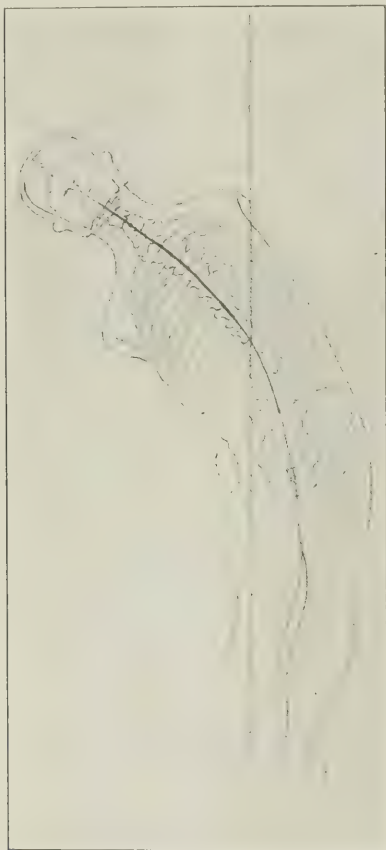


FIG. 8.—From Feiss. Demonstrates the position of the thoracic parietes in side bending and most important, the similar effects of twist and side bending. Both cause physiological scoliosis. (This diagram should be studied in conjunction with Fig. 5.)

tion of a new position of the spinous processes, which, being in a position diametrically opposed to that of the bodies of the vertebrae, must mean that the bodies themselves are, on the contrary, thrown into a position further from the normal (Fig. 9). A rod of iron subjected to torsion demonstrates that such causes lateral deviation to the side of the direction of the force applied (Lovett, *Boston Medical and Surgical Journal*, August 11, 1903).

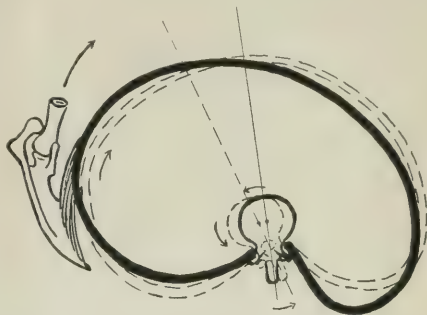


FIG. 9.—Demonstrates diagrammatically the action of the serratus magnus and other muscles. Power to create torsion by means of the arm seems to be transmitted through it to the thorax by the serratus magnus and allied muscles. Torsion exerted in this way on the thorax demonstrates a new centre of turning in the thorax other than the spinal column. This rests about the position of the angles of the ribs. As the part of the anterior rib wall advances, the posterior part recedes; this recession by pushing on the transverse processes of the ribs causes an apparent correction. The spinous processes assume a better position, but as these are diametrically opposed to the bodies the latter must assume a reverse position.

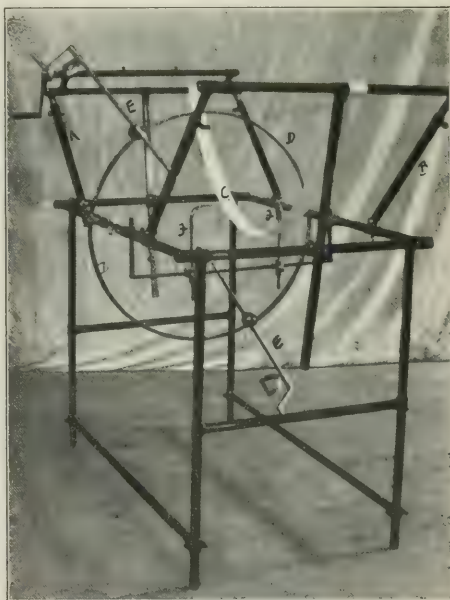


FIG. 10.—Photograph of the latest model of apparatus for the rotation treatment of scoliosis. This demonstrates, A and B, the arms which support the hammock; C, on which rests the back of the flexed patient; D, represents the hoop by which rotation is assured. This carries two handles, E E, which are grasped by the patient with outstretched arms, prior to being rotated. F F show the arms which hold immobile the pelvis during rotation of the trunk through the upper extremities and the passive resistance of the serratus magnus and allied muscles.

to such force in the manner explained. Here torsion is applied to a compound, rodshaped organism, and while mechanical laws may apply to the spine as part of the thorax, they do not apply to the tho-

position approaching recovery by that increased rotation which is practised as the rotation treatment of scoliosis (Figs. 1, 6, and 9), if the readers of this thesis have accepted the facts that, torsion of

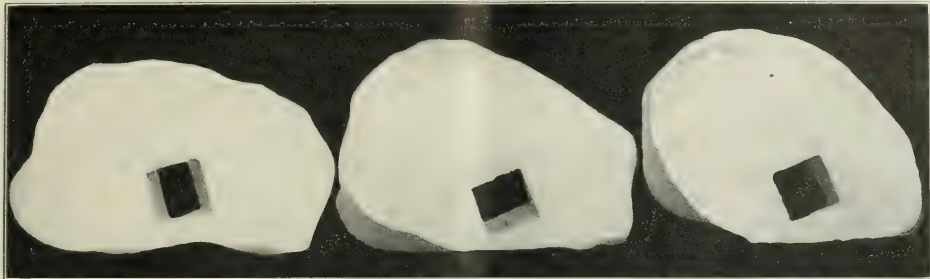


FIG. 11.—Photograph of transverse sections of torsos in the Children's Hospital (Montreal). These demonstrate the real deformity of the scoliotic, and should be compared with Figs. 2 and 3. "In scoliosis there is a prominence of the ribs on one side posteriorly and at the same time there is a bulging of the ribs on the other side anteriorly."

rax as a body of component parts. By the application of the torsion to the human trunk, the force being applied through the arms, by the method demonstrated in Fig. 10, a new centre of turning, other than the centre of turning in the spinal column alone, becomes apparent, and this centre for each side appears to be at a more or less vertical line drawn about the position of the angles of the ribs. The power to create this torsion by means of the arm seems to be transmitted through it to the thorax by the serratus magnus and allied muscles (Fig. 9). Through this power exerted on the cylinder shaped human trunk, whose centre of torsion under these conditions has just been described, the thoracic wall anterior to the rib angles on one side may be advanced. At the same time the thoracic wall posterior to the angles of the ribs on the same side, must of necessity be pushed backward (Fig. 11). This backward inclination, because of the attachment of the ribs to the transverse processes, must result in these vertebral prominences being forced backward, with the result that the spinous processes which are the sole portions of the vertebræ apparent to the eye, are forced into a position opposed to that which might be expected if the vertebral column alone, or an iron rod, was subjected to the same force as has been the composite cylinder shaped thorax. Further, this new position of the vertebral spinous processes is diametrically opposite to the anterior surfaces of the bodies of the vertebræ, because of the anatomical conformation of these bones (Fig. 9). This fact is important because correction must not be gauged by the position of the spinous processes, as the writer has done in the past, and as was suggested by him in the "paradoxical method" presented at the meeting of the Canadian Medical Association, held in June, 1911. On the contrary, it must be realized that a pseudocorrection, as well as a real correction, is possible. These statements have been proved to the writer's satisfaction in theory, and clinically on many occasions, and also, by skiagrams.

It must necessarily be apparent to all that the thoracic parietes can be markedly altered into a

the thorax in the manner described does profoundly affect the position of the individual vertebræ; that both rotation and lateralization produce the same result (Figs. 7 and 8); that physiological scoliosis may be produced by rotation and may be



FIG. 12.—Photograph of a patient being treated for scoliosis by a plaster jacket, well fenestrated, window opposing window, and plaster opposing plaster. The strengthening irons mentioned are clearly seen. The window, *E, E, E, E*, is opposite a similar window. Such a jacket in many cases can be applied with advantage above the arms. The picture is to demonstrate the extent of the fenestration.



FIG. 13.—(Photograph of living patient). Demonstrates the attitude of physiological scoliosis which is attempted in the rotation treatment.

more markedly produced by rotation than by side bending, because it is the most free of all movements possible in the dorsal region.

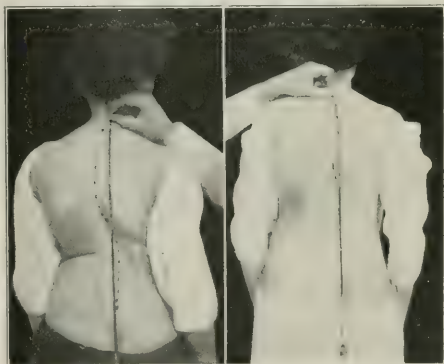
If then a new and improved position can be assured by the practice of rotation, or the assumption of physiological scoliosis on the side reverse to the main deformity, one thing alone remains, viz., to assure the efficacy of the method by our ability to maintain correction without exercising deforming influences on any part or parts of the thoracic parietes. This the writer feels can be fairly done by the application of a plaster jacket while the patient is in the corrected position obtainable in the apparatus pictured in Fig. 10. The theory on which this apparatus is based has been considered. Its aim and object is to cause physiological scoliosis on the reverse side. Its desired effect on the patient can be demonstrated best by the simple experiment pictured in Fig. 1.

Practically, to cause physiological scoliosis by means of this apparatus, it is necessary to hold immobile the pelvis and to rotate the thorax by means of the arms toward the side of the deformity. As it has been shown that rotation is made more easy by flexion, the trunk is flexed or bent on the fixed pelvis. As it is well known that lordosis usually accompanies scoliosis, the lower extremities are

flexed in much the same manner as that of Mr. H. O. Thomas to reduce this flexion.

The application of a plaster jacket to a patient being treated in such an apparatus, is not difficult. It is important, however, to see that the jacket when completed fulfills the requirement, that it exerts no pressure on those parts of the thoracic parietes which demonstrate deformities simulating those of pressure. Recently a series of plastic casts have been made of the thorax of patients affected with organic scoliosis. These torsos have been sawn across transversely at certain definite places, and some of the pictures revealed are here figured to demonstrate the deformities requiring treatment (Fig. 11). By the fenestration of a jacket applied in torsion, we may assume that growth is permitted only in those places in which development has been denied or stunted by the deforming pathological scoliosis. The fenestration of such a jacket is considered in the light of the transverse sections of the torsos already figured (Fig. 11). The plaster is maintained from the spinous processes to the angles of the ribs on the side of the deformity and if necessary increased, or increasing pressure may be assured by the insertion of wadding between the trunk and the jacket in this position, in much the same manner as that advocated by Calot for the treatment of the kyphosis of Pott's disease. The plaster immediately opposite this remains intact, because all pictures of the deformity reveal a bulging here. The remainder of the plaster is fenestrated. To make my meaning clear, and yet speaking with some reservation, I might say that opposing quadrants of the thorax are treated in a similar manner. Plaster opposes plaster, and window is opposite to window. In the treatment of patients by this method in Montreal, so much plaster has been cut away that it has been found necessary to reinforce the remaining plaster by irons, as shown in the accompanying illustration (Fig. 12).

Before closing this description of the rotation treatment of scoliosis, the writer would accentuate certain things. Treatment by torsion by this meth-



FIGS. 14 AND 15.—(Photographs of patient, Y. P., at Children's Memorial Hospital). Demonstrates improvement by treatment. Fig. 14, taken November 16, 1911. Fig. 15, taken February 7, 1912. During this time the patient had been treated in one jacket applied in the method described.

od aims at the unfolding of the deformity with the production of physiological scoliosis on the side reverse to that of the greatest deformity. By twist may be obtained correction without that lateral pressure which, theoretically at least, is so greatly to be deplored in the treatment of a compound deformity, of which a crushing, or should I say, a narrowing of the thorax is a most important part.

The writer feels that treatment by this method has been successful (Figs. 14 and 15). Brilliant results are not claimed, but such cannot be expected in the treatment of an organic deformity which has baffled the wisdom of ages. The application of the first jacket is often followed by an increase in height of one or more inches. On the removal of the first and subsequent jackets, a decided improvement is often noticed. The routine treatment is to change the jacket every six weeks.

In closing, the writer would like to thank Mr. Robert Jones for allowing him to try the latest form of apparatus for the rotation treatment in his office in Liverpool; Doctor Fitzsimmons, of Boston, for his aid in this trial; Messrs. Critchley, of Liverpool, for the care which they have exercised in following the writer's ideas in the making of this machine; Doctor Lindsay, and Master George McClure, a patient in the Children's Hospital, for preparing the illustrations used in this article, and especially the writer would thank his colleagues in Montreal for the stimulus which they have accorded in this study of the treatment of organic scoliosis.¹

485 GUY STREET.

THE GASTRIC CRISES OF TABES.*

BY JULIUS FRIEDENWALD, M. D.,

Baltimore,

Professor of Gastroenterology.

AND T. F. LEITZ, M. D.,

Baltimore,

Associate in Gastroenterology, College of Physicians and Surgeons,
Baltimore, Md.

Gastric crises are among the most important as well as the most interesting symptoms observed in locomotor ataxia. As early as 1842, Graves reported the results of his study of a case affected with this peculiar gastric disturbance occurring in the course of a nervous disorder. Romberg, in 1851, and Grube, in 1859, reported similar observations, without attracting attention to any relation existing between the gastric affection and tabes; while Trousseau cited a case of a woman, in whom the lightning pains preceded the gastric pains; he did not, however, establish any special connection between the gastric upset and the coincident tabetic disease. Charcot, in 1868 and 1872, described classically the gastric symptoms of tabes and observed, that in addition to locomotor ataxia other affections of the spinal cord may be accompanied by these symptoms. His work forms the basis of all that has since been established in the study of this affection.

In 1882, Leyden (1) described the crises occurring in the disturbances termed by him, as "periodical vomiting," a condition not associated with any special lesion, and Sahli, in 1885, presented his observation on the gastric chemistry of tabes both in the crises and during the intervals, and concluded that the crises are due to a hyperchlorhydria. Rosenthal (2) and Somomi (3) confirmed Sahli's observations while Boas (4) and von Noorden (5) demonstrated exceptions to Sahli's views, and Huchard and Bovet (6) called attention to the possibility of variations in the gastric chemistry even during the crises. The last observations were confirmed later by Babon (7) (1905), who established the fact now usually admitted that there is not any distinctive chemistry to the stomach secretion in the gastric crises of tabes.

In the usual forms of gastric crises the following characteristic symptoms are observed: Suddenly and without warning, the condition is ushered in by paroxysms of pain in the abdomen, lasting a variable period of time, and ceasing abruptly; the digestive functions being entirely normal in the interval. The paroxysm may be accompanied by the vomiting of a certain amount of mucus and of food and may continue without cause for many hours, and even days; prodromal symptoms are rarely noted. Vulpian, however, reports a case in which an eruption on the thigh manifested itself upon the approach of each crisis; at times a general weakness or malaise precedes the attack.

The gastric crises of locomotor ataxia are ordinarily observed in the preataxic stage of the disease, often as the first symptoms, and may remain so for a long period, often many months, and frequently lead to errors in diagnosis. Thus Deboue (8) observed in a patient operated on successively for appendicitis, cholelithiasis, and for a movable kidney and who was finally discovered to have been affected with locomotor ataxia.

According to Fournier (9), in 211 cases of tabes, the *crises gastriques* were noted fifteen times as initial symptoms. According to Erb, ten times in 400 cases, and according to our observations five times in forty-two cases.

SYMPTOMS.

The important symptoms associated with the gastric crises are pain, vomiting, and the effect upon the general health. The pain first manifests itself in the epigastrium and radiates throughout the abdomen, back, and limbs. From the onset the pain is usually most violent; occasionally, however, it may be quite moderate and gradually increase in intensity to the greatest severity. With the pain, there is often a marked cutaneous hyperesthesia in the epigastric region, the slightest pressure eliciting at times the most agonizing pains; at other times pressure upon the abdomen is practised by the patient to subdue the severe pain.

The pain may last many hours, and at times many days; but usually is not continuous, and the paroxysms are of short duration, a period of relative calmness succeeding them. The vomiting takes its onset coincidently with the pain, occurring quite as frequently before as after meals. The vomitus consists of a glairy mucous secretion containing at times some food, often tinged with bile, and oc-

¹Since writing the foregoing it has been found possible to obtain so great flexion that the patient's height, instead of being increased by the application of a jacket by the method advised, has been apparently decreased, the patient being forced into a stooping position.

*Read at the annual meeting of the Medical and Chirurgical Faculty of Maryland, April 24, 1912.

asionally with blood. As soon as the stomach has been emptied of its contents the effort at vomiting becomes more and more severe and the straining adds to the severity of the pain. The vomiting may become incessant, and occasionally it becomes uncontrollable. Excessive quantities of secretion may be vomited at times, as much as two or three litres, in fact.

Owing to the extreme pain and excessive vomiting, the strength of the patient is much reduced and he becomes weakened, while the intolerable vomiting, rendering feeding impossible, increases the depression. The patient becomes indifferent to his surroundings, his body becomes bathed in profuse perspiration, the extremities become cold, the pulse is small and rapid, the respirations are accelerated, there is extreme anorexia, and intense thirst, and, according to Marie, this condition may be most aptly compared to a severe attack of sea sickness. Death due to gastric crises is exceedingly rare, though this has occurred as a result of collapse. Vulpian (10) reports a case of this kind.

On examination, the patient presents a retracted abdomen, which is painful to pressure. A succussion sound is usually absent; occasionally there are eructations and hiccough; abdominal distention is not frequent. Areas of cutaneous hyperesthesia over the abdomen are frequently observed, occasionally areas of anesthesia.

The analyses of the gastric secretion have been a matter of considerable interest in this affection. The most important observations are those of Babon (11), Sahli (12), Rosenthal (13), Simoni (14), and Robin (15), who found an increase in acidity, while Van Noorden (16) obtained very variable results in several observations. He concluded that the gastric juice varied as to the acidity very materially even in the same individual in the same crisis or in different ones.

Huchard and Bovey (6) observed repeated variations in the chemistry of the stomach contents even in the same individual, and conclude that these variations are important as a factor in the diagnosis between the gastric crisis of tabes and ulcer of the stomach. Rubon (11) classifies seventeen cases as follows:

Hyperacidity in	7
Hyperacidity with hypersecretion	1
Hypoacidity in	7
Anacidity	1
Crisis with variable conditions	1

In the interval the gastric secretion undergoes the same variations as during the crisis.

The intestine frequently participates in the disturbances, and with the gaseous distention there may be great expulsion of gas from the bowels. At times the intestinal disturbances are marked and are accompanied by a continuous diarrhea, the stools containing mucus and bile; in consequence, the patient becomes exhausted and extremely ill. At times gastric crises coexist with other crises, as intestinal, rectal, vesical, cardiopulmonary, or laryngeal.

COURSE AND DURATION.

The gastric crises appear at longer or shorter intervals; these may be as long as six months or more; at times a few months, or only a few days.

Appearing in the preataxic stage they increase in severity as the malady advances; the periods of intermission being shorter and the crises more prolonged, at times they become prolonged almost indefinitely and with but little remission.

Occasionally diminution in, and a disappearance of the crises has been noted as soon as the motor symptoms become marked. The crisis itself varies greatly in duration. It terminates in twenty-four to forty-eight hours, or it may be prolonged for several weeks. Soupault (17) describes two forms, a short crisis, the duration of which is but one to two days, and a severe form which is prolonged from eight to fifteen days or more, and which reacts severely on the patient's general health, and is followed by marked depression and exhaustion.

TERMINATION.

In milder forms, as soon as the pain and vomiting subside, the appetite quickly returns, and the patient partakes of a full meal and digests it well, but in the severe forms, even after the cessation of the vomiting and disappearance of pain, the return to health is gradual; in a certain number of cases the digestion becomes perfectly normal, while in others dyspepsia continues for a longer or shorter period of time. The gastric crises may exceptionally terminate fatally; due either to cardiac exhaustion or to exhaustion produced by profuse diarrhea.

CLINICAL FORMS.

Sainton and Tronc (18) describe six varieties of gastric crises:

I. *Mild variety*: This form is very rare; it was first described by Fournier (9); it is accompanied by pain, but with little vomiting.

II. *Abortive variety*: There are two varieties of this condition, A, vomiting variety, and, B, gastralgic variety.

In the vomiting variety there is an absence of pain and of general symptoms. The crisis is indicated by paroxysms of vomiting of food and mucus. This condition is accompanied by vertigo and exhaustion and the patient has but slight pain.

In the gastralgic variety there is no vomiting, but there are paroxysms of epigastric pain, often radiating toward the back.

III. *Severe variety*: This variety is accompanied by extreme pain, so marked that all other symptoms are overshadowed, or by an intensity of the general symptoms, that the patient collapses. This is the most severe form of the gastric crises and may lead to coma and death.

IV. *Complicated variety*: This variety may be of two forms; that accompanied by hematemesis, and that with hypersecretion. The variety accompanied by hematemesis is exceedingly rare; cases have been described by Charcot (19), Vulpian (20), Simoni (14), and others. The blood which is vomited is usually large in quantity, may be red, but is usually partly digested, and coffee ground in appearance. In the variety accompanied by hypersecretion, the patient is affected with an intermittent hypersecretion of gastric juice. This condition occurs in those forms of gastric crises associated with hyperchlorhydria.

V. *Abnormal variety*: This variety is unusual on account of its duration and repetition. The

crises appear daily at times, but may be of short duration; at times they may be prolonged over days, weeks, and months.

VI. *Variety containing those forms alternating or associated with other symptoms:* In certain cases the gastric crisis may alternate with other manifestations; cases have been recorded in which the crises are interrupted, accompanied, or followed by attacks of angina pectoris. Labbé and Sainton record the clinical history of a patient who passed through three phases, laryngeal crises, attacks of angina pectoris, and gastric crises. In this variety, the crises occurring in patients having dyspepsia are of importance; they do not cease abruptly, but are followed by periods of gastric distress, which disappear under careful treatment, but reappear with excesses in food or drink. In hysterical individuals affected with tabes, the gastric crises, and hysterical crises are apt to be associated. The vomiting is exaggerated, and the symptoms of hysteria are apparent. It is possible, therefore, to have two forms of crises in the same individual, the usual form of gastric crises of tabes, and the hysteropseudocrisis appearing in tabes. Of interest, too, are the gastric crises appearing in individuals addicted to the use of morphine. Mathieu (21) has called attention to this condition. It is not uncommon for patients affected with gastric crises of tabes to become addicted to the use of morphine. In such individuals the crises become more and more frequent and at times almost continuous.

DIAGNOSIS.

When the symptoms of the gastric crises are pronounced, they are so well known that the diagnosis becomes a simple matter. When the diagnosis is not made under these conditions it is usually due to the fact that the possibility of a tabetic condition is not borne in mind. The physician is frequently called upon to look into some apparent gastrointestinal disturbance, and the nervous phenomena are not taken into consideration. Frequently the signs of tabes are not sufficiently marked, and an error in diagnosis is therefore pardonable. At times the signs are not complete and the diagnosis becomes difficult.

DIAGNOSIS BETWEEN HEPATIC COLIC AND GASTRIC CRISES.

In both conditions vomiting of bile is not infrequent; however, the pain located in the region of the gallbladder, radiating to the back, renders the diagnosis of cholelithiasis a simple matter; moreover, the bile stained urine, the icterus, the enlargement of the gallbladder add additional evidence to the diagnosis.

Nephritic colic may be confounded with gastric crises, but the constant location of the pain in the region of the kidney and the urinary changes point to the correct diagnosis. The difficulty in diagnosis, however, becomes greater in those rare forms of tabes accompanied with nephritic crises such as have been described by Maurice Raynaud (22).

Dietl's crises can usually be distinguished from gastric crises by physical examination. The symptoms of lead colic frequently resemble the gastric crises of tabes. In lead colic vomiting is unusual;

constipation is marked; retraction of the abdomen is present, and the blue line around the gum permits the diagnosis usually to be made without difficulty. Attacks of intermittent hypersecretion frequently resemble the gastric crises, but their onset is much less sudden, and on emptying the stomach large quantities of gastric secretion are obtained. The attacks of gastrosynsis of Rossbach in which migraine attacks observed in young individuals following intellectual pursuits, are accompanied by the vomiting of acid gastric secretion, sometimes resemble gastric crises; the attacks, however, usually make their onset after meals; the headaches are intense; severe eructations manifest themselves, followed by vomiting. After vomiting the patient is relieved, takes nourishment, and is well the next day. Of the greatest importance is the fact that these attacks usually come on while the patient is pursuing his mental work, and disappear on holidays and thus are easily distinguished from gastric crises.

Gastric crises of hysteria are much less violent than those of tabes. They are accompanied by the eructations of gas or the expulsion of flatus from the bowels, and with abdominal distention; vomiting is frequently present. These attacks occur in hysterical individuals when subjected to mental anxiety. Hysterical crisis frequently alternates with the gastric crisis of tabes, and according to Vires (23) in hysterotabes each disease is so represented as if it were alone present.

In the gastric crisis of neurasthenia the attacks appear after fatigue. They are accompanied by headaches and disappear with thorough purging. The gastric crisis which appears in the course of other nervous diseases, such as in general paralyses, multiple sclerosis, etc., presents the same symptoms as that of tabes. A thorough examination of the nervous system will distinguish the crisis of tabes from that of other nervous affections. Under the caption of periodic vomiting, Leyden has described a peculiar train of symptoms in which patients present attacks much like those of gastric crises, but other signs of tabes are never present.

PATHOGENESIS.

In the autopsies of patients who have succumbed to tabes, and who have been affected with gastric crises, one rarely finds any lesion in the stomach. Crouzon (24) reports a case in which small hemorrhages with melena existed for fifteen years, revealing at autopsy an atrophy of the stomach. In a case in which hematemesis was present Mathieu (21) was unable to discover any ulceration in the stomach.

Two theories have been propounded to explain the nature of the gastric crises. First, that the condition is due to some derangement of the nervous system; second, to a functional disturbance of the stomach.

NERVOUS THEORY.

According to Hayem (25), the gastric crisis of tabes is a form of gastric neurosis, while Bouveret (26) considers the condition neuralgic. Other writers have attempted to lay the cause to one or other of the nerve supplies of the stomach, the pneumogastric or the sympathetic. Buzzard (27) attributes this phenomenon to the sclerosis of the

pneumogastric, while Roux (28) considers the condition to be due to some disturbance of the sympathetic system.

GASTRIC THEORY.

Sahli (12), on the other hand, believes the gastric crises are due to some change in the chemistry of the stomach, and that the hyperchlorhydria present plays an important rôle in its production. The chemical theory of the production of the crises is untenable.

PROGNOSIS.

The prognosis of the gastric crises is grave. The intensity of the pain, the frequent vomiting greatly fatigue the patient and lead to rapid emaciation,

is present the alkalies are indicated. For the relief of pain, the external application of sprays of ether or the local application of ice is useful. Some relief is at times obtained by means of a galvanic current of from ten to fifteen milliamperes, the positive pole being applied to the spine, the negative to the abdomen. Occasionally the application of x ray or radium gives relief. Lavage of the stomach is rarely of benefit, except in those patients suffering with a coincident dyspepsia.

Gastric crises have been subdued in two cases by Debove (29) by simple lumbar puncture. Similar results have been obtained by Babinski (30) by the same method. Unfortunately, none of the methods of treatment cited can be relied upon, and the pa-

Table illustrating the Various Conditions Associated with the Forty-two Cases of Tabes with Gastric Crises.

No. of cases.	Age.	Gastric crises as initial sign of disease.	Pain.	Vomiting.	Effect on general health.	Gastric secretion	
						during crises.	between crises.
1.....	60	No	Severe	Severe	Severe	Hyperchlorhydria	Normal
2.....	34	Yes	Variable	Variable	Severe	Hyperchlorhydria	Hyperchlorhydria
3.....	58	No	Severe	Severe	Severe	Hyperchlorhydria	Normal
4.....	42	No	Variable	Severe	Slight	Normal	Hypochlorhydria
5.....	59	No	Moderate	Moderate	Slight	Variable	Hyperchlorhydria
6.....	61	No	Severe	Severe	Severe	Hyperchlorhydria	Normal
7.....	53	No	Variable	Severe	Severe	Hyperchlorhydria	Hyperchlorhydria
8.....	33	No	Variable	Moderate	Slight	Hyperchlorhydria	Hyperchlorhydria
9.....	46	No	Severe	Severe	Severe	Hyperchlorhydria	Hyperchlorhydria
10.....	53	No	Variable	Moderate	Slight	Hyperchlorhydria	Normal
11.....	35	No	Variable	Severe	Severe	Hyperchlorhydria	Normal
12.....	29	No	Moderate	Variable	Slight	Hyperchlorhydria	.....
13.....	44	Yes	Variable	Moderate	Slight	Normal	Normal
14.....	39	No	Moderate	Severe	Severe	Hyperchlorhydria	Hyperchlorhydria
15.....	46	No	Moderate	Moderate	Slight	Hyperchlorhydria	Normal
16.....	42	No	Variable	Severe	Severe	Hyperchlorhydria	Hyperchlorhydria
17.....	37	No	Variable	Variable	Severe	Variable	.....
18.....	55	No	Severe	Severe	Severe	Normal	Normal
19.....	48	No	Moderate	Severe	Severe	Hyperchlorhydria	Normal
20.....	38	Yes	Severe	Moderate	Slight	.....	Hyperchlorhydria
21.....	57	No	Variable	Severe	Severe	Variable	.....
22.....	64	No	Severe	Variable	Severe	Normal	Normal
23.....	32	No	Variable	Severe	Severe	Hypochlorhydria	Hypochlorhydria
24.....	59	No	Variable	Severe	Severe	Hypochlorhydria	Hypochlorhydria
25.....	62	No	Variable	Moderate	Slight	Hyperchlorhydria	Hypochlorhydria
26.....	44	Yes	Moderate	Severe	Severe	Hypochlorhydria	Hypochlorhydria
27.....	54	No	Variable	Moderate	Slight	Hypochlorhydria	Hyperchlorhydria
28.....	30	No	Severe	Severe	Severe	Normal	Normal
29.....	41	No	Variable	Moderate	Slight	Hyperchlorhydria	Hyperchlorhydria
30.....	55	No	Moderate	Variable	Slight	Hyperchlorhydria	Hyperchlorhydria
31.....	51	No	Moderate	Severe	Severe	Variable	Normal
32.....	33	No	Variable	Severe	Severe	Hyperchlorhydria	Hyperchlorhydria
33.....	41	No	Severe	Severe	Severe	Hyperchlorhydria	Hyperchlorhydria
34.....	59	No	Variable	Severe	Severe	Hypochlorhydria	Hypochlorhydria
35.....	36	No	Variable	Moderate	Slight	Normal	Normal
36.....	53	No	Moderate	Variable	Slight	Variable	Normal
37.....	35	No	Severe	Severe	Severe	Hyperchlorhydria	Hyperchlorhydria
38.....	41	No	Variable	Moderate	Slight	Hyperchlorhydria	Normal
39.....	49	Yes	Variable	Severe	Severe	Hypochlorhydria	.....
40.....	38	No	Severe	Variable	Slight	Hyperchlorhydria	Normal
41.....	60	No	Variable	Moderate	Slight	Variable	Normal
42.....	46	No	Variable	Severe	Severe	Hypochlorhydria	Hypochlorhydria

loss of strength, and anemia and often tend to the contraction of the morphine habit.

TREATMENT.

The indication for treatment is to allay the severity of the crisis and to prevent if possible a return. In the treatment of the crisis itself, when the pain and vomiting have become excessive, abstinence from all food should be insisted on. At times liquid food may be given, as albumen water, and ice cold milk in small quantities. When special remedies can be retained some relief may be given the patient. Among these remedies are cerium oxalate; extract of cannabis indica; extract of belladonna, the bromides, and chloroform. Among the sedatives, cocaine, codeine, and morphine exert a favorable influence at times upon the crises. Remedies acting directly upon the stomach itself rarely yield results; when a hyperchlorhydria

is present the alkalies are indicated. For the relief of pain, the external application of sprays of ether or the local application of ice is useful. Some relief is at times obtained by means of a galvanic current of from ten to fifteen milliamperes, the positive pole being applied to the spine, the negative to the abdomen. Occasionally the application of x ray or radium gives relief. Lavage of the stomach is rarely of benefit, except in those patients suffering with a coincident dyspepsia.

When the crises have become unbearable, the operation of rhizotomy, as recommended by Foerster, should be performed; this consists in the resection of the posterior spinal nerve roots. The object is to resect the sensory gastrointestinal fibres of the sympathetic nerve, and this may require resection of the roots, from the twelfth to the fifth dorsal, or even higher. Between attacks it is important to apply treatment and so attempt as far as possible to avoid the onset of the crises. Stimulants should be avoided. Roux and Achard insist on the benefit obtained from the use of milk and buttermilk. Sodium nitrite has been recommended by Raymond, and found effectual when administered in increasing doses.

In all cases of tabes with gastric crises, Wassermann reactions should be made, not only of the blood, but also of the spinal fluid. Whenever the reaction is positive the most active antisyphilitic treatment should be instituted. The most beneficial results are at times obtained in this condition from this form of treatment.

PERSONAL EXPERIENCE.

Our observations extend over a series of forty-two cases of tabes in which attacks of gastric crises occurred. The patients were all males, whose ages ranged from twenty-nine to sixty-four years. The attacks of gastric crises were noted five times as an initial symptom of the tabetic disease. Severe pain was noted in eleven cases, was moderate in nine cases, and variable sometimes, severe and sometimes moderate, in twenty-two instances. Severe attacks of vomiting were observed in twenty-three instances; moderate in twelve and variable at times, severe and again moderate in seven cases. The general health of the patient was affected as a result of the crises in twenty-five instances in our series; the general health was not affected in seventeen. The gastric secretion was examined both during the crises and in the interval. The secretion was obtained during the crises of thirty-five patients, it contained a normal amount of acid in six cases, while hyperchlorhydria existed in thirteen; hypochlorhydria in ten, and the gastric secretion was variable in its acidity in six cases. The gastric secretion was secured during the interval of the attacks in thirty-six cases. There was a normal-acidity in fourteen instances; hyperchlorhydria in twelve, and hypochlorhydria in ten.

If we classify our forty-two cases, according to the plan of Sainton and Trenc, six cases would fall in the mild variety, that form accompanied by pain, but with little vomiting. Of the abortive variety, there were nine cases of the vomiting form and five of the gastralgie. Of the severe variety we note three; this is the form accompanied by extreme pain and collapse. In the complicated variety there was one with hematemesis, and four with hypersecretion. In the abnormal variety, that form with very frequent repetition of attacks, there are three cases, and in the variety alternating or associated with the other symptoms, eleven.

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*For a full description as well as bibliography of this subject, the reader is referred to the very complete paper of Sainton and Trenc, *Gazette des hôpitaux*, 183 and 210, 1908, to which the writers are greatly indebted for much of the information contained in this article.

NEURASTHENIA IN THE UNITED STATES.*

One Cause and Its Remedy.

By J. MADISON TAYLOR, A. B., M. D.,
Philadelphia, Pa.

Neurasthenia is a popular and inexact term used to designate a host of distressing phenomena hindering efficiency. These dominate and confuse manifold economic, social, and clinical problems.

Among the pageantry of invalidism are irritability, unrest, prostration, impermanence, irascibility, and other insignia of impaired dynamics, indicating morbid fatigableness.

When employed loosely, the term neurasthenia, or psychasthenia, serves to obscure a right estimation of definite symptoms of mental and physical exhaustion and of true disease states. It likewise interferes with prompt application of well selected remedial measures. However one may interpret the much abused term, there is urgent need for solution of the subproblems involved.

Certain postulates are offered:

THE ESSENTIAL CAUSES OF NEURASTHENIA AND ITS CONGENERS.

In the United States widespread evidence exists of constitutional susceptibility to factors of exhaustion. It is probably on the increase, or at least, observed with greater accuracy, is becoming scientifically classified, and sufferers are now treated with judgment.

The fundamental agency in the production of nervous irritability, or subversion of vital energies, is, in my opinion, to be found in peculiarities of climate not adequately reckoned with, and their corollary, careless omissions to observe economic modes of life, whereby the hurtfulness of local climatic conditions can be escaped. While this holds true for all types of people, it is of special consequence for blonds. Among blonds, especially in the third and fourth generations, are notable instances of neurasthenia to be found in tropical and subtropical countries.¹

The causal factor cited is in strict accord with anthropological findings. While many disturbing agencies are, and can safely be ignored, history has yet to show that racial adaptations reach a negligible status unless essential conservations are observed, and plenty of time is allowed for reparative adjustments and adaptations, which are invariably slow, occupying not less than many centuries.

It is a well established principle that racial evolution by selection takes place by a process of invariable and merciless elimination. Every character acquired by a species marks a step in agelong processes of selection and rejection whereby adaptations are achieved constituting conditions for survival.

One race of pronounced type, or character, when suddenly transplanted to a hostile environment.

*Read before the annual meeting of the American Climatological Society, Hartford, June 10, 1912.

¹The scientific evidence on which these opinions are based is to be found among the works of anthropologists, though there is diversity in conclusions. We are indebted most to the painstaking observations of Colonel Charles E. Woodruff, M.D., U. S. A. His book, *Expansion of Races*, should be read by all Americans. See also paper by Austin O'Malley, in *American Medicine*, November, 1908, The American Climate and the Northern European. It is my intention to expand the present sketch on another occasion.

does not and cannot merge or blend into the local types, but disappears, evaporates.

For example, the blond Northmen who overran Southern Europe, founding empires, dominating local races, for a brief period, wholly disappeared in a few generations. Also the preHomeric Greek invaders from the north vanished, as did the Baltic types.

The same is true of the Aryan races that overflowed into Ceylon, Java, and Sumatra, leaving traces of a noble civilization; so likewise of less notable incursions of black or brunette peoples into Western Europe, e. g., Attila, the Great Khans, Tamerlane, the Turks, etc.

Races can, and occasionally do flow out of their normal habitat, become adapted to new and foreign habits, conditions, often to their advantage. The process is ever and always by extremely gradual approaches, affording ample opportunity for deliberate adaptations to climate and other local peculiarities or conditions.

Race survival is conditional upon a variety of economic factors, all clearly in accord with the laws of selection, accommodation, conformation, in brain, skin, hair, nostrils, etc., and not less in mental and moral traits. Each type becomes fitted to reside in a special locality and is then unable to acclimatize elsewhere.

"Man and other species resemble glaciers in plasticity, for though apparently hard, rigid, and unchangeable, yet they are moulded like clay in new forms by very slow migrations or changes of environment; a process extending over immense ages and really resulting in new types adjusted to the climate and unable to return to the ancestral home"² except by the same evolutionary steps.

The United States lies in a latitude similar to that of the Mediterranean basin. The Canadian border on the north is about on a line with the Riviera, southern France, and the upper part of Spain; and Mason and Dixon's line, between the North and the South, is practically on the parallel of the North African coast. Labrador is in the latitude of England. The zone of the brunette man is from the thirty-fifth to the forty-fifth parallel. The forty-fifth parallel passes near Halifax, Bangor, Ottawa, St. Paul, etc.

The isothermal lines, we are told, dip southward in America and account for temperature differences. So they do, but nothing can alter the insistent factor of equivalent solar energy, sun glare, in any tropical latitude. It is this feature which gives character and ferocity to our long summers. This protracted, sustained summer heat and sunlight is precisely the same in any similar latitude, despite any or all local modifications. Overplus of heat, and especially of light, has been demonstrated to be the chief agency in producing tropical neurasthenias. We, in the United States, exist under the same, or similar, conditions of, or effects on energetics as those in other tropical countries.

Physicists that work with extraspectral rays, Röntgen's rays, Becquerel's rays, Blondot and Charpentier's rays, and the rays from actinium, polonium, and radium, must protect themselves or they will be severely burned, or suffer other serious damage. . . . The same rays, of course, exist in the sunlight, and we receive most of them

yearly between the middle of June and the middle of July, the month of suicide and homicide.

Finsen found that skin pigmentation can protect animal tissues from ultraviolet light. Therefore the stronger and more direct the sunlight upon the earth, the more pigmented the people that live under it. Even on a cold plateau like Tibet the inhabitants are brunette because the sunlight is bright and copious there, and the Eskimos are dark as a protection against the sunglare upon the Arctic snow.³

The belief that abundant sunlight and heat are essential for growth holds true, with modifications, for most vegetables. The idea that man is better for all the sunlight he can get is a reflex of sentimental ancestral notions, poetic verberation, familiar contrasts, cheerful assumptions, because a bright day is agreeable after dark days.

Man is, however, not a vegetable, but a human animal, subject to the same limitations by environment as brutes and subject to the same imperative conditions for adaptation. In all animals these adaptations demand for safe and wholesome evolution much more than transplantation; no less than long periods of gradual adjustment to new modifications by environment. The invariable rule of such qualifications is that *those individuals suffer most who exhibit least the physical characteristics or conformations necessary for survival in any climate for which they are not adapted by a long evolution and deliberate selection.*

The tendency for successive generations of blonds to deteriorate in a hot, glaring environment is clearly determined. The basis for this, as Colonel Charles E. Woodruff pointed out in 1900, is a progressive lowering of tone and resisting power in the central nervous system; a pitiless weakening of vital forces simulating neurasthenia. Disintegration of the vital forces necessary for sustained endurance encourages and strengthens divers hurtful agencies. Energy is a characteristic of peoples reared and evolved in cold, cloudy, dark countries. Active exertion is not only hurtful in the tropics, it makes for manifold destructive effects on vital structures. Those who survive in the tropics are those best capable of habitual indolence, quietude, restfulness, with only spasmodic energizing.

Physiologists have studied the problem somewhat; there is, however, needed much more exact research in anthropology as well as physiology and clinical experiences.

Woodruff quotes Warren Lombard (*Journal of Physiology*, 1882) to the effect that: "Muscular power is materially decreased in summer by several days of high temperature, especially with great humidity."

Grigens (*Archiv für Anatomie und Physiologie*, 1902) has studied the reaction times of Europeans and Malays and found that a "sojourn in the tropics reduced the time 14.4 per cent., as compared with those found in Europe." He thinks that "there is a general retardation of all nervous processes and the necessity for overcoming this inertia is responsible for the greater prevalence of neurasthenia in the tropics."

Conditions for efficient reenergizing or recuperation, such as sleeping, must be those of the normal environment—for the blonde a low temperature, for the brunette "genial warmth." While individuals

²C. E. Woodruff, *op. cit.*

³Austin O'Malley, *op. cit.*

of the white race are capable of living anywhere, all history shows that they deteriorate soon, or at least not late, in an alien environment, both as individuals and as a race.

The relaxed, perspiring skin of the blond under tropical temperatures is precisely the same as one in a warm or hot bath, which when prolonged is admittedly weakening; when indefinitely prolonged, cruelly exhausting. A lowering of the circulatory tone is thus induced, a reduction of efficiency and recuperative power precisely analogous to true neurasthenia. Not the least of these demagements is a lowering of moral tone. This is shown in "loss of memory, loss of muscular strength, increasing presbyopia, and other signs of exhaustion."

Lombroso's tables showing the monthly genesis of insanity in Europe, bring out the fact that by far the largest number of instances (nearly double) occur from April to August inclusive; least in January and February. Suicide is vastly more common from April to August (most in June and July) with a marked increase on hot days, and especially humid ones.⁴

Conscience becomes dulled, loss of temper explosive and extreme, during protracted heat, constituting a gradual debasement by environment. Such effects are especially noticeable in the very young and very old, and more so in women than in men. All these facts are related by numerous and competent observers.

THE REMEDY.

If the foregoing postulates can be sustained, then the remedial measures are obvious and urgent.

Methods of life should be adopted designed to meet these and similar exigencies. In the United States, so soon as the providentially cool winters are over, we enter a period of practically tropical weather. There may be comfortable days, but always they alternate with sudden and often protracted periods of heat, and at all times the solar energy and intense light are essentially subtropical and exhausting.

It seems well established that forces are at work throughout the major portion of the United States tending to lower powers of endurance, to increase susceptibility to fatigue neuroses and psychoses. Doubtless the causes are complex. Many of them are traceable to heredity, inheritance, faulty habits of life, erroneous personal conduct of one sort or another, prodigalities of energizing, "overstrenuousness," keenness in competition, pressure of social and economic "necessities," and the like.

There is among us a composite population, from northern and central Europe, with even larger numbers now coming from southern Europe. Those arriving from the older sources of emigration now tend to stream steadily northward into Canada. A large proportion of our population is from subtropical Europe, with brown or yellow skins. These thrive excellently and multiply satisfactorily. Then there are those of Anglo-Saxon, Scotch, Irish, German, Dutch, Slavic, and other peoples from northern Europe. Here they are; they cannot all move away. Statistics, or a right study of existing statistics, are needed to determine whether there are, or are not, among the descend-

ants of these blonds more recognizable effects of racial deterioration than among the brunettes. Attention should most certainly be focused upon the subject.

Careful observations should be made by physicians along these lines. Hospital and dispensary statistics should be studied to determine whether or not neurasthenic phenomena are exhibited most largely among those of northern racial stocks.

Meanwhile, it is pretty generally admitted that among our more urgent clinical problems is the one of prevailing neurasthenic phenomena. This obtrudes in the face of the fact that our people are well fed, well housed and clothed, in short, enjoy a degree of prosperity far in advance of many other countries. It is plain that diligence should be shown in learning how to mitigate and correct the causes, so far as is possible and practicable.

There is concurrence of opinion on one point, viz., our summers are hotter; more solar energy is exhibited in the form of glare, capable of contributing to the production of phenomena of depression than is observable in Europe, north or south. Our temperature changes are swifter; diurnal curves of heat and cold are larger, variations in humidity more extreme. No one of these may be accepted as adequate to account for the distresses and damage demonstrated. The significance of the climate factor cannot, however, be ignored.⁵

During our subtropical and protracted summers it is the part of economy to adopt forms of conduct, habits of life, of dress, of food, of hours, and conditions for work and play, in strict accord with those found by universal experience to be most compatible with the climatic factors to be reckoned with.

Violations of these elements of conservative personal hygiene are met by swift and condign punishment in the tropics. Are not many, if not most, of our own susceptibilities to exhaustion states due to the same or similar agencies?

If it be established, as seems probable, that the numerous and increasing evidences of neurasthenia in the United States are explicable on the same grounds, is it not imperative that we accept the insistent hints thus offered and adjust our habits of life to meet menaces to physical and mental integrity by employing practicable relief measures?

The directions in which modifications of personal hygiene are needed to conserve and enhance capacity for endurance, economic efficiency, and also the avoidance of exhaustion states, are, among others, these:

So soon as the summer solstice is established, then hours for work should be changed, beginning earlier by an hour, with an extra hour or more at midday devoted to rest—*siesta*. This is especially urgent for those who work in the sun. For all, the hours of work in midsummer ought to be fewer. Experience in the tropics demonstrates that better results are accomplished in four or five hours a day than in seven or eight. The total output of force is only so much, and the resultant is better work with shorter hours for labor.

Children should be kept under shade during the

⁴See article in *McClure's Magazine*, June, 1908, by George Kennan, *Problems of Suicide*.

⁵A patient from Odessa, southern Russia, in answer to my question about climatic conditions there, said: "At least, extremes of temperature representing the four seasons do not occur in any one day."

noontime and encouraged to sleep. Provision should be made for covered playgrounds, and abundant facilities for cool baths.

Our customary clothing is by no means suited to our tropical summer climate. Precautionary measures, hygienic and industrial, urgently demand attention.

Tree planting should be encouraged, even made obligatory, in cities, villages, along highways, and about detached dwellings. Statutory enactments may be essential to enforce arboriculture.

All practicable devices for cooling houses in summer should be utilized; among the best of these are electric⁸ power fans, dark awnings, penthouses over windows and doors.

All sustained activities should be intermitted by opportunities for midday rest. A short sleep is then essential for weaker persons, and desirable to conserve the output of results for every one.

By such means as these may we confidently expect large economies in health and invigoration. By neglecting or ignoring these essential modifications of conduct, we may with equal confidence expect a steady increase in the phenomena of exhaustion now plainly in evidence.

1504 PINE STREET.

FACIAL PARALYSIS COMPLICATING SUPPURATIVE OTITIS MEDIA; ATYPICAL MASTOID OPERATION.*

BY EMIL AMBERG, M. D.,
Detroit.

CASE.—On February 21, 1911, I was called in consultation by Dr. Gilbert J. Anderson and Dr. Guy H. McFall to see Mr. W. D., forty-six years old. The patient had had bronchitis three weeks before. On February 17th he had had severe pain in his left ear. On the second day the drum membrane was incised and on the third (over night) he noticed a paralysis of the left side of his face. He says on the fourth day he noticed a swelling about one and one half to two inches behind the auricle, which disappeared at times. He had very slight noises in the left ear, very little dizziness, no nausea, but he could not sleep. There was severe pain in the temple and parietal and occipital region. The pain was especially severe in the parietal region, he said, so that even the touch of his own hand was unbearable. Mucopurulent discharge was reported.

When I saw the patient, on February 21st, there was very little tenderness over the mastoid process, but a tender spot about one and one half to two inches behind the auricle. The patient suffered from considerable pain over the left side of the head. A facial paralysis engaging the regions of the forehead, eye, and mouth was plainly visible. On February 22d the patient was reported to be better. I saw the patient again on April 18th. I was told that he never felt really well since his first attack and now there was tenderness on pressure behind the auricle. I noticed a considerable sagging of the posterior wall of the canal suggesting an otitis externa, and a free mucopurulent discharge.

On April 19th, in Harper Hospital I opened the mastoid process and found a considerable portion of the posterior wall of the canal decayed. I thoroughly curetted this portion of the mastoid process and, finding the bone otherwise healthy, I did not consider it necessary to go further. Had I treated the wound in an ordinary way, an artificial atresia of the canal would have resulted. Therefore, I did a partial plastic operation. (See Fig. 1.) A

*Motor fans afford immense comfort and contribute notably to oxygenation and invigoration.

⁸Read before the Detroit Society of Neurology and Psychiatry, February 1, 1912.

similar procedure, if my memory is correct, had been sometimes followed in mastoid operations in Boston and Vienna independently. The operation as performed by me was not a so called radical operation nor a Heath operation nor an ordinary mastoid operation. Recovery was uneventful. On May 18th the patient said that he had sometimes formication of the scalp. The facial paralysis improved gradually. There is to-day still a slight paresis especially marked in the region of the mouth. Sometimes the patient has the sensation that a string pulls at his cheek, especially when the weather changes. Once in a great while he has itching pain in the ear. On January 25th he stated that about two weeks before, after he had been in a draught in the store, his face swelled up. The swelling yielded to hot poultices. A watch, which was ordinarily heard at a distance of at least eight feet, could be heard at a distance of only one foot in the left ear. The hearing in the right ear was also not normal. Probably changes of a nonsuppurative nature existed in the left ear previous to the attack.

Urbantschitsch remarks that swelling of the mucosa or exudates in the middle ear may cause pres-

sure paresis or paralysis of the facial nerve, if there is a dehiscence present, or if the canal has been opened by a suppurative process. The latter is scarcely probable in our case, although it may be possible. The author says that even if the facial canal is closed, a strong hyperemia of the tympanic cavity, or an increased filling of the stylomastoid artery, which is found in the facial canal, may cause a paresis of the facial nerve by pressure. He mentions that not infrequently a facial paralysis is cured by curetting of the carious necrotic mastoid process.

Politzer states that a middle ear suppuration may be complicated by a facial paralysis (Schwartzze), or by a neuralgia of the nervus trigeminus caused by a simultaneous affection of the Gasserian ganglion or, still less frequently, by a cervicococcipital neuralgia. Politzer treats at length the paresis of the facial nerve in his textbook. He mentions, for prognostic purposes, the importance of the differential diagnosis between

rheumatic and otitic facial paralysis, because the rheumatic paralysis occurs in nonsuppurative as well as in suppurative cases. In Politzer's clinic, Neuman found that the rheumatic paralysis appears suddenly and engages all branches, especially the branch at the angle of the mouth, whereas in otitic paralysis the

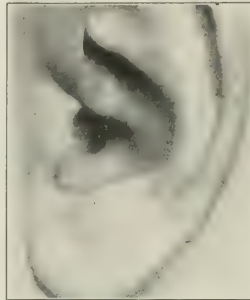


FIG. 1.—Left auricle and meatus, showing result of plastic operation.



FIG. 2.—Right auricle and meatus, normal.

process gradually attacks branch after branch.

H. Oppenheim refers to the thin plate of bone which separates the nerve from the tympanic cavity and to Tomka's findings that among other factors the width of the facial canal, the thickness of the bone, and spontaneous dehiscences play a part. Oppenheim maintains that the rheumatic or refrigeratory facial paralysis has sometimes prodromes, especially pain, lasting for some days, even one or two weeks, before the paralysis appears. This pain must be referred to a simultaneous neuritic affection of sensitive nerve branches, especially of the trigeminus, occipital nerves, and nerves of the neck. A slight swelling of the face especially in front and below the ear, is also reported to be seen in the beginning of the affection, more rarely a diffuse swelling of the whole side of the face. He maintains that more recent observation makes it probable that an infectious process takes place which causes a neuritis. Oppenheim also mentions that a facial paralysis and an otitis may originate simultaneously from the same source.

REMARKS.

We have before us a patient who suffered from an attack of acute middle ear suppuration. After an indicated incision of the drum membrane a facial paralysis developed. Inasmuch as I was told that the patient had worked in a hot place, and was subjected to draughts of cold air, I considered the facial paralysis first as a rheumatic affection, but I did not lose sight of the middle ear suppuration. I kept in mind that a known anomalous condition of the Fallopiian canal, or an extension of the middle ear suppuration might be present, either directly or collaterally, and might account for the affection. Examination for determining the disturbances of taste were not made. Taking both possibilities into consideration, the treatment was expectant, until improvement was not realized. The symptoms which presented themselves when the patient was seen again by me made it clear what course should be followed.

270 WOODWARD AVENUE.

AMERICAN AND EUROPEAN MEDICAL SCHOOLS.

By A. L. SORESI, M. D.,
New York.

American physicians go to Europe in order to perfect themselves in the different branches of medical science; few European physicians come to America for the same purpose. European business men, however, come to America to investigate American business organization; few Americans go to Europe for that purpose. Is it only a fad on the part of the American physician to go to Europe, and of the European business man to come to America, or is it acknowledging that medical science is more advanced in Europe than in this country, as business methods are in America than in Europe? If we examine where American physicians go we shall find the reasons why they are attracted there, and find the way to keep them home and perhaps have European physicians come to us.

The great majority of physicians, not only Amer-

ican, after graduation, go to Berlin, Paris, and Vienna. To go to such cities they have to learn a new language, French or German, or both; it is evident that London, where the language is the same as in this country, should be preferred, if there were no other reasons. The reasons why medical students are attracted to Berlin, Paris, and Vienna is because of the universities of Berlin, Paris, and Vienna. What is it that makes those universities so great and famous that they attract the bulk of competent medical men, who wish to be instructed and perfected by scientists whom they recognize to be the masters of their specialty?

Can Americans with their spirit of enterprise and ambition create such centres of science as Berlin, Paris, and Vienna, or even something better? It is my firm conviction that many American cities could be and should be as attractive to medical students from all over the world, as the cities mentioned, if the spirit that makes America the greatest business country be adopted in regard to medical science. New York especially, could and should be the greatest centre of medical culture; its population, for size and different races, is unique; it has the men who can be the pillars, on which the best medical school shall have its foundations; has better communications with every centre of civilization than any other city; has ambition, and the money to carry on the most ambitious enterprise.

Let us see briefly what are the coefficients which make the medical colleges of Berlin, Paris, and Vienna what they are, and see how they could be adopted and bettered in this country.

In Austria, France, and Germany, education is an exclusive governmental institution. It is not left to the individual; it is considered the highest function of a self respecting government to take care of every branch of instruction from the elementary school to the universities. The government holds and pays for the maintenance of every school, including medical colleges. Every position on the teaching staff is open to the widest competition, every one has a fair chance of becoming whatever his talents and ambitions allow him to become. In every city of a certain size there is a medical college, *but only one, no matter how large the population.* In Berlin, Paris, and Vienna there is one university, one medical college, which is the medical college of the city of Berlin, Paris, and Vienna, *representing in this way all that those cities and the government are able to do in the line of medical education.* The hospitals belong to the city, and by special agreement with the medical faculties the different professors are enabled to pick up whatever clinical material they require for teaching purposes. Each official professor has special hospital accommodations, by which patients are kept under his care for teaching purposes, and patients are very anxious to be under such care, because they know that they have the very best of treatment and assistance. Every professor is appointed through the widest competition, after having been for some years assistant to some other professor or *privat dozent* or *professeur agrégé*. The institution of *privat dozent* or *professeur agrégé* is what makes European universities enjoy the high scientific standing which is recognized as their best asset. Any one who specializes in any branch of medicine

has the right to ask the faculty to allow him to teach. He receives certain hours, a room for lecturing, and in some cases clinical material, so that any man who has ambition and brains can obtain such honor. If I should report here the names of all the *privat dozenten* and *professeurs agrégés* of the universities of Berlin, Paris, and Vienna, it would be seen that among them are some of the most celebrated men of the day and their number is enormous. The students go to listen to the lectures and the teaching of these *privat dozenten*, which is absolutely free, and not compulsory, so that they go only to those who are teaching something worth learning, and who know how to teach. The enormous scientific work done by these *privat dozenten* is always published as coming from the universities to which they belong, and this is a great element in helping to give such universities their renown.

It is said that in this country there are not the great men to make universities famous. I do not think comparisons are justified, but I cannot help mentioning the names of the men who compose the faculties of Berlin, Paris, and Vienna, and anybody with medical culture will see that many American cities, such as Boston, Philadelphia, Baltimore, Chicago, etc., and especially New York, can put beside those great masters men who are their equal. Naturally, only the names of the official professors are given; it would be too long to give the names of all the teachers, adjunct professors, and *privat dozenten* or *professeurs agrégés*.

University of Berlin—Robert von Olshausen; Wilhelm Waldeyer; Johannes Orth; Oscar Hertwig; Karl Flüge; Max Rubner; Ernst Bumm; Friedrich Kraus; Otto Heubner; Arthur Heffter; August Bier; Otto Hildebrand; Theodor Ziehen; Wilhelm His; Karl Franz; Adolf Passow; Gustav Killian. Ord. Hon. Professoren: Edmund Rose; Hermann Munk; Bernard Fränkel; Gustav Frisch; Julius Hirschberg; Otto von Schjerning; Alfr. Goldscheider; Eduard Sonnenburg; Anton Ewald; Ernst Salzkowski; Gaffky; Edmund Lesser.

University of Paris—Nicolas; Ch. Richet; Weiss; Armand Gauthier; Raphael Blanchard; Archard; Vidal; Tessier; O. M. Lannelongue; Pierre Marie; Prenant; H. Tardant; Pouchet; Marfan; Chantemesse; Thoinet; Letulle; Roger; Deboue; Landouzy; Chaffard; Gilbert; Paul Segond; Quenu; Reclus; Pierre Delbet; G. Ballet; Hutinel; Gaucher; Déjerine; de Lapersonne; Albarran; Pinard; Paul Mar; Ribemont; Dessaignes.

University of Vienna—Ernst Ludwig; Friedrich Schauta; Viktor Ebner Ritter v. Rothenstein; Ernst Fuchs; Josef Moeller; Sigmund Exner; Edmund von Neusser; Anton Welchselbaum; Julius Ritt; Wagner; Jauregg; Hans Horst Meyer; Friedrich Dimmer; Ferdinand Hochstetter; Karl Harko von Noorden; Alexander Kolisko; Richard Paltauf; Ant. Freiherr von Eiselberg; Gust Riehl; Julius Hochenegg; Ernst Finger; Arthur Schattenfrohn; Norbert Ortner; Ernst Wertheim; Julius Tandler; Clemens Freiherr von Pirquet; Franz Chvostek.

It is astonishing to see that Americans, who are so intelligently practical, have failed to notice the good that there is in the organization of European medical schools, and instead of concentrating the good elements, which might create a great medical centre, they have scattered them, so that their value as an ensemble does not correspond to their value as individuals.

There are not less than ten medical schools in New York (including postgraduate institutions). Each is good, each has good professors, each has very good points, but each is too small, and there are not enough famous men, not enough facilities to attract the attention gained by

the good points, the great men, and the facilities which are concentrated and compose the one faculty of Berlin, Paris, or Vienna. To show how wrong is this scattering of energies I will call the attention of my readers to the fact, that New York is what it is, because its population is concentrated in a very relatively small area and lives under the same municipal government; if the same population was divided among ten cities, each with a different individual government, each would be a remarkable city, but none of them alone would be worth, or represent even one hundredth of what New York now is worth and represents to the mind of every human being; many would even ignore their existence.

Medical schools should not be private enterprises, but be owned and maintained by the government; it is a false idea, the idea that there must be freedom in medical science; there is only one medical science, and that is the science which is based on a good sound knowledge of anatomy, physiology, and pathology. The aim of medical science is to fight disease, and it is not a limitation of one's liberty to ask that any one who wants to defend humanity from disease should know it thoroughly. The government should organize and pay for the maintenance of medical schools, just as now, without thinking of violating any one's liberty, it organizes and pays for the maintenance of the army and navy, which have to defend the country from its enemies.

But if for the present this is not attainable, I think it would be possible to amalgamate all the medical schools, make arrangements with the hospitals, and form one great institution; open its doors to any one who has ambition and brains, by creating the title and rights of *privat dozent* and giving them to those who deserve them. It is said in too many quarters that medical schools are nothing but commercial institutions, and that the mass seeking a professorship, do so, not for the sake of the advancement of science, but for the financial returns the position brings. I know that to be true only in a very few exceptional cases, but in order to dispel even the suspicion that such is the fact, the only thing is the institution of the *privat dozent*. Young ambitious men would have a chance to show their worth and would stimulate the official professors to keep abreast; it would be the sane competition that makes progress. I think that the greatest American college will be the one which adopts first the institution of the *privat dozent*.

75 WEST FIFTY-FIFTH STREET.

ACUTE ANTERIOR POLIOMYELITIS.*

Clinical Observations of Recent Cases.

By FRANCIS E. BUTLER, M. D.,
New York.

CASE I. A. B., six and one half years of age, female, born in New York.

Family History. Father neurotic temperament. Mother normal. Patient was third child. First child died at birth. Second child died of diphtheritic croup. Child was breast and bottle fed and had always been of a delicate type, pale, anemic, blond, and highly nervous. Forehead high and

*Read before a stated meeting of the Alumni Association of the St. John's Guild Hospitals for Sick Children, held on November 13, 1911.

broad and caused suspicion of hydrocephalus. Child had been under my observation for the past eight months and was treated during that time for acute follicular tonsillitis, acute chorea, and anemia. The child was healthy during the summer, was vaccinated in September, 1911, and was admitted to school.

On Thursday, October 19, 1911, at 4 p. m., I first saw the child for the present illness and obtained the following history. Had been in the country for three days and returned on Sunday four days before I saw her. Mother stated that she seemed sick, but appeared well on Monday. On Tuesday child was feverish and complained of a headache, but on Wednesday seemed well again and went to kindergarten. On Thursday, when seen by me, the child complained of headache, pain in the back of the head and neck, and through its arms and legs. When seen by me she was sitting up in bed, talking and playing with her doll. Temperature, 102° F.; pulse, 108; respirations, 22. Examination of lungs, heart, and abdomen negative. Spleen was not palpable. Throat negative. Tongue clean. Reflexes seemed normal.

On account of the child seeming to be sick every second day, and the history of an attack of malaria a year before quinine was prescribed. On Friday, about 4 p. m., I saw the child again. Temperature was 102.4° F.; pulse, 110; respirations, 24. Child had been very restless and irritable during the day and complained much of headache. She vomited very much; had taken but little nourishment; bowels had moved freely as result of catharsis; mind clear; no skin eruption. Pupils were dilated and reacted to light; patella reflex on both sides much exaggerated; no Babinski or Kernig sign present; marked rigidity of the posterior neck muscles. Any attempt to reflex the head caused severe pain. A diagnosis of meningitis was made tentatively.

On Saturday at 10 a. m. I saw the child again. She had been very restless and irritable during the night, tossing about in bed and vomiting frequently. Temperature ranged from 102° to 103.6° F. Examination showed pupils dilated and marked photophobia, eyes turned away from the light. Body was perspiring freely. Abdomen retracted. Marked *tâche cérébrale*. Marked rigidity to the neck and back muscles. Patella reflex present in both legs, but much exaggerated in right leg. Babinski sign present in right leg, but not in left. In attempting to flex head on chest, both thighs became flexed on abdomen, with legs flexed on thighs (Bruzinski or identical reflex). Kernig sign present, more marked on right side. Arms seemed normal. Child was conscious, but very irritable when disturbed, wanting to lie on side with eyes away from light and with head retracted posteriorly. Temperature, 103° F.; respirations, 40; pulse 60, slow and full.

From now on the child's condition rapidly became worse, changing about every fifteen minutes. She became delirious, head was more retracted posteriorly, and she tossed about the bed from side to side. Respirations became more rapid, 50 to 60, and of a more abdominal type. Eyelids closed, pupils contracted, converging strabismus.

Within two hours child became semicomatose, and when attempts were made to rouse her, she cried out with a typical meningeal cry. Respirations became of the Cheyne-Stokes type. Body was bathed in profuse perspiration.

Two hours later, at 2 p. m., Doctor Sophian, who was in charge of the department of health research laboratory for the investigation of cerebrospinal meningitis, saw the child with me. The child was then unconscious. Temperature, 102.4° F.; pulse, 130; respirations, 60 to 80, irregular, abdominal type. Body was in profuse perspiration. Converging strabismus; no patella reflex in left leg; slight reflex in right leg; left leg paralyzed; both arms partially paralyzed, with beginning wrist drop; facial paralysis on right side; head markedly retracted, with rigidity of back muscles.

Lumbar puncture was done and about an ounce of clear fluid flowed slowly from the needle, not under pressure. From the rapidly developed paralysis and the condition of the spinal fluid, Doctor Sophian and myself agreed on the diagnosis of polioencephalitis or meningoencephalopolio-myelitis, affecting rather the brain than the spinal cord.

The child continued to become rapidly worse. She tossed from side to side; cried out aimlessly; breathing became more difficult, rapid, and labored; and arms more paralyzed. At about 8 p. m. she became unable to swallow and gradually sank into a comatose condition, with head markedly retracted and body taking a position of opisto-

tonus. Pulmonary edema gradually developed. Child died of paralysis of respiration Sunday, 7 a. m.

The examination of the cerebrospinal fluid showed a fluid similar to that obtained in cases of tuberculous meningitis. There was an excessive number of lymphocytes; very marked globulin reaction; cells not so numerous as in tuberculous meningitis; and a marked increase of fibrin. The fluid was injected into guineapigs. After eight weeks the guineapigs were killed and no tuberculous was found.

This case is reported as interesting from the fact of the early observation of the disease, the rapidity of its advance, and the hopelessness of its treatment. The diagnosis from meningitis is difficult. The rapid advance, the subsequent rapid paralysis, and the examination of the cerebrospinal fluid are the chief means of differentiation from meningitis.

FATAL CASE OF ANTERIOR POLIOMYELITIS, BULBAR TYPE.

CASE II. K. K., four and one half years old, born in New York, one of twins, the other a boy. One sister also in the family, six and one half years old. Father and mother born in Ireland, having good family history. The child, with her twin brother and older sister and mother, had been for ten days at Jersey City Heights at the house of their aunt. The children were accustomed to play in a vacant lot in the rear of the house, which was overrun with grass and weeds. They returned to New York Tuesday, August 29, 1911. On Thursday, August 31st, she complained of headache and of feeling sick and had a dose of castor oil from the mother. On Friday, September 1st, she complained of headache and pains throughout her body. At about 4 o'clock in the afternoon, in going across the room to the toilet, the child fell on the floor. Her mother undressed her and put her to bed. She could then use her arms and legs. Ten minutes later, when the mother attempted to give her an orange, she noticed the child could not move either the right or the left arm.

I saw the child at nine o'clock that night. She then complained of severe headache. Her face was flushed; respiration was rapid and labored; respirations 54, pulse 136, temperature 102° F. Body was relaxed; both arms lay by sides of body and she was unable to move them; slight wrist drop; skin was moist with profuse perspiration. She was able to control legs. Patella reflex diminished, lungs negative, respiration full and deep, and of abdominal type. Heart action was forcible—otherwise, negative. Eyes were normal; the pupils reacted. Tongue was normal. Child was rational; complained of headache; and was somewhat irritable. Anterior flex of the head was resisted and caused pain.

On September 2d, temperature was 101° F., pulse 120, respirations 32 to 38, still labored, and of the abdominal type. Child was rational, somewhat irritable, and able to swallow easily. She complained all night of headache and pain in the back. Any attempt to lift the child made her cry out on account of severe pain. She was unable to sit upright or hold the head erect. Her head would wobble from side to side. Both her arms and hands were paralyzed, but she was able to move both legs freely. Abdominal muscles were relaxed, with abdomen much distended. Bowels moved during the night. She was still perspiring profusely. Ice bags were applied to the spine from the occiput to the sacrum and gave her much comfort. She was always ready to be placed back on the ice bags after they had been filled.

Sunday, September 3d, temperature 99.6° F., pulse 108, respirations 28, still deep, labored, and of the abdominal type. Child was very restless during the night, slept very little, cried out with pain in the arms and legs, and wanted their position frequently changed. While the muscles of the legs reacted, their muscular power was much diminished. The knees, thighs, and ankles were partly flexed. Any attempt at extension caused pain. The abdomen was still distended, showing a paralysis of the abdominal muscles more marked on the left side. Mental condition rational, but child was stubborn and refused to talk.

Monday, September 4th, temperature was 100° F., pulse 112, respirations 30, somewhat slower and deeper. Child passed the night in the same restless manner as the previous night. Her mother had to continually change the position of her arms and legs and rub them to relieve the pain. In swallowing, she had for the first time choking attacks, which produced marked cyanosis and exhaustion.

Examination showed a lack of control of the muscles of the tongue and the muscles of swallowing.

Tuesday, September 5th, temperature was 99° F., pulse 100, respirations 30 to 40, not so labored. Mother stated the child had frequent choking attacks during the night, whenever she attempted to swallow liquids or solids. Examination showed the child cool, pulse good, complete paralysis of both arms, muscles of the back and of the neck.

Wednesday, September 6th, condition of the child was about the same, temperature and pulse normal. Had frequent attacks of collapse, seeming to choke and have difficulty in breathing, but would soon revive. These attacks occurred especially when the child was lifted or moved. She still complained of considerable pain in arms and legs.

Thursday, September 7th, child seemed improved; rested more easily; swallowed much better; temperature normal; pulse soft and good quality; respirations 40, and not so labored. She was able to move her legs, but the muscular power was much diminished. The muscles of the upper extremities and of the neck and back were paralyzed.

Friday, September 8th, the child had rested better than on any other night. Complained of less pain and took nourishment better. The mother considering the child better went to Jersey City Heights to bring home the six and one half year old sister, who was said to be sick. The one left in care of the child attempted to change the child's position in bed. The child's head fell back and respiration seemed to stop immediately. The child was dead.

In these two reported cases the fatal issue seems to have been due to respiratory paralysis. In the first case the cerebrum and the bulb were chiefly affected. In the second case the bulb and cervical and upper dorsal segments of the spinal cord were affected.

It is of further interest in connection with the second case reported that the six and one half year old sister and the eighteen months' old cousin in Jersey City Heights were likewise infected with anterior poliomyelitis. The source of infection in all three cases seems to have been the same. The sister had both lower extremities affected and the back muscles of the trunk. For three months she was unable to sit upright or to stand. After seven months from the date of infection she recovered power in all the muscles, except for a slight weakness in the anterior muscles of the right thigh.

The eighteen month old cousin, a boy, had the left leg and thigh affected. Nine months from the date of infection he had recovered complete power of all the muscles of the thigh and leg, with the exception of the anterior tibial, extensor hallucis, and common extensor digitorum.

It might be mentioned that the twin brother of the second deceased patient, who had been continually with the others up to the time they were taken sick, was sent out of the city and remained away for three months. He had apparently escaped infection, as no symptoms of the disease developed.

151 WEST EIGHTY-SECOND STREET.

MATERNAL NURSINGS.*

Some Important Contraindications.

By W. MORGAN HARTSHORN, M. D.,
New York.

That maternal feeding is of paramount importance to the baby is generally conceded, yet we have all doubtless experienced cases in which we have

wondered whether it was safe for the child and for the mother to allow the nursings to be continued.

Briefly enumerated, the advantages of these feedings are (a) the baby receives its normal food in a strength which is best suited for its digestion and is accordingly most nourishing; (b) by the act of nursing involution of the uterus is facilitated and the maternal feelings are stimulated; (c) in normal cases the purity and the temperature of this food are unquestionable; (d) the baby's development is often watched more carefully than otherwise.

However, in some cases there are reasons which make it advisable to wean the baby even against the mother's wishes. The object of this paper is to discuss some of the most important contraindications for breast feedings. Not finding satisfactory literature upon this subject, I wrote to some of our prominent obstetricians, asking their personal opinions upon these different problems. I am indebted to them for their courteous responses.

Of the conditions which might influence the mother during the puerperium, first in importance stands eclampsia. To the question, Do you permit eclamptic mothers to nurse their babies if it is possible for them to do so, during an attack and afterward? Doctor Cragin says that during an attack all sources of nerve irritation should be avoided, hence nursing is not permitted; moreover, the milk during an attack is of poor quality. After the attack has passed many women can nurse without detriment to themselves and with benefit to the child.

Doctor Painter says not in the acute stages, but it may be permitted afterward. Doctor Voorhees also agrees that it is safe for the mother to nurse after the acute stages have passed and the albumin is well down. Doctor Lobenstine says: No, very seldom in mild cases. Doctor Ryder says mothers who are eclamptic, toxic, should not nurse. If albumin disappears quickly after an eclamptic attack they may be allowed to try nursing. Doctor Ward permits nursing after recovery is assured, when convulsions have ceased, and full consciousness is regained. Doctor Knapp also says that the mother should not nurse until it is certain that the attack is over. He thinks that the baby should not be allowed to nurse where there is anything more than a small elevation of the temperature or where the mother is not able to take a normal diet. He believes that in any form of toxemia the toxines may be given to the child through the milk. Doctor Strang replies: No. In almost every case the milk has not appeared. He speaks of one case which he saw in the hospital in which the milk was secreted in a few days after the attack and the child nursed without ill effects. Doctor Ramsay forbids it in cases where the convalescence is slow and where the renal condition clears up slowly. In cases where the convalescence is rapid he sees no harm. Doctor Brodhead thinks that a mother may nurse after the signs of the toxemia have subsided and the breasts have been emptied several times. Doctor Dorman agrees that it is safe in the third, fourth, or fifth day if the condition has responded to treatment.

The cases may be divided into mild and severe,

*Read before a stated meeting of the Alumni Association of the St. John's Guild Hospital for Sick Children held on November 24, 1911; and at the New Haven Medical Association, March 7, 1912.

ante partum and post partum. The post partum cases are the most dangerous for the welfare of the child. A toxemia which results in the severe manifestations of eclampsia may have some prenatal effect upon the organs of the child, and although the cases reported have been few in number, yet it has been shown that in children of eclamptic mothers nephritis is quite likely to develop. Autopsies have revealed congestion and parenchymatous degeneration of the liver and kidneys, more or less marked.

Several interesting cases have been reported by Goodall, of McGill University, in which apparently healthy infants have died soon after nursing from mothers suffering from eclampsia post partum. He concludes that the toxins are eliminated by the milk and that in this milk secreting toxins, they may be even more virulent than those which circulate in the blood. He concludes that we must be sure that the toxins have disappeared and that the breasts have been thoroughly emptied several times. He thinks that if albumin has continued after gestation it is best not to allow the child to nurse at all.

These cases have also been supplemented by four cases, three ending fatally, reported recently by Dr. Conway Frost in the *Archives of Pediatrics*. The histories are nearly the same as those of Doctor Goodall, each of the attacks following soon after nursings from post partum eclamptic mothers. Doctor Frost concludes that the milk of the eclamptic mother is even more toxic than her blood, and that a seizure coming on just prior to the secretion of milk makes it doubly so, as Nature takes this means of elimination, and he declares that he shall forbid nephritic or eclamptic mothers to nurse their newborn infants.

Commenting upon Doctor Goodall's cases, Doctor Pisek and Doctor Pease, of New York, endeavor to show that these conditions were not due to pathological conditions of the kidneys probably, or the results would have shown themselves irrespective of the nursings, but might have been very probably due to anaphylaxis. They base their conclusions largely upon results obtained upon sensitized guinea pigs, producing this condition after feeding them milk, showing that anaphylactic shock can be induced by absorption of milk through the gastrointestinal tract.

It seems to be the consensus that nursings must be discontinued during the acute stages. In the mild cases it may be permitted when there is no evidence of the toxemias remaining.

Another serious complication of the puerperium is septicemia. In reply to the question, Do you permit patients suffering from septicemia to nurse their babies? nearly all the men agreed that a true septicemia was a contraindication to nursing. The mild cases were not so regarded. Doctor Painter says that in cases where there is a bacteriemia, nursing should be prohibited, but in mild cases he permits the mother to nurse if her condition warrants it. It is generally acknowledged that a sapremia is not a contraindication in the majority of cases. Doctor Voorhees permits nursing in mild cases. In the severer cases the mother's milk is often insufficient and also there is some danger of the transmission of the organism from the mother to the

child in a virulent form. It must be remembered that the mother needs all the vitality and strength possible. Often the absorption from the breast is out of proportion to the infection. This may be illustrated by the effect of some of the cathartics, or other drugs, as the bromides. The effect upon the mother may be mild, while the baby may be greatly upset. In all these conditions we try to preserve the mother's milk by the use of the breast pump, while the infection is mild and an early recovery anticipated. Bacteriemias and pyemias are often a terminal and most serious condition.

Mastitis is another not uncommon complication due generally to a staphylococcus infection. Nursing must be discontinued because of the danger to the child from the infected milk acini and the transmission of bacteria, also because the condition is an acute one and often accompanied with severe constitutional disturbances. Rest for the breast is most essential. It is often possible and wise to allow the other breast to be nursed or emptied by the breast pump regularly. This is true especially in the mild cases. The severe ones are those in which the infection is deeply seated, as in the interstitial and parenchymatous varieties. If the infection is submammary the condition is even more severe.

In the consideration of constitutional diseases tuberculosis is of foremost importance. For many years it was thought that patients suffering from lung trouble were in no wise harmed by pregnancy, and consequently many disastrous alliances were entered into. In later years the prevalent opinion is that women suffering from tuberculosis should not marry because of the danger of stirring up latent processes with disastrous results.

Doctor Lobenstine, in an extremely interesting study of 100 tuberculous cases in the lying in hospital, concludes: "Pregnancy offers deleterious effects upon the patient and offspring, the nausea and vomiting interfere with nutrition, the enlarged uterus with the oxygenation of the blood. Babies should absolutely be kept apart from their mothers or from any other source of contagion. They should be fed upon milk from wet nurses, or modified milk, and should never nurse from the mother because of the great drain upon the woman and the dangerous association for the child."

In reply to the question: Is it permissible for tuberculous patients to nurse their babies? Doctor Ramsay says it is never permissible. Doctor Broadhead and Doctor Dorman say practically never, because of the bad effects upon the mother. Doctor Strang says that in the quiescent cases, if the mother is in good condition, he has allowed breast feeding without ill effects to the mother or child. Doctor Ward answers no, a possible exception is in the cases of "healed" or "arrested" lesion where breast feeding is essential to the life of the child and then nursing is permitted for a short time only. Doctor Voorhees never allows tuberculous patients to nurse. Doctor Cragin answers no. Doctor Knapp thinks that the nursing and the secretion of the milk is a drain on the mother's strength when she needs to devote herself to her own cure. The danger of reinfection of the child, even if it is tuberculous, is great, as he thinks that the breast glands do not filter all the tubercle bacilli and that

there is always danger of an ulcer or an abrasion somewhere in the breast. Doctor Ryder says no. The mother needs every bit of reserve strength.

Doctor Painter replies no. In general and even in healed processes, he hesitates because of the danger of stimulating an old trouble, especially where it is so easy to feed babies by the fractional method. He does not believe that the tubercle bacillus is transmitted through the milk. Doctor Lobenstine is also doubtful in this regard.

Dr. Augustus Wadsworth says that the danger of mother's milk being infected depends chiefly upon the question as to whether there is a lesion of the breast or not. Bacteriemias of tubercle bacilli are extremely rare phenomena, but have been recorded—witness Ewing's case—hence the danger of tubercle bacilli being excreted with the milk, without a lesion of the gland being present, is therefore slight. On the other hand, lesions of the gland may be present, but not apparent to clinical observation. Statistics alone would show how frequently the mother's milk was contaminated in the various stages of tuberculosis. Statistics of actual determination of the presence of tuberculous bacilli in the milk alone would show the actual danger of infection.

The danger from other organisms, such as the septicemic group, being carried through the milk to the infant is possibly greater than in tuberculosis, without lesions of the gland; but, on the other hand, many of these organisms being taken into the alimentary tract fail to cause an infection.

In an acute infectious disease of the respiratory tract, as pneumonia, again the condition of the mother must be carefully guarded. Her energy must be conserved in her struggle against the toxemia. Doctor Ryder says, in answer to the question, Would you permit a patient with pneumonia or typhoid fever to continue nursing? that a patient with typhoid, even in a mild case, should not nurse. It is a long and uncertain disease and the patient needs all her strength to resist it. In a mild case of pneumonia she might nurse safely as the course is short. In severe cases the patient should not.

Doctor Painter would not allow a patient to nurse. He does not think that the infection can be carried through the milk. Doctor Cragin stops nursing at once. Doctor Brodhead, Doctor Strang, Doctor Ramsay, Doctor Lobenstine reply: No. Doctor Ward replies: No, not only because of the condition of the mother, but he thinks also that typhoid bacilli are to be found in the milk. In pneumonia, not during the acute stages, but after the crisis has occurred, if the general condition of the mother is satisfactory and the milk is still present. Doctor Knapp also replies: No, because of the mother's condition, and also in his cases he finds that the high temperature and insufficient diet affect the mother's milk and the babies do not do well. In typhoid the risk of handling the child is great. In very mild cases of pneumonia nursing might go on or be stopped only for a few days.

Syphilis in the mother is not, unfortunately, infrequent. Shall we permit the mother to nurse her baby, or is it a direct contraindication? The problem here seems to depend considerably upon the

time of infection. If it is prenatal, the chances are that the child is already infected. If the mother is under treatment the child also receives some medication, as we know that mercury is secreted through the breast (Lieb). If the infection is post partum, nursing must be discontinued at once. In these conditions it is of primary importance that the mother's child only be nursed.

Some men regard it wiser to discontinue nursing, both for the mother's and the child's sake, in all cases. Colles's law that a child born of a mother who is without obvious venereal symptoms, and which without being exposed to any infection subsequent to its birth, shows this disease when a few weeks old, this child will infect the most healthy nurse, whether she suckle it or merely handle it and dress it, and yet this child is never known to infect its own mother, even though she suckle while it has venereal ulcers of the lips and tongue, has been disproved and the theory of germinal infection has been disputed by Metzenour.

Osler says that in a majority of these cases the mother has received a protective inoculation without having had the actual manifestations of the disease. He concludes that there can be absolutely no syphilis in the child without syphilis in the mother.

Doctor Ryder, Doctor Dorman, Doctor Strang consider syphilis a direct contraindication. Doctor Lobenstine says that personally he prefers not to allow it, unless the child shows an unmistakable sign of syphilis and the mother is robust. Doctor Painter says that nursing is not contraindicated in ante partum cases. It is in post partum cases. Doctor Voorhees does not consider syphilis a contraindication. Doctor Brodhead thinks that it is not, unless it has been acquired post partum. The child may get valuable medication through the milk, e. g., salvarsan. Doctor Cragin says the syphilitic mother may nurse her own baby. Doctor Ramsay says he always feels safer in forbidding a syphilitic mother nursing the baby, as Colles's law occasionally slips. Doctor Ward believes that ante partum infections are not a contraindication, but post partum infections are.

Doctor Knapp is uncertain, but thinks that if the mother was infected after the beginning of the pregnancy, and the child did not show positive signs, he would not have the child nurse. If the mother was infected before impregnation, and the child showed positive signs, it is possibly as well for the child to nurse. Doctor Kilbane believes that the manifestations are not present in cases where the infection is ante partum because of this immunity which the mother receives. As the fetus grows, a considerably larger amount of the toxins is overcome by the mother, so that at the birth of the child a protective immunity is established. He thinks that it is safe for the mother to nurse when the infection is ante partum. When the infection is recent or post partum, nursing should not be allowed. The benefit derived from breast feeding in children of syphilitic mothers is probably due to the antitoxine secreted in the milk and not to the direct effect of the drugs themselves. Arsenic is thought to be secreted not at all or very slightly in the milk.

The question of this baby infecting a healthy wet nurse is one which must be carefully considered in each case. If there is any uncertainty regarding the child's condition, the wet nurse should have the benefit of that doubt. Some form of modified milk can be used in nearly every case.

Mothers suffering from anemias, primary or secondary, are generally compelled to discontinue nursing, both because of their physical condition and also because of the poor quality of their milk. In cardiac affections it is possible for the mother to nurse without suffering ill effects. In these patients the quality of the milk and the general condition of the mother and child must be carefully supervised.

Under the general heading of contagious diseases it is perhaps wise to consider two classes. First, the milder forms, as varicella, German measles, parotiditis, rubella. In the second class would come diphtheria, scarlatina, pertussis, and the more severe variola. The nursing baby is generally regarded as immune, possibly due to the passing of some antibody to the child, to the mother a passive immunity, as Schlossman says, produced by the protective qualities of the mother's blood. When, however, the mother herself is affected is there not grave danger of infecting the child? In the diseases of the first class the danger is not regarded as great.

We should remember that whooping cough kills more babies under one year of age than any other contagious disease (Webster), and that three quarters of the deaths from measles and nine tenths of those from whooping cough occur in infancy. This "passive" immunity for the nursing baby is regarded as offering protection for the first five months. If the mother and the child are both infected, then there is no need of making any changes, provided that the mother's milk still nourishes the child. In cases associated with pyrexia often the mother's milk becomes very poor or the secretion entirely ceases. It is generally agreed that in the diseases of the second class, when the mother alone is infected, nursing should be discontinued. Doctor Cragin says, in reply to the question Should all contagious diseases be a contraindication for nursing?—that in general, Yes.

Doctor Ryder replies: No, the mild contagious diseases are not, the severe ones are. Doctor Brodhead replies: No, in mild diphtheria, scarlet fever, measles, or chicken pox. Dr. Painter says: In general no, in scarlet fever and diphtheria yes. Doctor Voorhees thinks that mild cases are not contraindications. Doctor Strang says that in pertussis, where both the mother and child are infected, nursing is allowable; where the mother alone has it, he prefers bottle feeding or feeding child on mother's milk pumped out, so that the child is not brought in contact with the mother. He has seen this done without the child becoming infected. In varicella or German measles ordinarily, he should allow breast feeding, but he has never met with these conditions in a nursing mother. In measles or scarlatina he should not care to put a baby to the test of breast feeding however mild the mother's case. Doctor Ward says: No, it is perfectly per-

missible in those diseases where there are little or no constitutional symptoms as in chicken pox, German measles, mumps, etc.; even allowable in mild scarlet fever with a few symptoms and no constitutional depression after the first twenty-four to thirty-six hours, as in the local epidemic of last year, where the cases were very mild. In severe cases of scarlet fever nursing should be stopped for the mother's sake. In all contagious diseases the presumption is that the child is exposed to the infection before the mother's disturbance is fully developed and recognized. Doctor Ramsay and Doctor Dorman reply in the affirmative. Doctor Knapp thinks affirmatively in those cases which would be dangerous to the life of the child should it become infected, but not in such diseases as are not dangerous to the child if it be infected, as impetigo. As a matter of fact nursing babies rarely contract any of the contagious diseases from the mother, due to an antitoxine probably secreted in the milk.

There are conditions in which the mother's milk does not nourish the baby, even though she herself is well and strong. The mother grows stouter, even uncomfortably so, while the baby is dissatisfied. Upon examination the milk is found to be deficient in fats, being often under one per cent. In these cases we try to build up the mother's milk and often without success. The use of codliver oil, cream, eggs, and butter only makes the mother more uncomfortably fat. After a sufficient trial it is found necessary to feed the child artificially.

Doctor Holt advises artificial feeding also in those cases in which for two previous pregnancies the mother was unable to nurse. He thinks that the setback from bad nursing during the first few days may harm the baby permanently. We should remember that we have an absolute guide in the weight of the child before and after nursings. There are also conditions of malformation of the nipples, e. g., those of diversion so severe that in spite of the use of massage, breast pump, or shield, the baby is unable to nurse. A proper supervision of the case before the confinement would often prevent this.

Failures of development in the child, resulting in the deformities of hare lip and cleft palate, may make it impossible for the child to nurse. These fortunately are rare.

The subject of mental conditions in the mother demands important consideration. Doctor Ramsay replies to the question, "Would you permit a patient suffering from insanity in any form, epilepsy, or chronic alcoholism, to nurse her baby?" that he does not believe epilepsy is influenced by the nursing, though if the patient is on bromides the baby may suffer. Insanity and chronic alcoholism are contraindications. Doctor Voorhees, Doctor Dorman, Doctor Cragin, Doctor Painter, and Doctor Lobenstine reply no. Doctor Brodhead says no to insanity and alcoholism, yes to epilepsy, if the maternal condition was not made worse and the milk helped the baby. Doctor Knapp replies: No, if for no other reason than that the mother is not fit to take care of the baby. He might make an exception in the case of a mild epilepsy.

Doctor Ryder believes that this would depend largely on the general health of the mother, and whether or not the child could be protected against violence or accident from an insane or epileptic woman. As a rule these women should not nurse. Doctor Ward believes that the insane state may become exaggerated and the mother may do violence to the child. In epilepsy conditions are variable. Where the seizures are frequent or the patient is taking bromides, no. In cases where the seizures are infrequent nursing may be allowed under supervision provided that the patients do not become worse. Chronic alcoholism is no direct contraindication.

Doctor Strang replies that in puerperal insanity, so called, no. In some stages of chronic insanity, nursing might be allowable under certain conditions and supervision. In epilepsy, yes, in chronic alcoholism, no.

Doctor Smith, of the Manhattan State Hospital for the Insane, reports that at that institution the mothers are not allowed to nurse their babies at all. This is the general rule because they are unable to care for them afterward, many of the mothers not even realizing that they have given birth to a child, and also because it is not considered safe for the offspring. Epileptics are not allowed to nurse, although it is permitted outside.

In regard to alcohol, Doctor Holt says that it may appear in the milk, especially amyl alcohol (Klingemann), after being taken in considerable quantities by nurses, and may seriously affect the child. The ingestion by nurses of stale beer may be the cause of grave disturbance (Seibert).

In two cases of epilepsy which came under my care, because of the large amount of bromide required to control the seizures in the mother, the baby was seriously affected and nursing was discontinued in one. Neither the mother nor the baby seemed affected in the other at all unfavorably.

In insanity and alcoholism the prevalent opinion seems to be to prohibit nursing. In epilepsy under certain conditions it may be permitted.

The final question: "Is it permissible for a mother while pregnant to nurse?" received the following responses:

Doctor Ryder, yes, but for a very short time only, as the milk becomes poor or gives out entirely. Doctor Knapp believes that it is at times, but not in the majority of cases, as the strain upon the mother of nursing a baby and giving nourishment to a fetus is too severe. The mother's milk is small in amount and liable to disagree with the baby. He thinks that if the development of the nursing child is satisfactory he would stop the nursing gradually or he might wait until the cool weather if it were not too long. Doctor Strang says if a child who is nursing at the mother's breast is recovering from an acute illness, is digesting the mother's milk, and doing well, he should hesitate to allow the milk to dry up until it has shown ability to do well on the bottle feedings begun as supplementary. Doctor Brodhead believes that the milk is invariably poor and there is tendency to abortion. Doctor Ward replies yes to the third or fourth month of the succeeding pregnancy, provid-

ed the secretion of the milk continues good and that the child thrives upon it. This last condition often fails of fulfillment. Doctor Ramsay, Doctor Dorman, and Doctor Cragin say no. Doctor Vorhees says that it is done, but should not be: babies do not thrive when nursing from pregnant women. Doctor Painter replies no, anyway not after the third month. He does not believe that it tends to cause abortion. Doctor Lobenstine says, as a rule not.

Doctor Church, of Edinburgh, is opposed to allowing the mothers to continue nursing and refers to definite cases in which the suckling became a delicate child, suffering from severe affections of the nervous system, or was the mentally weakened one in the family. During lactation he declares that there is danger of expelling the embryo prematurely from the uterus, or if it reached full term it did so with weakened vitality and handicapped. The mother's health was undermined for a longer or shorter time. The effect upon the child was manifested by irritability, indigestion, colic, and diarrhea.

Dr. Abraham Jacobi, who takes up this subject in his section in the *Der Handbuch der Kinderkrankheiten*, to which he referred me, mentions as direct contraindications for nursing cases which are followed by persistent vomiting and acute indigestion in the child. Tuberculosis, syphilis, marked rachitis in the mothers, the acute infections following childbirth, epilepsy, and severe nervous diseases, chronic skin eruptions, and anemia, in which, however, the milk analysis and the nutrition of the child may act as a control. He refers to tables prepared by Vernois and Becqueral:

	Acute illnesses.	Chronic.
Density	Slightly increased	Slightly decreased
Fat	Increased	Decreased
Milk sugar	Much diminished	Normal
Proteids	Increased	Diminished
Salts	Increased	Diminished
Solids	Increased	Increased

Mothers who are exceedingly nervous, or who are subject to violent attacks of anger, often do harm when they nurse. He refers to cases in which nursings from angry mothers were followed by collapse in the child and in one instance by death. Excessive emotions of any character appear to change the consistence of the milk. He advises a wet nurse or artificial feeding for those children, as well as for those whose mothers are habitually unable to satisfy or nourish their offsprings.

Doctor Jacobi believes that pregnancy is a contraindication due to the inability of the mother to nourish two.

The period of menstruation may affect the baby unpleasantly and in some instances has been known to have a dangerous effect upon the nursing. In the great majority of cases this occurs infrequently and often the use of a prepared food, for a day or two, barley water alone or in combination with milk, will prevent any ill effect. The contraindications to maternal feedings herein discussed involve principles which would apply to related contraindications. Conclusions have not been drawn in all instances, as the subjects are debatable.

Again I wish to express my thanks to the gentlemen who from their larger experience have given me much valuable information.

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50 CENTRAL PARK WEST.

TREATMENT OF CHANCROIDS.

By R. M. TOLL, A. B., M. D.,
Scranton, Pa.

In treating chancroids, as in treating anything else, the object desired is a pleasant and speedy cure. The books on genitourinary diseases, though quite voluminous, do not deal satisfactorily with this particular part of their subject. Too many remedies are mentioned and their too frequent use is advised, and too much treatment is worse than no treatment at all. One author states that "a chancroid is best treated by a local hot bath two or three times daily, followed by a careful cleansing with an antiseptic solution." Such a procedure is neither practical nor convenient, even were it necessary—which it is not. But this is not all. Let us read further: "Absorbent cotton wet with some lotion may be held in place by a bandage. In this case the dressing should be moistened without removing it, every hour or two, to facilitate discharge." There may be some individuals with sufficient time on their hands to be treated in this manner, but the vast majority desire and require a much more simple method. Too frequent washing of the chancroid is neither desirable nor necessary.

Next we come to the dusting powders. Iodoform, formerly the standby, because of its odor is now passé. Some derivative of it has taken its place. All dusting powders should be passé in the treatment of chancroid. They mix with the secretion of the chancroid, producing in a short time a hard, caked mass, which prevents the formation of granulations and produces considerable pain and trauma in its removal. For similar reasons dressings, unless they can be kept constantly wet, which is almost impossible, are not advisable.

Now as regards caustics. Some contend that strong caustics are never advisable, others recommend their use when the ulcer has become of long standing and sluggish. The choice is fuming nitric acid. This caustic is rather too strong and is apt to destroy considerable tissue, bringing about an inflammatory reaction with the production of enough swelling and edema to cause a phimosis. The pain of caustics is entirely obviated by the previous application of a four per cent. solution of cocaine.

Lydston asserts for cocaine a healing value aside from its anesthetic property, in the treatment of chancroids. He rubs into the ulcer one quarter or one half grain tablet with a moist swab, and says that in a few minutes this transforms the ulcer into a vascular healthy surface exuding a bloody serum. But aside from this action, cocaine is of undoubted

value in the treatment of chancroids, if only for its anesthetic effect.

To review: If too frequent washing is impracticable; if dusting powders and dressings are conducive to damage; and if strong caustics are harmful—what then? After trying all the foregoing methods of treatment severally and together with constantly unsatisfactory results, the following very simple line of procedure was evolved: Wash the ulcer with a one to 1,000 bichloride solution and dry thoroughly with a cotton swab. Apply a drop of four per cent. cocaine solution. After a minute touch up the raw surface with pure phenol and follow in ten seconds with alcohol. That is all. No powders or dressings of any kind are required. Instruct the patient to return in three days. It is astonishing how much improved the ulcer will be. The raw area will be smaller and shallower and surrounded by sloping, healthy skin—giving it the appearance of a miniature crater at the top of a miniature volcano. Repeat the same treatment to the raw surface remaining, and continue so every three days until the ulcer is entirely healed. This will occur after five or six treatments, without leaving a sign of any previous infection at that spot.

312 MULBERRY STREET.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXII.—Under what circumstances do you find it advisable to prescribe the continuous use of alcohol? (Closed June 15th.)

CXXIV.—How do you treat streptococcic sore throat, in view of the possible sequelæ? (Answers due not later than July 15th.)

CXXV.—How do you treat gonorrheal "rheumatism"? (Answers due not later than August 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to Question CXXII was awarded to Dr. Lionel C. Charbonneau, of Brooklyn, New York, whose article appears below.

PRIZE QUESTION CXXII.

A FAMILY MEDICINE CABINET.

By LIONEL C. CHARBONNEAU, M. D.,
Brooklyn, New York

The family medicine cabinet, if not neglected, is a very necessary convenience in properly regulated families. It has been my custom for years to examine these cabinets. It requires constant inspec-

tion on the part of the family doctor to insure in the home a presentable medicine cabinet. Emergencies frequently arise, in sickness or accident, when doctors cannot be reached and drugstores are closed, where immediate action might save a life or lessen the severity of an impending sickness.

Advice and instruction is accurately given concerning the contents of each bottle, package, or instrument. Each bottle or package is carefully and distinctly labeled.

Place poisons in alphabetical order upon the top shelf. Maintain *order*, no matter what kind of a cabinet is in use. The label on each bottle or package should be large enough for directions, giving contents, uses, dose, and, at times, antidote. Bottles containing poisons, such as carbolic acid, iodine, gelsemium, tincture of aconite, should be in *one ounce* bottles with glass stoppers; the smallness of the bottle gives warning of danger. All other bottles should not contain less than four ounces. About the neck of these one ounce bottles a piece of red ribbon is securely fastened. This precaution should be strictly enforced. In my twenty-four years of experience I have had a mishap but once. It happened that the glass stopper belonging to the iodine bottle was broken and it was replaced with a cork. The bottle had not been used for two or three years, and naturally, at the end of these years, instead of a tincture a very powerful concentrated caustic iodine was applied to a "sore knee." A severe burn resulted, which required about two weeks' attention. When discharging the patient, I remarked: Use the same iodine on the other knee. The rejoinder was: "What, would'st thou have a serpent sting thee twice?"

The list follows:

1. Phoric acid, grs. xx.
Alcohol, 5ss.
Water, q. s., 5vij.
2. Tincture of aconite root, one ounce.
3. Tincture of gelsemium, one ounce.
4. Tincture of iodine, one ounce.
5. Oil of cloves, one ounce.
6. Carbolic acid, one ounce.
7. Alcohol, four ounces.
8. Castor oil four ounces.
9. Turpentine, four ounces.
10. Hydrogen peroxide, four ounces
11. Epsom salts, two ounces.
12. Mustard, two ounces.
13. Boric acid, two ounces.
14. Quinine pills (2 gr.), 100.
15. Calomel (triturate tablets (gr. 1, 10), 100
16. Medicine dropper.
17. Eye cup.
18. Two ice bags, one for the throat, one for general use.
19. One yard of solid rubber cord.
20. One yard, one to 2,000 bichloride gauze.
21. One yard sterile gauze.
22. Two two inch bandages, two three inch.
23. Five yards, one half inch adhesive plaster.
24. Absorbent cotton.
25. One soft rubber ear syringe.
26. One small pair of scissors.
27. One glass tongue depressor.

Of late years I forbid the use of the thermometer. Its disadvantages outweigh its usefulness, and it occasions a great deal of unnecessary worry and anxiety.

The key to the cabinet should be out of reach of children, but conveniently reached by adults familiar with the cabinet.

483 SECOND STREET.

Dr. H. B. Bryan, of Pittsburgh, writes:

In fitting up the family medicine cabinet, economy in the number of necessities should be the first consideration, selecting a sufficient variety to meet any and all emergencies with which a lay person would be expected to cope. It is presumed that the family consists of adults and children of different ages.

It will be well to look after the infant first, and proceed along age lines to the adults, and instruct the person in charge of the cabinet in the potential qualifications of its contents. Therefore, I shall make a few comments before giving a list of what I think should be in a family medicine cabinet.

All drugs and medicines should be labeled according to their contents by the pharmacist's label, and if poisonous with the antidote thereon, and before placing poisons in the cabinet, a coat button or other device should be tied around the container to draw attention. The contents should be handled carefully, and placed on the top shelf far from handy reach. All the ordinary liquid drugs should be placed together to suit the owner, but always in the same relative position.

The same will apply to oils, rubber appliances, bandages, plasters, absorbent cotton, or other dressings, etc.

Talcum powder for all, especially for "chafing" on infants and fat individuals.

Borax, in solution, as an adjunct in diphtheria, stomatitis, sore throat, sore mouth, pruritus ani et vulvæ, as an eye wash, on lint dipped in boiling water. Borax solution makes an inexpensive antiseptic dressing.

Sodium bicarbonate, moistened, quickly takes the pain out of superficial burns or scalds, relieves gastric fermentation and "sick headache."

Sweet spirits of nitre is a potent remedy for infants with nervous irritation, also for nervous excitement, and during fever in older children.

Paregoric contains but two grains of opium to the ounce, and in drop doses is not an "opiate." Although it contains opium, a few drops on baby's swollen gums give grateful relief. It is beneficial in summer diarrhea after flushing the bowels with castor oil.

Laudanum may be used to relieve toothache, or five drops of laudanum and five drops tincture of belladonna, heated and placed in the ear on cotton will give instant relief. Applied to painful hemorrhoids, either plain or mixed with lard or petrolatum, as well as for rectal tenesmus, is a very useful remedy.

Alcohol may be useful at any time, especially for rubbing purposes.

Aromatic spirit of ammonia is a quick stimulant for fainting spells, etc.

Whiskey, while not a medicine, is a powerful stimulant and on certain occasions a very valuable remedy.

Amyl nitrite pearls relax general or local muscular spasm, may abort an oncoming epileptic fit, subjugate the convulsions of strychnine poisoning or tetanus, relieve uterine spasm in dysmenorrhea, as well as cardiac failure from fright.

Powdered mustard may be used as an emetic or counterirritant.

Castor oil is for the use of the whole family.

Olive oil. Half olive oil and half glycerin—a teaspoonful injected into the rectum of an infant with a bulb syringe will relieve constipation without recourse to medicine.

Camphorated oil is useful for any or all congestive conditions of chest or lungs, especially in the infant.

Petrolatum is useful as a base to carry other medicine, or as a salve for burns, sunburn, chapped hands, etc., but especially useful in spasmodic croup. From a quarter to half teaspoonful by mouth will relieve the paroxysms.

Calomel, grain one tenth, sodium bicarbonate, grain one, is for use occasionally by the whole family or in doses to suit age.

Tincture of iodine is useful for all glandular or joint swellings, sprains, etc.

Liniment should always be in the cabinet, with soap, oil of turpentine, or chloroform.

Seidlitz powders will prevent a headache in the morning.

The following is a list of what I would place in the cabinet, a number of which I have not commented upon:

Talcum powder, powdered borax, sodium bicarbonate, sweet spirits of nitre, pargoric, laudanum, alcohol, whiskey, amyl nitrite pearls, powdered mustard in ordinary household box, castor oil, olive oil, camphorated oil, petrolatum, calomel, tincture of iodine, liniment, seidlitz powders, an ice cap, hot water bag, fountain syringe and fittings, baby rectal bulb syringe (may be used to wash the ears), lime water, hydrogen peroxide, graduated medicine glass, medicine dropper, absorbent cotton, cotton bandages, adhesive plaster, glycerin.

The foregoing articles would cost about seven dollars and a half, according to quotations of my nearest druggist.

(To be continued.)

Correspondence.

LETTER FROM EDINBURGH.

Edinburgh Doctors and the Insurance Act—The General Medical Council and Edinburgh Academy—Edinburgh Charities and the Feeble Minded—Lady Glencomer and Defective Children—Dinner to Dr. Byrom Bramwell—Memorial to the Late Professor Cunningham—Opening of a New Cancer Hospital in Glasgow—Care of Epileptics in Glasgow—Honor to a Glasgow Doctor—Mr. Carnegie at Aberdeen University—Consumption in Aberdeenshire.

EDINBURGH, June 26, 1912.

The attitude of Edinburgh doctors to the insurance act is as hostile as ever. The Scottish Medical Insurance Council has issued an appeal to every medical man in Scotland to be loyal to the medical committee of his insurance area, and to enter into no negotiations or arrangements with regard to contract practice of any kind without the approval of his local medical committee, who will decide what is to be regarded as adequate remuneration in the special circumstances of the insurance area.

In a recent issue of the *Scotsman*, one of the leading Scottish newspapers, published in Edinburgh, there appeared an interesting pair of adver-

tisements. The first occupied three and one half inches single column and was signed by the secretary of the National Health Insurance Commission (Scotland). It announced the early appointment of two whole time medical officers under the act, at annual salaries of £800 and £500 respectively, subject to pension and all the privileges of government employ, and solicited applications for these attractive posts. Beneath this announcement appeared a one inch advertisement, as follows:

Scottish Medical Insurance Council.—The members of the medical profession in Scotland are reminded that no one who seeks to be loyal to his brethren can take any paid post under the National Insurance Act until the demands of the profession, as represented by this Council, have been conceded by the commissioners.—W. Russell, M. D., chairman.

At a recent meeting of medical men in Edinburgh, attention was called to the fact that invitations were being privately sent to individual medical men, asking them to serve on a so called "advisory committee" of the Provisional Local Insurance Committee. It was pointed out that there is really no such body as an advisory committee of this sort, and that medical men must not be beguiled into joining a Provisional Local Insurance Committee masquerading under this specious title; while the public should be informed that this is a more or less clever attempt to obtain medical men to serve on the provisional local insurance committees and so to circumvent the embargo, under which medical men have voluntarily placed themselves, against joining these local insurance committees until the six minimum demands of the profession have been granted. The organization of the Edinburgh area is said to be perfect, all but three practitioners being under willing pledge to support the local medical committee.

At the concluding session of the General Medical Council in London on June 8th, the question of secondary schools as teaching institutions was considered, among the list of applications for approval being the Edinburgh Academy. Doctor Caton, of Liverpool, expressed himself as strongly opposed to the approval of these secondary schools for preliminary science teaching. He moved "that no further additions be made to the list of recognized teaching institutions until the council has had the experience of some years regarding the effect of the recognitions already granted." Sir Thomas Fraser, of Edinburgh, supported this motion, saying that the Edinburgh Academy could gain nothing by such recognition, its science teaching not being accepted by the University of Edinburgh. The motion, however, was rejected by a large majority.

The annual meeting of the Edinburgh Charity Organization Society was held on May 31st. The question of the feeble minded was raised, and Professor Lodge said that this lay at the bottom of sixty or seventy per cent. of the destitution and unemployment. Lord Salveson said that every effort should be made to get legislation which would enable them to take the care and control of those people who were not really responsible for the weaknesses and the vices in which they indulged. They ought to be segregated and cared for in

proper institutions by the State, and should not be allowed to multiply in the way they were encouraged to do.

On the same day as the foregoing meeting was held, Lady Glencomer, wife of the lord high commissioner, opened a new school for defective children, which consists of reconstructed property—three villas, with large gardens, practically an open air school. The southern frontage, which looks into the garden, can be thrown open by means of sliding partitions, fitted with glass, and along the front of the hail and rooms on the upper story runs a broad veranda. The garden is beautifully kept, and pupils during class hours look out upon grass and trees and flowers, and during the intervals they play in part of the grounds.

To signalize the completion of his term of office as physician to the Edinburgh Royal Infirmary, a number of Dr. Byrom Bramwell's friends entertained him at dinner in the hall of the Royal College of Physicians on May 17th. Sir William Turner, principal of the university, occupied the chair, and there was a large gathering of the profession. The chairman proposed Doctor Bramwell's health, and referred in felicitous terms to their guest's brilliant career. As a student, Bramwell had taken the medal in anatomy the first year of his (Sir William's) occupancy of that chair. Doctor Bramwell's numerous contributions to medicine were referred to, and the high professional ideals that had characterized his life, and which were testified to by his now occupying the presidential chair of the Royal College of Physicians.

A large company of ladies and gentlemen assembled in the anatomy room of Edinburgh University on May 22nd to witness the unveiling of a memorial medallion to the late Professor Cunningham, who, it will be remembered, was professor of anatomy in the university. The medallion is of bronze, and occupied a prominent position at the end of the large hall. It was presented by friends of the late professor in Edinburgh and Dublin; for Cunningham had taught anatomy in Dublin also. Professor Crum Brown handed over the memorial and Sir William Turner accepted it on behalf of the university. The same fund has provided a medal to be given in future to the best student of anatomy each year.

The Glasgow Royal Cancer Hospital was formally opened on May 30th by Her Royal Highness Princess Louise, Duchess of Argyll, in the presence of a brilliant and distinguished gathering. Doctor Gourlay presented the princess with a gold key as memento of the occasion. The Duke of Argyll, replying on behalf of the princess, referred to the work science was doing in connection with cancer. The new hospital represents the completed work of enlargement and reconstruction of a former building, and is an extensive three story structure. It has been built and equipped on the most approved scientific lines, can accommodate forty patients, and has a well appointed research department. It will rank as one of the best equipped institutions of its kind in the country.

On May 23rd the memorial stone was laid at Chryston, in Lanarkshire, of a new colony for Glasgow epileptics. This colony is the first of its kind

in Scotland undertaken by a parochial authority, and as such has created considerable interest. The site comprises a considerable extent of farm land in an open, healthy district, and has ample room for the erection not only of the buildings at present contemplated, but also for such further additions as may be necessary from time to time. Mr. James Cunningham, J. P., who laid the memorial stone, said that the patients as a rule would be those capable of doing something for themselves and not requiring active hospital treatment. Female inmates would do cleaning and laundry work, sewing, knitting, and such other labor as they were fitted for, and everything would be done to give the patients an active, interesting life.

The University of Glasgow is to confer the honorary degree of Doctor of Laws on Dr. Donald J. Mackintosh, M. V. O., M. B., medical superintendent of the Glasgow Western Infirmary. Doctor Mackintosh's work in connection with hospital management and organization is well known; he is the author of several books on this and allied subjects, and his work, *The Construction, Equipment, and Management of a General Hospital*, published in 1909, has earned a reputation for him as an authority.

Mr. Andrew Carnegie delivered his rectorial address to the students of Aberdeen University on June 6th; it dealt almost entirely with the sociological views of Mr. Carnegie and his followers, and referred to success in business, progress, the taxation of wealth, and kindred subjects. The students evidently were not much impressed; they sang and shouted and let off fireworks during its delivery, but this is characteristic of students during a rectorial address, and need not be taken as their opinion of its value.

Phthisis has for years been very prevalent in Aberdeenshire. In his report Dr. J. P. Watt, the county medical officer, states that of the total 1,479 deaths during the year, 101 were due to pulmonary phthisis and thirty to other forms of tuberculous disease. For phthisis the fall in the last quinquennium as compared with the first was 21.1 per cent., and for other tuberculous diseases 22.6 per cent. With regard to scarlet fever, the report states that the "Milne" treatment of rubbing the body of the patient with eucalyptus oil has been tried at Summerfield Hospital, and while it was the opinion that this treatment did not meet the requirements of the present day isolation hospital, Doctor Watt could bear testimony to its benefit in private practice, in so far as it prevented the spread of the disease in the household and lessened the time of isolation required. Beyond this he was not prepared to go.

Therapeutical Notes.

Treatment of Migraine.—Léopold-Lévi, in a paper read before the Société de thérapeutique, Paris (*Revue de thérapeutique médico-chirurgicale*, March 1, 1912), stated that he considered migraine to be due in many instances to disturbed function of the thyroid gland. Where the thyroid activity is deficient, the attacks appear at the time of the menses, in the presence of excessive thyroid func-

tion; on the other hand, they may occur at any time. A third, intermediate type, in which there is merely some perversion of the glandular secretion, partakes of the characteristics of both the others. In the first type mentioned, thyroïdin may be given in an initial dose of 0.1 gramme; in the second, 0.005 gramme, and in the third, 0.025 gramme. The treatment should be kept up for twelve to eighteen months. The author presents numerous corroborative cases in which migraine had been absent for two or three years as a result of thyroid treatment.

There is also an ovarian form of migraine. This should be treated with ovarin in doses of 0.2 gramme twice a day, or with corpus luteum in 0.1 gramme doses, but the results are not as striking as with thyroïdin. The latter will often lead to an unexpected recovery in cases where other drugs and correction of digestive disorders by a suitable diet have failed to bring relief.

Treatment of Joint Inflammations.—Hochhaus, in *Thérapie der Gegenwart* for January, 1912, reports having obtained good results by the application of extension in cases of acute or subacute arthritis which had resisted other measures. Of fifteen patients in whom extension was employed, ten were markedly benefited; in three more the results could be considered satisfactorily, while in the remaining two Bier's hyperemia proved more effective than extension. Most of the cases treated were of gonorrheal arthritis. Where pronounced swelling and tenderness had been present, diminution in size and lessened sensitiveness of the joint soon became apparent, a result ascribed by the author to removal of the articular surfaces from contact, as well as to the immobilization. Puncture of the joint was resorted to, in addition, in the cases with greatest exudation, and massage practised to prevent stiffness. The extension was not discontinued until the pain and swelling had abated sufficiently to allow of active and passive movements.

Treatment of Seasickness.—I. W. Brewer, of the Medical Reserve Corps, U. S. A., in the *Therapeutic Gazette* for June, 1912, declares that while almost every one who has suffered from seasickness has a sure cure for the affection, when the remedy is tried by others it generally fails. Many physicians who go to sea have concluded that there is no cure for the disease, and that the best that can be done is to keep the patient recumbent in the fresh air and endeavor to maintain proper nourishment. Encouraging results were obtained, however, by the author with veronal, in the course of a fourteen months' trip in Philippine waters. Though no severe storm was encountered, there were days when many persons were sick. In all twenty-two cases were treated with the drug named; 81.8 per cent. were relieved entirely, and the remainder not benefited. In most instances relief was experienced within thirty minutes and was permanent. Sometimes the patient was enabled to return to the saloon at the second sitting and eat a good meal. In several instances, after it had been demonstrated that the drug would give relief, it was used a second time as a prophylactic. At first the drug was given in doses of 7.5 grains (0.324 gramme), but later it was learned that doses of two grains (0.120

gramme) were equally effective. Unfavorable symptoms appeared in three cases. The first was that of a man who was given one gramme in three doses, covering a period of twelve hours, with relief from seasickness but ataxia the following day. A young woman who received 0.324 gramme in two doses at an interval of one hour, remained drowsy for two days. The third case was that of a neurasthenic woman, subject to fainting spells. She took 0.120 gramme, but vomited in a few minutes. A second dose of the same size was given at once, and in about an hour she fell from her chair. The pulse was weak and respiration shallow, but these symptoms were quickly relieved by 15 c. c. of aromatic spirit of ammonia. She had numbness in the arms, hands, and legs for several hours. Brewer concludes that the drug seems to hold a high place in the treatment of seasickness and will relieve cases not reached by other remedies; but it is not a safe drug to put in the hands of the public for use in this affection. The unfavorable results witnessed among his cases seemed to have been due to excessive doses.

Treatment of Hypertrophy of the Thymus.—Ribadeau Dumas, and Albert Weil, in *Bulletins et mémoires de la Société médicale des hôpitaux de Paris*, April 4, 1912, report a case illustrating the value of x ray treatment in this affection. The patient was two months old, and showed alarming paroxysms of dyspnea and cyanosis due to the pressure of the enlarged thymus on the respiratory passages. Operation being refused, mild exposures to the x rays on two successive days were employed, with the result that the paroxysms were so mitigated as to remove all danger of a fatal ending. Three weeks later a third x ray treatment was given, after which the suffocative attacks and stridor, which had been present since birth, completely disappeared. Shortly after, the child succumbed to measles acquired from another infant placed by mistake in the same ward. Autopsy revealed atrophy and sclerosis of the thymus. Comparison of the organ with x ray pictures taken at intervals during the life of the child made it seem probable that the atrophic changes in the thymus had been due to the rays, and that further treatment by this method, had the child lived, would have led to a permanent cure.

Treatment of Diarrhea in the Tuberculous.—Rénon, in *Nouveaux remèdes* for April 8, 1912, states that the first measure required in this condition is to institute a vegetable diet made up especially of pastes (macaroni and the like) and of purées. Kephir should be given as a beverage. Methylene blue should next be given:

℞ Methylthioninæ hydrochloridi,1.5 gramme;
Sacchari lactis,3.0 grammes.
M. et mitte in cachetas No. XV.
Sig.: Take three or four daily.

Or, the following may be administered (Ewald):

℞ Bismuthi subsalicylatis,3.0 grammes;
Betanaphtholis benzoatis,1.5 gramme;
Resorcinolis,5.0 grammes.

M. et mitte in cachetas No. X.
Sig.: Take one before each meal.

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OUR NINETY-FIFTH VOLUME.

We concluded with our issue for June 29th the ninety-fifth volume of the NEW YORK MEDICAL JOURNAL, a striking event in the history of medical journalism in the United States, and a noteworthy accomplishment from the editorial and publishing viewpoint. Below we give a short summary of features in this volume, likely perhaps to pass the reader from week to week without attracting due attention, but remarkable in many ways when grouped.

Number of pages of text	1,438
Number of columns	2,890
Abstracts from contemporary literature	1,015
Original communications	273
Therapeutical notes	105
Illustrations	300

To the collection and publication of this immense mass of indispensable scientific knowledge, and of foreign correspondence, letters to the editor, many hundreds of news items, miscellany, medico-literary notes, and the excellent department of medical law, sixty-six editorial writers and 339 authors contributed. As was to be expected, not an important feature of recent medical discovery or comment was overlooked, and among contributions to professional equipment original with us, we take pride in recalling our ad-

mirable presentation of a revolutionary and effective treatment of spinal curvature, a paper corroborative of which appears in this issue. The publishers are to be especially thanked for their far seeing liberality in providing means artistic and mechanical for the adequate presentation of these and other important papers.

Our plans for the future are on a large scale. We solicit intelligent and interested criticism from our readers, in whose behalf the work is done, and invite their attention to the current volume, opening with this issue, as worthy of their sustained interest and increasing confidence.

DOCTOR JACOBI AND INFANT MORTALITY.

In his masterly presidential address before the American Medical Association, published in our issue for June 8th (page 1177), Dr. Abraham Jacobi forcibly described the many causes to which the prevailing high mortality among infants should be ascribed and the best means of combating it. No greater service could be rendered humanity to-day than to awaken an active, militant movement in our profession on behalf of the multitudes of babies which die of preventable causes; no voice more authoritative among our great pediatricists could, with more certainty, call such a movement into being. It is with due solemnity, and not in a jocular vein, therefore, that those whose province it is to decide whether a newborn infant is to be breast fed or not should accept the intimation embodied in what might be termed Doctor Jacobi's verdict of responsibility—duly qualified by what he accepts as explanations, though not as excuses—that “every case of death from lack of breast milk should cause a trial for homicide against a doctor or midwife or mother.” To the prevailing notion that many women cannot nurse their offspring, he answers that “one hundred per cent. of our women can be made to nurse, even the flower and fashion of the land.”¹

Lost in a measure in the array of facts, discussions, and propositions the address contains is a process which has so far failed to receive the attention it deserves. So important do we deem it in the problem of infant salvation that we have added evidence herein to that borrowed from Doctor Jacobi's text. Briefly summarized, this process is that through which the *maternal milk protects the nursing against disease*—a fact which in itself throws upon those who advocate artificial feeding, which affords no such protection, the responsibility for the infant's death where the maternal milk would have prevented it.

¹See *Maternal Nursing*, by W. Morgan Hartshorn, M.D., page 20, for a fuller statement of Doctor Jacobi's views.

It had long been known that infants below one year were but slightly susceptible to certain infectious diseases, when Ehrlich and Brieger, in 1892, demonstrated that certain toxic substances, ricin, abrin, and tetanus toxine, injected into mice, endowed the milk of these animals with the power of protecting the offspring of other (unprotected) mice against the action of these poisons. In 1896, Schmid and Pflanz, having injected blood serum derived from a parturient woman who had received injections of antitoxine into guineapigs, found these animals immune to fatal doses of diphtheria toxine. In 1905, la Torre, having administered diphtheria antitoxine to wetnurses, ascertained that the blood of their nurslings possessed increased antitoxic power.

These and many other experimental data available, fully warrant, therefore, Doctor Jacobi's statement that the mother, when infected with scarlatina or measles "will, at least for the time she is nursing her baby, protect the latter against those infections." They explain, moreover, the fact recorded by Prinzing, that while intestinal disease killed 7.09 per cent. of breast fed infants in Berlin during 1895 and 1896, those artificially fed gave a mortality of 38.6 per cent., other diseases showing an equally suggestive ratio; bronchitis and pneumonia from 5.6 to 39.6 for example.

It is not only the diseased woman who protects her infant against disease through her milk, but the normal woman likewise. How does her milk acquire its protective virtues? This is due to a feature to which Doctor Jacobi's address does not refer, but upon which we have laid stress in these columns, viz., the state of overactivity of the ductless glands, particularly the thyroid and adrenals, in the maternal organism, and the direct participation of their internal secretions in all immunizing functions. The nursing woman can thus be assimilated to one under the influence of a febrile infection in so far as her nursing is concerned.

Hence it is that while in French cities the death rate among breast fed foundlings (many of which inherit disease) is from thirty-two to thirty-five per cent. (Bertillon), that of artificially fed infants of the same class is from fifty to eighty per cent. Striking examples of the same order are available in other directions. In New York city, for example, the mortality among foundlings, three decades ago, was almost 100 per cent. until wetnurses were provided (J. Lewis Smith). Again, as Doctor Jacobi states, during the siege of Paris, while the general mortality was doubled, that of infants was lowered twenty-six per cent. because mothers, through the lack of cow's milk, were driven to nurse their babies. During the famine of 1860, in our cotton

districts, the deficiency of food also forced the women to nurse their infants. The mortality among the latter was reduced one half.

These few facts suffice to show the vast importance of the question reopened by Doctor Jacobi. We do not expect, for some time at least, to see physicians, midwives, or even society women undergo capital punishment or life imprisonment for baby slaughter, but we do hope that the profession as a whole will realize its moral responsibility, and use its powerful influence to arrest so wanton a sacrifice. Pediatricists should take up the good work of their Nestor, and obstetricians follow suit.

A REPORT ON UNCINARIASIS.

In recent years the question of the economic and social importance of uncinariasis has aroused keen interest and practical efforts at control. Among agencies operating to combat the disease, perhaps none is doing more valuable work than the Rockefeller Sanitary Commission, its second annual report¹ presenting an interesting review of the activities of the scourge.

The work in each State is directed toward determining the distribution and degree of infection, toward treating persons infected, and toward removing the cause of infection by putting a stop to soil pollution. The sanitary survey of this country shows a heavy infection in North Carolina, Georgia, South Carolina, Louisiana, Mississippi, Tennessee, Alabama, Virginia, Arkansas, and a light infection in Texas, Kentucky, Florida, California, Nevada, West Virginia, Oklahoma, and probably in Maryland. When this survey was begun two years ago, the discovery of heavy infections had a discouraging influence on the people, but now the reverse is true. Communities with a heavy infection will be the first to throw it off, and will lead in a general sanitary campaign against typhoid, amebic dysentery, and other enteric diseases.

The survey of foreign countries is very complete. It shows that hookworm infection belts the globe in a zone sixty-six degrees wide, with the equator near its centre. Practically every country in this belt is infected, and it is estimated that 940,000,000 people live in districts where the disease is prevalent. The most heavily infected countries are India, where sixty to eighty per cent. of the population of 300,000,000 are infected; the Guianas; Egypt; Natal; Ceylon; and the Malay States.

The economic loss from uncinariasis is appalling. Dr. Herbert Gunn, special inspector for the California State Board of Health, reporting on hook-

¹Second Annual Report, Rockefeller Sanitary Commission. Eradication of Hookworm Disease, 1911.

worm infection in the mines of that State, points out that the general efficiency of the miners is noticeably impaired; a twenty per cent. loss of efficiency he considers a conservative estimate. Placing the degree of infection as low as fifty per cent. among the miners, a mine employing 300 men would lose over \$20,000.00 a year. It is hard to realize, therefore, the enormous economic loss in India.

The retarding effect of uncinariasis on education, civilization, and social progress is well illustrated by many of the mountain whites of the South. One family record shows four generations of illiteracy due to the disabling effects of hookworm disease. It is an insidious and preeminently chronic affection, and its results are handed down with cumulative increase from father to children. It has been a serious handicap in all that makes for civilization in India, China, and Egypt, as well as in sections of our own country.

In this country immigration has much to do in favoring the spread of the disease. Coolie laborers from India carry with them a heavy infection. A shipload of Indian coolies at San Francisco last year showed an infection of about ninety per cent., and the health authorities established a quarantine against further immigration of this type. The infection is spreading in California to-day from every group of Hindu laborers. At the Ellis Island immigrant hospital, Manning² found forty per cent. of unselected cases infected with intestinal worms, and four per cent. showed a hookworm infection.

The Rockefeller Sanitary Commission is doing invaluable work along practical lines. Two years ago the people knew nothing about the disease, and the seriousness of its presence was not realized. For two years a systematic campaign of education has been pursued. The people have been taught by public lectures with charts and lantern slides, by bulletins and folders, by the public press, by exhibits at State and county fairs, by the examination of students in schools and colleges, and by the celebration of Public Health Day. The most effective means of all has been the teaching of the people by demonstration through the treatment of large numbers at the county dispensaries.

It is evident that uncinariasis is a disease of national and international menace. What has happened in Egypt, China, and India is to be feared in the United States. Only persistent and energetic measures will suffice. The eradication of this disease is one of the most important features of the general sanitary campaign now gaining headway throughout the country.

A LIST OF ETHICAL PROPRIETARY REMEDIES FOR THE USE OF GERMAN PHYSICIANS.

The German Congress of Internal Medicine recently appointed a commission to prepare a report on the drugs used in Germany. The commission has made three lists: 1. A positive list of drugs whose chemical composition corresponds with the statement made by the manufacturer; 2, a negative list of drugs whose chemical composition does not entirely correspond with the statement of the manufacturer; 3, a dubious list of drugs whose chemical composition apparently does not correspond with the statement of the manufacturer. As is well known, Germany rivals America in the production of medicinal chemicals which are advertised in the medical as well as the lay press. The governments of the several States constituting the Empire keep a close watch on such remedies and their advertisements, and in case of fraudulent statements warns the public against the use of the drug and also gives the reason for the warning. The list prepared by the commission of the German Congress of Internal Medicine seems to be based upon a similar investigation. In the negative list we find 261 drugs and thirteen prepared foods. The dubious list contains 145 drugs, nine sera, vaccines, and ferments, sixty prepared foods, eight mineral waters, etc.

A STUDY OF MORPHINISM.

Wholey, in the *Journal of the American Medical Association* for June 15, 1912, notes the difference between the alcoholic and the morphinist. While the average person can take alcohol in ordinary doses for long periods and still maintain his independence, no one may do this with morphine. The morphinist rapidly acquires a tolerance for the drug, due to the fact that the nerve cell has become exhausted from continued reaction and the accumulation of waste products, and for this reason calls for a continued increase in dose. A phase of drug habit is the relationship of alcoholism to morphinism. It has been stated that delirium tremens is sometimes caused by the use of morphine. Hallucinations and delusions may result from the use of morphine, but they do not resemble in all points the alcoholic delirium. A history of alcoholism is usually found when a typical delirium tremens develops.

The effect of morphine is different in the sexes. The incubation period may be similar, but the women quickly outstrip the men in the amount of drug used. In both sexes there is a reduction of libido; amorousness subsides and in many instances is altogether lost. Impotence and sterility accompany this sexual indifference. A noticeable feature in women is that shortly after withdrawal of the drug there is a rather tumultuous return of sexual feel-

¹Prevalence of Intestinal Parasites among Immigrants. H. M. Manning. *Medical Record*, September 30, 1911.

ing. There is frequently cessation of menstruation, and mammary atrophy takes place, with a return to normal when the drug is discontinued. If a woman taking morphine in large amounts bears a child, it is apt to be seriously dependent on the immediate continuance of the drug. A peculiar psychic condition exists in the morphinist, an amnesia similar to that seen in certain alcoholics. This clouding of the consciousness continues, sometimes for weeks, after the discontinuance of the drug. The cramp or pain experienced upon withdrawal is more severe and persists longer in the legs, probably because they are subject to most use. It is often the long lasting withdrawal symptoms, and not a craving for the drug, that bring about relapses.

THE PLAGUE SITUATION.

The plague seems to be on its march to Europe. The last reports from Egypt give 116 cases with thirty-seven deaths, while from Bushir, Persia, the report is 513 cases and 394 deaths, and in the Ural district of Russia, seven cases with six deaths. As to Porto Rico the *Public Health Reports* for June 28th announce that examinations of rats indicate that a mile of the water front of San Juan is infected. The hope is expressed that it will be possible to limit the infection to the island of the old city. The worst houses in the infected area are being destroyed after having been first surrounded by wire fence. Observation and detention camps have been provided, and a systematic destruction of rats is being carried on. Up to June 25th the report mentions three deaths as having occurred in the suburbs of San Juan.

"RUBBER ITSELF."

The *Lancet* for June 22, 1912, in discussing the alleged discovery or invention of a substitute for rubber, points out that rubber is chemically a polymer of $C_{10}H_{16}$, and that isoprene, a light hydrocarbon oil, is obtained by the destructive distillation of rubber, but clearly must be obtained otherwise if it is itself to be the source of an economical production of synthetic rubber. The most economical source seems to be amyl alcohol or fusel oil, itself obtained by a special fermentation of sugar made from starch. It is probable, concludes the *Lancet*, that what is actually being recorded is a synthetic triumph of the greatest moment to the world, for it is not a rubber substitute that has been made, but rubber itself.

Medical Law.

VIII. CIVIL MALPRACTICE.

A verdict of \$2,000 against a physician was sustained by the Supreme Court of Nebraska, in the case of *Mosslander v. Armstrong*, 134 Northwest-ern Rep. 922.

In this case the plaintiff had stepped upon an ordinary sewing needle in the carpet in his bedroom, puncturing his foot. At the time of the accident, plaintiff searched the floor for the needle, and found

that it had been broken into probably three pieces, two of which constituting the major portion of the needle, were found; the remainder consisting of the point was not found. The next morning plaintiff called at defendant's office, when defendant made an incision into the foot in search of the needle point, but none was found. The foot became infected. Two other incisions were made in the effort to arrest and cure the blood poisoning, but unsuccessfully, when other physicians were called and it was found necessary to amputate the great toe.

The chief contention upon the trial arose over the question of care and skill in the use of proper antiseptics in the surgical treatment of the foot. A nurse was permitted upon the trial to state that she was familiar with the standard of technique used in the hospitals where she was employed, and among physicians and surgeons in that vicinity, and that according to that standard, before the performance of an operation the instruments are thoroughly sterilized, and the dressings are thoroughly sterilized, and the patient is prepared for several days prior to a major operation; that some weeks before plaintiff's accident, she had a conversation with defendant, in which they discussed surgery generally and he gave his idea of sepsis, and stated that certain well known and leading surgeons in Illinois and Minnesota played to the galleries, and that he could "go out into the country and take a bar of white Russian soap and prepare a patient for an operation in ten minutes, and get the same results that those surgeons could in their weeks of preparation"; and that defendant's opinion of technique was not up to the standard of other physicians in the community where he resided and practised, but was below them.

The Supreme Court held that it was not objectionable for the witness to give her definition of "technique" as she showed knowledge of the subject, and her testimony in this regard corresponded with that of the physicians who testified upon the subject, but that it was improper for her to compare defendant's views and his standard of technique with those of other physicians.

There was testimony introduced in the case to the effect that to make an incision in the foot so soon after plaintiff had stepped upon and punctured his foot with the needle, was not skillful or necessary treatment; while plaintiff testified that he had not asked for, nor had he given his permission to make the incision. As to the law applicable to this evidence, the trial court gave the jury the following instructions:

The defendant had no right to make any other or different incision in the foot of the plaintiff, than defendant had obtained permission or plaintiff had requested him to make. . . . Consent to an operation will be presumed from voluntary submission to it, and the burden is on plaintiff to prove the contrary.

Mr. Justice Barnes, in commenting on this feature of the case, said:

These two instructions, when taken together, state the law correctly. The consent is a necessary prerequisite to an operation, where no emergency exists rendering it impracticable to confer with the patient. . . . But that consent will be presumed, in the absence of fraud or misrepresentation.

In passing upon defendant's argument that the

verdict of \$2,000 should be set aside as excessive, the justice said:

If defendant was negligent (and of that the jury were the judges) and if plaintiff was guilty of no contributory negligence (and of that the jury were the judges under the evidence), and his sufferings and present and past conditions are attributable to the negligence of the defendant (and of which the jury were the judges), the verdict, while probably somewhat liberal, cannot be said to be so far in excess of compensation as to require the interference of the court.

News Items.

Civil Service Examinations.—Among the positions for which the New York State Civil Service Commission will hold examinations on July 27th are the following: Pathologist (forestry), \$1,500; sanitary engineering inspector, State Department of Health, \$1,200 to \$1,500; medical interne, \$1,000 and maintenance, physicians only.

Honorary Degrees.—At the recent commencement of Harvard University the degree of master of arts was conferred upon Surgeon General Charles F. Stokes, United States Navy, and the degree of doctor of science upon Dr. Frederick Forchheimer and Dr. Frederick Cheever Shattuck. Among the recipients of the degree of doctor of laws from the University of Pennsylvania, at the recent annual commencement were Dr. Louis A. Duhring, professor emeritus of dermatology, and Dr. James Tyson, professor emeritus of medicine at the university.

Moving Picture Tuberculosis Exhibitions.—For a number of years stereopticon tuberculosis exhibitions have been given in the public parks of New York by the Department of Health. Last year the tuberculosis committee of the Charity Organization Society assisted in the work by furnishing a lecturer for some of these exhibitions. These lectures did not prove to be worth while, however, and this year moving pictures are being used instead. The exhibitions begin at 8 p. m. The first one was held on the evening of June 21st, in Mount Morris Park, and they will be continued throughout the months of July and August.

Changes at Syracuse University Medical School.—This institution has added the following men to its corps of instruction: As assistant professor of bacteriology, Leverett Duke Bristol, A.B., M.D., Johns Hopkins, of St. Paul, Minn.; as instructor in the department of histology, Earl V. Sweet, A.B., M.D., Cornell, of Phenix, N. Y.; as instructor in surgery, Albert G. Swift, M.D., Syracuse, of New York; as instructor in pathology, John W. Cox, M.D., of Syracuse. This position was secured by scholarship. At the suggestion of the dean, Colgate University has signified its intention of permitting students to take the senior year in a registered medical college *in absentia*, such students to receive the bachelor's degree upon the presentation of a certificate from the college of medicine attended, to the effect that his work has been done satisfactorily.

Materia Medica in Illinois.—The following resolution was adopted by the Illinois State Board of Health at their meeting, held in Chicago, June 29, 1912:

WHEREAS, Materia Medica, "that branch of medical science which treats of the substances used in medicines, their origin, composition, physical characteristics, chemical properties, modes of preparation and administration, physiological and toxicological actions," to quote from a leading authority on the subject, "constitutes one of the sound fundamentals of a medical education, and,

WHEREAS, A lack of demonstrable knowledge, on the part of a physician, of this essential branch of medicine, indicates a medical education insufficient for the practice of medicine and surgery in all their branches, and,

WHEREAS, In the opinion of the Illinois State Board of Health, it is necessary that an adequate test by examination be exacted of the applicant for medical license in Illinois, in the subject of practice of medicine, particularly in that phase of practice relating to applied therapeutics on the treatment of disease, and,

WHEREAS, Certain examining and licensing boards, with some of which the Illinois State Board of Health now sustains reciprocal relations, fail to exact an examination in either one or both of the above mentioned subjects, therefore,

Resolved, That after this date, the Illinois State Board of Health will require candidates from other States, seeking license through reciprocity, to pass an examination in the subject of materia medica or practice, or both, with an examination in such subject of subjects, has not been exacted of the candidate by the board of the State from which he comes.

Medical Reciprocity.—It is announced by the president of the Pennsylvania State Board of Medical Licensure that an agreement has been reached by that board and the State Board of Medical Examiners of New Jersey whereby graduates from medical schools of recognized high standing, who pass the examinations in either State and receive licenses, may practise medicine in both States, subject to certain limitations.

Canadian Edition of Dr. S. A. Knopf's Essay on Tuberculosis.—The new seventh edition of Dr. S. A. Knopf's International Prize Essay, *Tuberculosis as a Disease of the Masses and How to Combat It*, has just been translated into French by Dr. Eugene Grenier, of the Bruchesi Tuberculosis Institute of Montreal. The proceeds of the sale of this book will be for the benefit of the institute. The first translation of a former edition into French appeared some years ago in Paris. Doctor Grenier's new French translation represents the twenty-eighth foreign edition which, with the seven American, makes thirty-five editions in twenty-four languages which have appeared within the last ten years. They are the American (7), Arabic, Bohemian, Brazilian, Bulgarian, Canadian, Chinese (2), Dutch, English, Finnish, French, German, Hebrew, Hindu, Hungarian, Icelandic, Italian (2), Japanese, Mexican, Norwegian, Polish, Russian (2), Serbian, Spanish, Swedish, and Turkish. Since the book was written mainly for the education of the laity, this unusually large circulation speaks well for the worldwide interest of the masses in tuberculosis, for whose benefit the Berlin International Tuberculosis Congress offered and awarded the prize. Doctor Grenier's translation is published by the Imprimerie Billaudeau, Limitée, 71 rue des Commissaires, Montreal, and sold at the same price as the American edition, twenty-five cents a copy.

Personal.—Dr. Eugene L. Opie, professor of pathology at Washington University, St. Louis, has been appointed dean of the medical department, to succeed Dr. George Dock, who resigned recently.

Dr. D. S. Fairchild, of Clinton, Iowa, has been elected editor of the official journal of the Iowa State Medical Society, and Dr. J. W. Osborn, of Des Moines, and Dr. A. C. Boyce, of Washington, are associate editors.

Dr. John Homans and Dr. David Cheever have been appointed surgeons to the new Peter Bent Brigham Hospital, Boston.

A banquet in honor of Dr. J. A. Witherspoon, president elect of the American Medical Association; was given under the auspices of the Nashville Academy of Medicine and the Nashville Board of Trade, on July 3d.

Dr. F. Creighton Wellman, director of the department of tropical medicine of Tulane University, has taken charge of the summer school courses in hygiene and preventive medicine at the University of California, in Berkeley. He will return to New Orleans early in September to supervise the equipment of the new laboratory of hygiene, which will be known as the Stanford E. Chaille Laboratory of Hygiene, in memory of the late dean and professor of hygiene in Tulane University.

Dr. J. C. Geiger, of Alexandria, La., has been appointed State bacteriologist of California, on the recommendation of Dr. F. Creighton Wellman.

The Franklin Institute of Philadelphia has awarded the Edward Longstreth Medal of Merit and a diploma to Dr. Charles Baskerville, professor of chemistry and director of the laboratory at the College of the City of New York, for his investigations on the chemistry of anesthetics (ethyl chloride, ether, chloroform, nitrous oxide and oxygen).

Mr. Jerome D. Greene, general manager of the Rockefeller Institute for Medical Research, has resigned that position to enter the office of Mr. John D. Rockefeller, where he will be a member of the staff in charge of Mr. Rockefeller's commercial and philanthropic interests. Mr. Greene will continue his connection with the Rockefeller Institute for Medical Research as a trustee. As general manager, Mr. Henry James, Jr., of Cambridge, Mass., has been appointed to succeed Mr. Greene. Mr. James is a graduate of Harvard College in the class of 1899, and of the Harvard Law School in 1901; he has since been engaged in the practice of law in Boston. He is a son of the late Professor William James, and has been identified in Boston with many enterprises of public and philanthropic nature. He is counsel for the Bar Association, and will begin his service at the Rockefeller Institute in the autumn.

Pith of Progressive Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

June 20, 1912.

1. WALTER E. FERNALD: Annual Discourse: Burden of Feeble-mindedness.
2. MICHAEL M. DAVIS, JR.: Efficiency Tests of Out Patient Work.
3. JOHN B. HAWES, JR.: Is Early Diagnosis of Pulmonary Tuberculosis Being Carried Too Far?
4. THOMAS ORBWAY: "Library Museum" in Medicine.
5. ROBERT M. GREEN: Dickens's Doctors.
6. LOUIS M. FREEDMAN: Two New Instruments for Nose and Throat.
7. JOHN H. CUNNINGHAM, JR.: Two Cases Reinfected with Syphilis Following Treatment by Salvarsan.

2. **Efficiency Tests of Out Patient Work.**—Davis avers that the efficiency of an out patient clinic depends on five factors: 1. The skill and training of the physicians and surgeons; 2, the quality and extent of the medical and surgical equipment rooms, instruments, laboratories, supplies, etc.; 3, the administrative organization of the institution as a whole; 4, the provision of trained assistants, clerks, nurses, and social workers for the clinics, and the proper organization of this staff; 5, the extent to which the institution deals with the social problem of patients' lives, which run alongside their physical condition and powerfully affect the continuity and practicability of adequate medical treatment. The first and second conditions are taken for granted. As for the third, it may be asked to what extent the rules, fees, and general routine of the institution are adapted to the patients as human beings as well as to administrative convenience. Little attention has been paid to the fourth and fifth conditions. Social service departments have been established at some institutions and are beginning to be considered as more than fads and frills. The following steps in the development of efficiency tests are suggested: 1. A study of larger groups of patients with a view to fuller knowledge of the social classes coming for out patient service and their relative proportions; this study can be made largely at the admission desk; 2, the study of special groups in particular clinics, with a view to working out efficiency tests for the guidance of physicians and the improvement of clinical methods; 3, the different methods of follow up work, including clinical methods, clerical systems, and social service; the types of patients to whom the various methods may best be applied and the relative proportion of these types; 4, methods of social diagnosis; analysis of the chief social diagnoses found in out patient work and of the medical and social problems usually involved in each; 5, the cost of clinical and follow up work; the basis on which cost should and can practically be reckoned, in order to estimate relative economy and efficiency.

3. **Is Early Diagnosis of Pulmonary Tuberculosis Carried Too Far?**—Hawes, in reply to the objections that have been raised to the diagnosis of tuberculosis before tubercle bacilli can be demonstrated in the sputum, says that very few nontuberculous patients are admitted to sanatoria; that there is no evidence that anything but good is done by admitting such patients; that the "stigma" of tuberculosis is more a fiction than a fact; that homes are not wrecked by sending away the breadwinner who has suspicious symptoms, but that pathetic tragedies are daily enacted because of over-

conservatism and unwillingness on the part of the physician to make a definite diagnosis and to institute efficient treatment; and that while the diagnosis of suspected tuberculosis is proper and right in many instances, it should be regarded as temporary or provisional, and the patient should be followed up until the diagnosis can be definitely made one way or the other, while the patient is given proper treatment and has the exact situation clearly explained to him.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

June 22, 1912.

1. CHARLES J. WHITE: Shortcomings of Dermatology.
2. JOSEPH COLLINS and ROBERT G. ARMOUR: Treatment of Syphilitic Diseases of Nervous System by Salvarsan.
3. DAVID J. LEVY: Simple Methods of Infant Feeding.
4. M. L. HARRIS: Adhesions of Colon.
5. GEORGE B. SOMERS: Uterovaginal Prolapse in Elderly Women. Technique of Operation.
6. CAPPS, MILLER, and DAVIS: Sore Throat and Milk Supply.
7. H. G. WETHERILL: Incomplete Abdominal Surgery.
8. PEYTON ROUS and JAMES B. MURPHY: Nature of Filterable Agent Causing Sarcoma of Fowl.
9. WILLIAM J. MANNING: Continuous Sterilization of Instruments, together with Aseptic Hypodermic Medication.
10. GOUVERNEUR H. BOYER: Cheap and Portable Apparatus for Forming Carbon Dioxide Pencils.
11. WILLIAM J. ANDERSON: Catheter Knotted in Bladder.
12. J. E. KNIGHT: Ten Pellagris in One Family.
13. PHILIP A. SHEREAF: Simple and Precise Method of Differential Leucocyte Counting Where White Cells are Greatly Increased.

2. **Treatment of Syphilitic Diseases of the Nervous System by Salvarsan.**—Collins and Armour report their experiments in the use of salvarsan in diseases of the nervous system that originate from syphilis, i. e., tabes, general paresis, endarteritis, and meningitis. They conclude that mercury and salvarsan are best used side by side, one being supplementary to the other. The therapeutic potentialities of salvarsan have not yet been fully shown; it has not replaced mercury. They feel convinced, however, that the treatment of diseases of the nervous system that follow in the wake of syphilis is far more satisfactory with salvarsan than with mercury.

3. **Simple Methods in Infant Feeding.**—Levy emphasizes in this paper milk dilutions instead of percentage formulas, and long feeding intervals, five feedings in twenty-four hours, four hours apart. He advises the use of mixed carbohydrates; the addition of ten grammes of flour and the occasional use of oatmeal water as a diluent; maltose dextrin as sugar. He limits the total quantity of milk mixture to one litre (one quart) *per diem*, and uses broths, fruits, and vegetables from the sixth month on.

4. **Adhesions of the Colon.**—Harris's paper was abstracted in the JOURNAL for June 8, 1912, p. 1220.

6. **Sore Throat and Milk Supply.**—Discussion of papers by Doctor Capps, Doctor Miller, and Doctor Davis. Abstracted in the JOURNAL for June 8, 1912, p. 1225.

7. **Incomplete Abdominal Surgery.**—This paper by Wetherill was abstracted in the JOURNAL for June 8, 1912, p. 1221.

MEDICAL RECORD.

June 22, 1912.

1. M. B. HARTZELL: Epidemic of Erytheloma (Molluscum) C. n. (Molluscum); New Observations Concerning the "Molluscum Bodies."
2. FRANZ TOREK: Surgical Treatment of Oblique Inguinal Hernia.
3. HAROLD HAYS: Transplantation of Rib for Depressed Deformity of Nose.
4. LEONARD W. ELY: Bone Syphilis Masquerading as Tuberculosis.
5. SARAH J. MCNUTT: Nonoperative Treatment of Sterility.

6. WILLIAM NABES: Chest Index in Pulmonary Tuberculosis.
 7. H. GRAND KIER: Surgery on Pediatric Standpoint.
 8. OSCAR WILKINSON: Dry Necrosis of the Mastoid Cells.

1. **An Epidemic of Epithelioma (Molluscum) Contagiosum; the "Molluscum Bodies."**—Hartzell records that *Molluscum*, or better *Epithelioma contagiosum*, according to the statistics of the American Dermatological Association, comprises a little more than one sixth of one per cent. of all diseases of the skin in England and America, and records the appearance of twenty-one cases under his care during 1910, practically all from an institution for young men in which it was found that five per cent. of the entire student body had the disease. Some interesting and unusual features were noticed. The eruption was confined mostly to the covered parts of the body—the trunk, especially the posterior surface, and upon the arms, the hands, face, and lower extremities remaining uninvaded. The number of lesions was in most cases large. In a few instances the little tumors assumed a linear arrangement, the inoculation having originated in a scratch. They were unusually small, the largest about the size of a split pea. Itching was a prominent symptom, evidences of which were many small excoriations and blood crusts when the tops of the lesions had been removed by scratching. Some of the lesions resembled acne papules so closely as to mislead in diagnosis. The contagion was conveyed by the common bath towels used in the gymnasium. In the area occupied by the molluscum bodies three quite distinct varieties of cells were observed. In treatment, many local applications were tried, the most efficient being one or two drachms of formaldehyde solution to the pint of water, but as it commonly induced a dermatitis, its use was suspended, and pure carbolic acid was applied on a pointed toothpick, boring into the central opening of each tumor. The tumor became inflamed and then soon disappeared.

2. **Study and Surgical Treatment of Oblique Inguinal Hernia.**—Torek remarks that the operations for inguinal hernia would apparently indicate a disregarded anatomical factor. In all these cases the hernia forces its way out between the vas deferens and the vessels of the cord, so that at the internal ring the vessels lie above the sac and the vas deferens below. Farther forward the vas and the vessels are found united, forming the cord; at the internal ring, however, they lie apart, and the sac, or a portion of it, lies between them. In their intraabdominal course the vessels descend from above, while the vas ascends from below, and normally they unite at the internal ring to form the cord. This union persists when there is no hernia and also in direct hernia, but in oblique hernia the condition mentioned above exists. Since the vas and the vessels of the cord, before they are joined, lie in planes which meet at an angle at the internal ring, they are readily wedged apart. A loop of intestine or a piece of omentum by repeated pressure against the internal ring easily wedges itself between the vas and vessels, which by reason of the angle at which they meet, renders more effective the downward progress of any smooth, pliable tissue forced against that spot. The persistence of this relative position of vas and vessels after a hernia operation may cause a recurrence. The author

endeavors to do away with the wedge, by not bringing these structures out together, but leaving them separate, or even separating them a little further, before the deep row of sutures, that uniting the internal oblique and transversalis muscles with Poupart's ligament, is placed. The vessels are thus made to come out at the highest possible point, while the vas emerges, most naturally, at a point two cm. or more below the vessels, so that at least three stitches, a centimetre apart, will separate these structures. The remaining sutures are placed below the vas deferens down to the pubes. The writer uses the same incision as made in Bassini's operation. In suturing the muscles to Poupart's ligament, a No. 26 silver wire is used, twisted about four half turns, cut off, leaving an end about one eighth to three sixteenths inch long, which is bent by forceps to the medial side, so as to lie on the muscle, then being bent a second time, imbedding the point of the wire in the muscle.

3. **Transplantation of Rib for Depressed Deformity of the Nose.**—Hays, in using the rib, employs a homogeneous tissue, taken from the same person, and nourished by the same blood. In the case reported with illustrations he dissected out the ninth rib on the right side, taking about two and a half inches from the sternal end, stripping back from both sides the periosteum, as the latter was unnecessary for use. After removal the rib was split down its entire length and only the outer shell used, the medullary tissue being scraped out and the ends slightly rounded off. An incision was made through the periosteum of the frontal bone and a dissection made between it and the bone for about a half inch. The rib was then inserted down to the tip of the nose and the upper end slipped in between the periosteum of the frontal bone and the bone itself.

BRITISH MEDICAL JOURNAL.

June 15, 1912.

1. JOHN BYERS: Evolution of Obstetric Medicine.
2. J. D. MALCOLM: Wertheim's Operation for Cancer of Cervix.
3. L. A. PARRY: Fracture of Lower End of Humerus in Child. Wired.
4. G. E. RENNIE: Endothelioma of Pituitary Gland with Infantism.
5. WILLIAM EWART: Appendicitis Dilemma.
6. G. MANN: New Methods for Culture of Bacteria.
7. E. A. COOPER: Bactericidal Action of Cresols.

2. **Wertheim's Operation.**—Malcolm describes this operation in detail and presents the statistics of a very considerable number of patients operated upon in this manner. In the early cases of cervical cancer the mortality has been between about four to 6.5 per cent.; in moderately advanced cases, about ten per cent.; and in the advanced over twenty per cent. The prospects for even temporary relief in the advanced cases are so slight as to render an operation of so high a mortality as this quite unjustifiable. The corollary from this is that we must educate the patients in the matter of irregularities of the menstrual function so as to get a larger proportion of those in whom cancer develops in the early stages when the disease can be removed, as described, with a low mortality and with a considerable chance of permanent eradication. Wertheim's operation is a decided advance over the previous methods.

4. **Endothelioma of the Pituitary.**—Rennie reports the history and the post mortem findings in a

case of endothelioma of the pituitary in a boy of seventeen years, who presented the usual symptoms of a tumor; headache, vomiting, high arterial tension, and polyuria, the last two being ascribable to pituitary hypersecretion. The gland was completely replaced by the neoplastic tissue. There was definite infantilism, but this was not accompanied by adiposity, in fact the patient was very thin. A further peculiarity of the symptoms of this case was the presence of delayed growth and infantilism, instead of acromegaly, in the face of the definite symptoms of hyperpituitarism, at least at the beginning when the hyperactivity of the gland was obvious.

6. Culture of Bacteria.—Mann began with the idea that the several tissues of the body possess their own specific salt content as well as their specific protein content, and has elaborated a means of obtaining sterile fluid extracts of either the specific salts or these plus the specific nucleoproteids from any organ or tissue. This method consists briefly in autolysis under conditions of sterility, extraction with chloroform, and displacement of the chloroform by dry heated air. By the use of these preparations in culturing bacteria one gets a better and more accurate idea of the behavior of the organism in relation to any organ or to its salts, nucleoproteids, or the cytoplasmic radicals such as the amino acids. The use of these preparations is also of value in the studies on natural and acquired immunity by the comparison of the action of the extracts of adult with those of embryonic tissues. Likewise it opens up a field for the study of the specific actions of certain of the viruses such as the action of that of hydrophobia on the nervous system.

7. Bactericidal Action of the Cresols.—Cooper concludes the report of his studies in this paper with a comparison of the germicidal powers and cost of the coal-tar disinfectants based on their carbolic coefficients. He takes into consideration the cost of all of the ingredients which go to prepare a suitable emulsion for use in each case, and the costs are therefore the total costs of the preparations in a state for immediate use. From this comparison he draws the following conclusions: 1. It is more economical to use the resin soap preparations of crude carbolic acid than those containing soft soap, and the latter rather than the castor oil soap preparations. The first mentioned class has the disadvantage, however, of forming milky dilutions with water, while the dilutions of the soft soap preparations are nearly clear. 2. For the disinfection of staphylococcus in the absence of organic matter, of typhoid stools, and of pus, it is cheaper to use soft soap emulsion of crude carbolic acid than the crude mixture of tar acids. 3. It is more economical to use the phenols of higher boiling point for disinfection in the absence of organic matter than the cresols. This advantage increases with the boiling points of the tar acids. There is no such advantage in the presence of feces; in fact here it is usually better and cheaper to use the cresols. 4. Thymol preparations are more costly than crude carbolic acid, emulsified with soft soap, especially in the presence of organic matter. Regarding the toxicity of these several preparations there is some evidence showing that the higher tar acids are less poisonous

than the cresols and phenol. The dangers in the use of the higher tar acids are further reduced by their greater germicidal power, rendering them effective in lesser concentrations. He ends his paper with several receipts for the cheap extemporaneous preparation of several of the cresol, tar acid, and phenol disinfectant emulsions.

LANCET.

June 15, 1912.

1. PERCY KIDD: Some Most Points in Pathology and Clinical History of Pneumonia (*Lecture I*).
2. L. S. DUDGEON: Pathology of Immunity (*Lecture I*).
3. NORMAN MOORE: Presence and Intensity of Syphilis, Past and Present.
4. C. WALLACE: Abdominal Drainage in Treatment of Peritonitis.
5. J. E. LANE: Syphilis d'Emblée.
6. W. G. SPENCER: Bilateral Nephrotomy and Drainage for Acute Nephritis.
7. MONA D. ROBERTS: Titanic Spasms in Chronic Ulceration of Leg.
8. J. OLIVER: Accessory Uterus Distended with Menstrual Blood.

1. Pathology and Clinical History of Pneumonia.—Kidd discusses the etiology of the disease and the results of experimental inoculation of the organism into various lower animals, and expresses the opinion that man is possessed of great powers of resistance to the pneumococcus. This in part accounts for the localization of the disease so frequently in the lung in contrast to the usual occurrence of pneumococcus septichemia which is so constant a result in the experimental animals. He is inclined to the belief in a hematogenous origin of the disease rather than to the aerogenic theory. This is supported by the early date at which the diplococci may be found in the blood and by the clinical evidence that pneumonia so frequently appears for some days under the guise of some general infection without local manifestations. The termination of the disease by crisis is difficult of explanation and is closely connected with the process of immunity development. Animal experimentation has shown that the introduction of antibodies is without avail unless a definite quantitative ratio exists between them and the toxins; this ratio is very high. In mice it is necessary that the antibodies be introduced into the blood stream in a concentration of one to 100, i. e., 0.2 c. c. to a mouse of twenty grammes weight. Smaller doses are not only not curative, but seem to exert no effect at all. This peculiar condition which requires the antibodies to rise to a given high degree of concentration before any effect is produced, suggests that this is the cause and mechanism of the phenomenon of crisis.

2. Pathology of Immunity.—Dudgeon's paper is too detailed to be successfully abstracted in serial parts, hence we will delay its presentation until the entire series of lectures has appeared.

4. Abdominal Drainage.—Wallace is strongly opposed to the use of drainage of the abdomen in peritonitis, save in those cases in which there is a distinctly limited abscess. In the first place it is impossible thus to remove any considerable amount of fluid on account of the many folds and pockets, and, second, any drainage tube or material, no matter how nonirritant, will in a very few hours stimulate the development of adhesions in its immediate vicinity. Last, it has been shown in the vast majority of instances that the fluid is either harmless in itself or even decidedly protective. The question then arises as to whether there is any use in

operating for the relief of peritonitis. Other than the removal of the original source of the infection, such as the appendix, Wallace is of the opinion that there is really little to be gained by operation. He is also a skeptic as to the value of the so called adjuvant measures, chiefly the use of purgatives and infusions. The poison is not in the lumen of the bowel and is not removed by purgation. Infusions are of use only in allaying thirst, and do not wash the poison out by way of the kidneys, nor do they dilute the irritant peritoneal fluid by exudation into the peritoneal cavity as has been suggested. The value of the Fowler position is deemed small by Wallace, who remarks that, "for some people the whole conception of the treatment of peritonitis seems to be based on the assumption that the spread of peritonitis is due to the gravitation of foul fluid; no account is taken of the spread of infection in any other way." If all goes well there will be no fluid to drain into the pelvis, even if it was harmful; if the infection gets the upper hand it will not matter much whether the fluid drains.

AUSTRALASIAN MEDICAL GAZETTE.

May 11, 1912.

1. J. A. G. HAMILTON: Uterus Didelphys.
2. A. A. LENDON: Perforation of Uterus with Hegar's Dilators.
3. W. A. VERNON: Ovarian Pregnancy.
4. A. A. LENDON: Ovarian Pregnancy.
5. MARIAN THORNET: Plea for Early Treatment of Squint.
6. L. M. MCKILLOP: Appendicitis and Enteric Fever Coincidentally.

LYON MÉDICAL.

May 5, 1912.

1. FEUILLADE: Indications for Isolation Cure.
2. LOUIS GALLAVARDIN: Roger's Disease with Cyanosis, Due to Opening Connecting the Ventricles of Heart and to Fibroid Phthisis.
3. J. P. MORAY: Uremia and Anamniocemia.
4. JACQUEAU: Acute Meningitis Closely Following Enucleation of Eye for Posttraumatic Phlegmonous Inflammation.
5. L. BÉRIEL: Nonsuppurative Encephalitis.

June 2, 1912.

1. Indications for the Isolation Cure.—

Feuillade considers that patients with mild cases of neurasthenia should remain in bed, completely isolated for ten days, in the more severe cases for two to six weeks. Rest in bed in rooms specially disposed for the exclusion of noise, as with double walls and doors, will cause disappearance of insomnia, headache, and lumbar pains, and will regularize the functions of the digestive tract. Psychasthenics sensitive to the least noise, or becoming dizzy upon the least exertion, are also benefited by isolation, but only temporarily. In certain hysterical patients isolation may likewise be ordered for a time. Partial isolation is indicated in all those who are ill by reason of overwork and need a period of rest from the stress of life or one of separation from irritating family influences. During the period of excessive nervousness in Graves's disease, as well as in chronic cardiac, renal, or diabetic patients with altered disposition or excessive sensitiveness, and whose family surroundings are not such as conduce to mental quiet, partial isolation is also to be recommended. In persons really disordered mentally, however, the isolation cure generally fails. Feuillade has given up the home treatment of neurasthenics, both because of obstacles on the part of the patient and family and the impossibility

of securing, in the private home, the services of properly trained attendants.

4. Meningitis after Enucleation of an Eye.—

Jacqueau calls attention to the fact that the propriety of enucleating an eye in the presence of panophthalmitis, which has given rise to much discussion, is not yet accepted by all authorities. He reports the case of a man into whose right eye a piece of iron had penetrated, with the result that on the sixth day a pronounced phlegmonous inflammation developed. Enucleation under general anesthesia was practised without delay and the cavity carefully cleansed with hydrogen peroxide. The tissues of the orbit appeared uninvolved at the time of operation, and dissection of the enucleated eye showed that the foreign body had not penetrated the posterior portion of the sclerotic coat, but had remained within the eyeball. Nevertheless, on the following day, signs of beginning meningitis suddenly appeared. Fever, delirium, rigidity of the neck, and unconsciousness were observed in succession, and the patient died on the third day. It might be questioned whether the meningitis would not have appeared in this case without the performance of enucleation, but the fact that meningitis followed so quickly and suddenly suggests a relationship, the injury to the optic nerve having probably opened the way for infection of the meninges through the lymphatic channels. In spite of the unfortunate result in this case, enucleation must not be lost sight of as the most effective means we have of promptly putting an end to all accidents resulting from panophthalmitis. Jacqueau has already enucleated many eyes in a phlegmonous state without witnessing the least untoward result. He now recommends, however, that enucleation be practised before panophthalmitis has developed in cases where its subsequent appearance seems certain; on the other hand, where the phlegmonous process is already fully developed, enucleation should be refused. Where this operation is performed, speed and perfect asepsis are essential; diphtheria antitoxine may be simultaneously administered for prophylactic purposes. Where enucleation is not practised, Jacqueau advocates "igneous exenteration" of the eyeball, as originally described by de Lapersonne. After a crucial incision is made, a heavy thermocautery, at white heat, is passed into the ocular cavity several times. The entire contents of the eye, including pus, clots, and fragments of membrane, are thus systematically destroyed. Pain quickly disappears, recovery takes place in about two weeks—more rapidly than after any other conservative procedure—and the stump remains movable and is suited for the installation of a glass eye.

PARIS MÉDICAL

June 15, 1912.

1. P. DESCOMES and GUY DE LALAUBIE: Endohepatic Biliary P s SAGES.
2. DESCHAMPS: Psychomotor Relations of Confidence and Sym Pathy.
3. VIELLE: Arlathnot Lane's Staphylotherapy.

2. Confidence and Sympathy.—

Deschamps lays stress upon the value of establishing these feelings in the patient, and thus helping to produce "the faith that cures." The faculty of inspiring confidence can be cultivated and is especially precious in conveying suggestion to the neuropathic patient.

PRESSE MÉDICALE.

June 12, 1912.

1. LEÓN BERNARD and BARON: Prognostic Value of Cutaneous Reaction to Tuberculin in the Adult.

June 18, 1912.

2. MAURICE CHEVASSU: Urea in Blood and Urine in Surgical Cases.
3. R. BURNIER: Fats in Dermatological Practice.

2. **Estimation of Urea in Surgical Cases.**—Chevassu points out the necessity of this estimation before operating, and shows the importance of it in prognosis.

3. **Fats in Dermatology.**—Burnier contends that the excipient in an ointment is not a matter of indifference. Lard, he believes, should be used oftener than it has been since the appearance of petrolatum and wool fat. When benzoinated, it sometimes irritates tender skins; prepared with a little salt and alum it is unobjectionable, if fresh. Lanolin should not be used in inflamed dermatoses. It mixes admirably with petrolatum. Petrolatum is not really a fat, but a mixture of heavy oils and paraffins. It is not absorbed by the skin and should be used only in superficial lesions. The light yellow variety is the best. Other bases are beef marrow, whale oil, and codliver oil, which is excellent in certain irritating conditions and may be modified as to odor by the addition of a little peppermint or tar. Proprietary bases like adiptine, aleptine, resorbine, molline, and diadermine, have their uses and may sometimes be prescribed alone. Cacao butter is useful to give firmness to certain ointments. Burnier distinguishes a pomade, containing only a medicament and a grease, from a paste which contains also an inert powder. Glycerites are mixtures of glycerin and vegetable starch; creams result from mixing water or lime water with a fat, and usually some scent; cerates are based on wax mixed with water or oil. What is known as *colle* (glue) in France is a mixture of gelatin, zinc oxide, and water or glycerin. This is mixed while hot and is sold in platelets like glue. It is softened before use in a *bain-marie*, and when applied to the skin acts as a protective somewhat after the manner of collodion. The author warns against the indiscriminate use of zinc oxide ointment, which is not always harmless; a paste is often much better, in not checking perspiration, for example.

SEMAINE MÉDICALE.

June 10, 1912.

1. HENRI ISCOVESCO: Hydrosyntaxis and Hydrophilism; Etiology of Edema, Phlegmasia Alba, Obesity, etc.

Hydrosyntaxis.—Iscovesco gives this name to the physicochemical phenomenon of swelling of membranes, protoplasm, etc., by the penetration of water drawn into them. Hydrophilism is the property of colloids to attract and hold water. Hydrosyntaxis is essentially different from imbibition, a purely physical process, and hydration, which is purely chemical. Edema cannot be produced by mechanical means alone, i. e., by simply tying a vein, but if an infected point is present edema will quickly occur. The same is true of the injection of saline solution. The edema produced in subjects with pneumonia by the injection of saline solution is therefore a danger sign. Patients have been killed by surgeons throwing in saline solution without rhyme or reason, where infection still persisted.

Edema will not take place unless there are present certain acids or urea or acetonetic bodies, or else there is a lack of other substances, e. g., glycogen. Obesity is a more complex problem than has been supposed and is due mainly to hydrosyntaxis; this is notably true in those children whose fat will not diminish no matter how they are exercised and dieted.

MEDIZINISCHE KLINIK.

May 12, 1912.

1. ALOIS PICK: Arteriosclerosis and Disturbances of Digestion.
2. H. DIETERMANN: Climatotherapeutics in Diseases of Heart and Vessels.
3. PAUL JOTTKOWITZ: Fractures.
4. NEUHANN: Eusmin as Local Anesthetic.
5. KOBER: Dangerous Type of Erythema Nodosum.
6. HUGO TISCHLER: Safety of Bromural.
7. HUGO HESCH and OTTO LEUBNER: Wassermann's Syphilis Reaction with Active Sera.
8. ARTHUR ALEXANDER: "Improved Wassermann Reaction."
9. ERNST BARTH: Otology, Acute Otitis Media, Chronic Otitis Media Catarrhalis.
10. L. KUTTNER: Nervous Vomiting.
11. GROEDALL: Balneotherapeutics in Chronic Diseases of Heart and Vessels.
12. B. RENDIX: Symptomatology and Etiology of Barlow's Disease.
13. MAX JERUSALEM: Sanatorium Treatment in Surgical Tuberculosis.
14. O. BEUNS: Importance of "Respiration under Low Pressure" in Treatment of Disturbances of Circulation.
15. SEIBEL: Diabetic Coma in Acute Infectious Diseases.
16. RASCHOFKY: Treatment of Acute Diseases of Rectum.
17. E. LAMPÉ and H. KLOSE: Molyform.
18. W. WANGERT: Conducting Plant Organisms in Water Pollution.
19. ROBERT BING: Treatment of Apoplexy.

1. **Arteriosclerosis and Disturbances of Digestion.**—Pick, in speaking of disturbances of digestion and arteriosclerosis, remarks that diuretin acts as a specific remedy against abdominal pains, in such cases; from two to three grammes are to be given daily. Tincture of strophanthus, in doses of four or five to eight drops, given twice or three times daily, has also had good results. Furthermore, the use of iodine preparations is also recommended. In short, all remedies which have produced good effects in sclerosis of the coronary arteries of the heart should also be valuable in sclerosis of abdominal vessels.

4. **Eusemin as a Local Anesthetic.**—Neuhann favors as local anesthetic a preparation called eusemin, which contains in one c. c. physiological salt solution, 0.0075 cocaine hydrochloride and 0.00005 adrenalin hydrochloride. The solution is pasteurized in autoclaves and can be bought in ampoules containing one or two c.c. The toxicity of the preparation is very small, as it contains only 0.75 per cent. cocaine, and as the addition of adrenalin diminishes and delays the absorption of cocaine through contraction of the vessels.

8. **"Improved Wassermann Reaction."**—Alexander is of the opinion that the Wassermann reaction as proposed by Kromayer and Trinchese is an improvement.

10. **Nervous Vomiting.**—Kuttner describes as nervous vomiting such action of the stomach as is not necessitated by organic disturbances. He speaks of the diagnosis and the etiology, and also of cerebral vomiting, vomiting from anemia and malaria, of toxic vomiting, and of reflex vomiting. He considers also the vomiting in infants, adolescents, and adults. As to therapeutics he says that the field is too large to treat it in detail. He mentions in light cases of nervous vomiting the use of anesthetics, cocaine, menthol, chloroform, bromide and valerian preparations. In the reflex vomiting from

the esophagus he advises painting with five per cent. cocaine solution or introducing food through a tube. He further mentions hydrochloric acid in hypochlorhydria or in hyperchlorhydria alkalies; in motor insufficiency, the stomach pump; in obstipation, vegetable food, purgatives, etc. He also speaks of hydrotherapy, electricity, and raying of the abdomen with blue or red light. Vomiting in tabes is very hard to control; he refers to several remedies which are given, but without success; the only reliable treatment consists in hypodermic injections of morphine, sometimes combined with atropine; he does not believe, in such cases, in the use of high frequency currents. Nervous vomiting in infants can be controlled with cocaine (one milligramme); some substitute novocaine for cocaine; others give buttermilk, while some advise mainly food consisting of gruel. In children the quality as well as the quantity of the food should be under exact control; if necessary, children should be taken from home and treated in a sanatorium. Iron, arsenic, or lecithin preparations may also be useful.

13. Sanatorium Treatment in Surgical Tuberculosis.—Jerusalem remarks that rational treatment of surgical tuberculosis can be successful only in special sanatoria, which may be situated on the seashore, on mountains of greater or less altitude. Especially adapted for heliotherapeutics is a location protected from the north, looking toward the south, in an atmosphere free from smoke and dust and above the fog region.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT.

May 9, 1912.

1. ROBERT BING: Localization of Diseases of Cerebellum (*To be concluded*).
2. P. JÖDICK: Status Epilepticus.
3. FRITZ MUNK: Antigens to Wassermann Reaction, Addition to Biology of Lipids.
4. J. BAUER and F. WÜSTHOFF: Anaphylactic Intoxication through Organic Extracts.
5. R. HILGERMANN and J. LOSSEN: Demonstration of Tubercle Bacilli in Blood during Phthisis, and Prognostic Importance.
6. STUERTZ: Experimental Contribution to Movement of Diaphragm after One Sided Cutting of Phrenic.
7. L. SALVABA: Presence of Crobinil and Bilirubin in Human Serum.
8. K. A. FRIES: Apparatus for Artificial Breathing.
9. TH. ALBRECHT: Immunization against Hay Fever.
10. L. STANOWSKI: Increased Use of Water in Diets.
11. THOMAS JONNESCO: General Rhachidian Anesthesia.

May 16, 1912.

12. W. BRÜNNING: Diagnosis and Treatment of Foreign Bodies in Air Passages.
13. G. ARNHEIM: Simplified Method for Culture of *Spirochata pallida* from Human Material.
14. JULIUS CITRON: Increase of Resistance to Tuberculosis According to Our Present State of Immunization.
15. KRÖNIG and GAUS: Röntgen Ray Treatment of Myomata.
16. ROBERT BING: Localization of Diseases of Cerebellum (*Concluded*).
17. E. IMPENS: Pharmacological Items on Luminal or Phenylethylbarbituric Acid.
18. S. JÖRNE: Clinical Experiences with Luminal.
19. CARL SCHINDLER: Technique and Effect of Intramuscular Injection of Joha.
20. LUDWIG MEYER: Salvarsan in Paralysis.
21. NOBTE: Small Apparatus for Salvarsan Infusion.
22. W. FEILCHENFELD: Ocular Disturbances from Observation of Solar Eclipse.
23. R. MUTHSM: Appendicular Inflammation in Situs Inversus Totalis.
24. BERGER and M. SCHWARZ: Surgery of Vessels.

3. Antigens to Wassermann Reaction, an Addition to the Biology of the Lipoids.—Munk remarks that all alcoholic extracts, from the syphilitic liver as well as from the normal organ, and even from potatoes (animal and botanical lipoids), give nearly the same results with the Wassermann reaction. There does not exist a difference between the organic extracts, and there are, therefore, no chemically characteristic lipoids for the Wasser-

mann reaction. But while the chemical character of these substances does not play a rôle in the Wassermann reaction the colloidal condition of these substances is a condition *sine qua non* in the reaction. This fact allows us to draw the conclusion that molecular physical processes take place during the Wassermann reaction with specific antigens which represent the second stage of the reaction for which the antigen must be prepared through action of the antibodies of the serum. This is the so called *phase d'impression* of Bordet. Of all aqueous extracts, from normal as well as pathologically changed organs, only the latter give a Wassermann reaction with syphilitic serum which contains spirochetes, *Spirochata pallida* in the extract of a syphilitic liver or *Spirochata recurrentes* from the extract of livers of mice suffering from recurrent fever. Munk concludes, therefore, that we may be permitted to think that the action of syphilitic immunization in the organism is based upon molecular physical changes in the body sera.

4. Anaphylactic Intoxication through Organic Extracts.—Bauer and Wüsthoff made animal experiments from which they found that extracts from organs of guineapigs with a physiological salt solution have the same effect as anaphylatoxine produced from antibodies, antigen, and complement. The extracts kill guineapigs under the same characteristic conditions as antiphylactic toxine.

5. Demonstration of Tubercle Bacilli in the Blood during Phthisis and Its Prognostic Importance.—Hilgermann and Lossen found tubercle bacilli in the blood *in vivo* in twenty-five per cent. of the tuberculous patients whom they examined, not only in the incipient stage, but also in the advanced. An elevation of temperature could not be demonstrated under these conditions, but the prognosis seems to be worse in those patients in whose blood the tubercle bacilli circulate, although they were able to observe such patients for a couple of years, some even with slight improvement. But the inconsistency of the examination in positive tuberculosis and the difficult and prolonged technique are not favorable to introducing this method of examination as a help to diagnosis.

11. General Rhachidian Anesthesia.—Jonnesco repeats his statement that rhachidian anesthesia is to be used not only in cases in which inhalation anesthesia is contraindicated, but also in all other cases on account of its simplicity and freedom from harmful effects. He is sure that this method will become the anesthesia of the future.

12. Diagnosis and Treatment of Foreign Bodies in Air Passages.—Brünnings bases his article upon his textbook on direct laryngoscopy, bronchoscopy, and esophagoscopy, of which an English translation by Howarth appeared in 1912. The author gives in this article a description of his electroscope for bronchoscopy, a bronchoelectroscope, a universal electroscope, forceps, etc. The article will be of interest mainly to the specialist.

17 and 18. Luminal or Phenylethylbarbituric Acid.—Impens reports on a new narcotic which has been introduced by Fischer and von Mering into the therapeutics, and has the following chemical formula: $2(C_8H_8) = 3CO = 2NH = C$. It is called luminal and is very slightly soluble in

water—about one per cent., but forms, on account of its acid character, salts which are easily soluble in water. Impens speaks of his many animal experiments and comes to the conclusion that luminal gives better results than veronal.—Loewe gives a clinical report on luminal. He remarks that it is a good sedative and hypnotic in all forms of excitability of the insane, as well as in oversensitiveness and sleep disturbances of degenerates and neurasthenics. It also produces good effects in bodily pain and in delirious patients. A great advantage is that, compared with veronal, the doses are smaller. Physiological sleep will be produced in normal persons by a dose of 0.2 gramme which may be increased to 0.4 gramme, while in patients as described above 0.6 or 0.8 might become necessary. Therefore, 0.2 gramme luminal corresponds to about 0.5 veronal. Luminal is given by mouth in small tablets which, if necessary, may be dissolved in a drink in the form of luminal sodium. Luminal sodium may also be used subcutaneously.

ZENTRALBLATT FÜR CHIRURGIE.

June 8, 1912.

1. VON HACKER: Operative Closure of Fistulæ of Stomach and Intestines.
2. E. SCHIEPELMANN: Ligation Forceps.
3. SCHULZE: Simple Contrivance for Securing Proper Position of Patient in Operations on Gallbladder.

June 15, 1912.

4. SPRENGEL: Easy Introduction of Sutures in Transverse Abdominal Incision.
5. K. KOLB: After Treatment of Resection of Knee Joint with Use of Screw Splint Apparatus.
6. F. HOELSCHER: Operation for Perforated Ulcer of Stomach and Duodenum.

1. **Closure of Fistulæ.**—Von Hacker freshened the surface of the fistula from the skin to the mucous membrane, introduced two loops of silver wire so as to enclose the fistula, one from the right side, the other from the left, and closed the ends of the fistula with silk. The result is said to have been good.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

May, 1912.

1. J. T. FOTHERINGHAM: Pneumonia.
2. GEORGE FETTEROLF and GEORGE W. NORRIS: Anatomical Explanation of Relatively Less Resonant, Higher Pitched, Vesiculatory Percussion Note Normally Found at Right Pulmonary Apex.
3. C. L. GIBSON: Rupture of Kidney in Children.
4. LOUIS B. WILSON and B. C. WILLIS: So Called Mixed Tumors of Salivary Glands.
5. W. GERRY MORGAN: Duodenal Alimentation.
6. EDWARD M. WILLIAMS: Typhoid Hemiplegia, One Case with Necropsy.
7. A. FREDERICK MILLER, E. J. S. LUPTON, and LAWRASON BROWN: Blood of Patients with Pulmonary Tuberculosis Undergoing Sanatorium and Tuberculin Treatment.
8. E. D. LOVEJOY: Treatment of Acne with Stock and Autogenous Acne Bacillus Vaccine.
9. F. FROESCHER and THEODORE DILLER: Tetany, with Autopsy Findings Showing Hemorrhages in Parathyroid Glands.
10. V. C. ROWLAND: Rheumatic Myositis.
11. WILLIAM PEPPER and J. HAROLD AUSTIN: Adams-Stokes Syndrome, with Complete Heart Block and Practically Normal Bundle of His.
12. SELIAN NEUHOF: Reflex Vagus Phenomena Grouped in Symptom Complexes.
13. Obituary of John Herr Musser.

2. **Percussion Note Formerly Found at Right Pulmonary Apex.**—Fetterolf and Norris find that the dexterity of the individual has no effect on either the vocal resonance and fremitus, or on the percussion pitch and resonance at the apices; that the percussion note in the healthy individual is practically always less resonant and higher pitched at the right apex, except in the presence of unusually well developed left pectoral muscles, and then only if we percuss very lightly. The normal differences

are due to the anterior position of the large vessels in relation to the right apex, as compared with the left, to the consequent encroachment upon, and reduction in size of the right apex, and to the contact of the inner surface of the right apex with the resonating trachea, while the left is in contact with the nonresonating solid tissue. These differences are most marked anteriorly and mesially, because in this situation both trachea and vessels exert their greatest influence, less marked posteriorly and mesially where the influence of only the trachea would be present, and least marked laterally, because the outer portion of the apex is farthest removed from the trachea, and the vessels at this point are practically similar in their relations on the two sides.

3. **Rupture of the Kidney in Children.**—Gibson finds only twenty-two cases in tabulated statistics. He adds four cases of complete rupture in children aged from eight to twelve years. Among those cases suitable for expectant treatment are included the milder forms of the injury, those cases in which evidence points to the injury of both kidneys (external evidence of injury on both sides, tumors in both loins, and anuria), and in those cases in which there are injuries of other parts of the body sufficiently grave as to preclude any operative treatment of the renal lesion. Operative treatment in cases showing evidence of progressive hemorrhage, persistent hematuria, anuria continuing longer than forty-eight hours without signs of involvement of both kidneys, and in cases showing evidence of endorenal or perirenal suppuration, or of peritoneal infection.

4. **So Called "Mixed" Tumors of the Salivary Glands.**—Wilson and Willis's article is based upon the study of fifty "mixed" tumors of the parotid and six "mixed" tumors of the submaxillary glands; most of the "mixed" tumors occur in young adults. The majority causing but little inconvenience, early surgical relief is not sought until an average period of about seven years has passed. No etiological relationship between the tumors and acute parotiditis could be discovered in the authors' cases. Those tumors which grossly were hard, consisting of fibrous connective tissue or cartilage, proliferated at their periphery only and were usually benign, while those which were grossly soft, consisting largely of parenchyma of types varying from adult to embryonic, were those among which malignant tumors were found. Connective tissue and parenchymatous elements both tend to revert to the embryonic type. There is but little evidence that these tumors are the result of proliferating adult epithelium, or endothelium, *per contra*, there is considerable evidence that these tumors are mesotheliomata of embryonic origin. Recurrence after fairly complete removal is unusual.

7. **Blood of Patients with Pulmonary Tuberculosis Undergoing Sanatorium and Tuberculin Treatment.**—Miller, Lupton, and Brown, from a study of 275 cases conclude that the nuclear picture is of no practical value in determining the therapeutic dose of tuberculin. In the course of the subcutaneous tuberculin test the blood picture is apparently not influenced until the stage of reaction occurs, when there may be a slight shifting to the left. This, however, is not a constant phenomenon.

There is a marked and permanent deviation of the blood picture to the left, indicating a grave prognosis, in tuberculosis with extension of the infective process.

8. **Treatment of Acne with Stock and Auto-genous Acne Bacillus Vaccine.**—Lovejoy reports results of bacillus vaccine treatment of fifty cases of acne, most of them being well advanced, with indurated and pustular lesions. He finds that the results obtained with the polyvalent stock vaccine equalled those obtained with an autogenous vaccine. Careful oversight, regulation of the amount and frequency of dose, and general hygienic care were more important, from a clinical standpoint, than that autogenous vaccines were used. Old emulsions produce a more rapid immunity with less danger of local reaction or anaphylaxis than those freshly prepared, and a carefully prepared emulsion will keep indefinitely if preserved from contamination, which fact has also been observed in connection with the vaccine treatment of typhoid.

11. **Adams-Stokes Syndrome, with Complete Heart Block and Practically Normal Bundle of His.**—Pepper and Austin report a case of Adams-Stokes syndrome which was a typical progressing case of heart block, lasting for three or four years, at first partial block alternating with normal rhythm, with occasional attacks of complete block, and later persistent complete block. The autopsy revealed no sufficient lesion in the bundle of His to account for the block. A dose of "606" was given when the patient had complete heart block, and was having daily attacks of Adams-Stokes syndrome, without appreciable result, good or bad. Several of the attacks of syncope were extremely prolonged (six and eight minutes). In this case was also noticed a genuine instance, though an isolated one, of hemisyctole. Clubbed fingers were present in this case without any valvular or pulmonary disease. During the patient's first residence in the hospital he showed for several days constant irregular ventricular action during complete block without attacks of syncope; he never showed this irregularity later, even when he had syncopal attacks and complete block.

AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

May, 1912.

1. G. L. BRODHEAD: Induction of Labor with Modified Champetier De Ribes Bag.
2. R. W. LUGENSTIE: Vaginal Hysterotomy in Late Months of Pregnancy.
3. G. W. KEMMER: Vaginal Cesarean Section and Its Limitations. Particularly in Eclampsia.
4. F. R. WILLIAMS: Is Toxic Vomiting of Pregnancy a Clinical Entity?
5. J. A. HARRAR: Integrity of Uterine Scar after Cesarean Section.
6. W. H. ALPERT: LOUISÉ BOUTIGEOIS.
7. W. F. CAMPBELL: Management of Appendicitis in Childhood.
8. R. A. BENSON: Minor Points in Infant Feeding.
9. S. A. BRAYLER: Emphysema of Infancy.
10. E. G. HYNES: Use of Flexner Serum in Cerebrospinal Meningitis.

1. **Induction of Labor.**—Brodhead, in a series of 139 cases, gives a list of the conditions that rendered the induction necessary; of these, toxemia is the most common. He considers that the great value of the bag is shown by the fact that in ninety per cent. of the cases, labor was induced by the use of not more than two bags, while in nearly seventy per cent. one bag was sufficient. In only six per cent. of all cases was labor not induced by the bags. In thirty-seven per cent. labor begins at the time

of the introduction of the first bag; in seventy per cent. labor commences within twelve hours after the insertion of the first bag, while in eighty-eight per cent. labor begins within thirty hours after the insertion of the first bag. The morbidity in private work is practically nil, and in hospital work very slight. The fetal mortality in private work is about five per cent., in hospital work eleven per cent. The maternal mortality from the use of the bag was nil.

4. **Toxic Vomiting of Pregnancy.**—Williams holds that the accepted classification of the types of vomiting of pregnancy, viz., reflex, neurotic, and toxic, is erroneous and entirely artificial. From the clinical findings, he concludes that toxic vomiting of pregnancy, as a clinical entity, does not exist. Gastric lavage absolutely controls the vomiting of pregnancy. Induction of abortion for the cure of the vomiting of pregnancy is not justifiable unless the preeclamptic syndrome presents itself as well.

7. **Appendicitis in Childhood.**—Campbell gives a brief résumé of the management of such cases and lays stress upon the fact that there is no medical and surgical treatment of appendicitis; the treatment is preoperative and operative. The physician has for his duty to put the patient in the best possible condition to receive the benefits of operation. One of the chief aims is to put the gastrointestinal tract in a state of quiescence; that the great disturbing factor is peristalsis and that everything which stimulates peristalsis is to be eliminated. Opium should not be given before the diagnosis has been made, but its employment afterward quiets the patient and exerts a beneficial influence upon the local process.

10. **The Flexner Serum in Cerebrospinal Meningitis.**—Hynes reviews the literature dealing with the use of the Flexner serum and feels that after five years' trial it has proved its germicidal properties in the meningococcus form of the disease. It has shown this by reducing a mortality that was formerly between seventy-five and eighty per cent. to one that is now between twenty-five and thirty per cent., and by the less frequent presence of complications and after effects.

AMERICAN JOURNAL OF SURGERY.

May, 1912.

1. A. V. MOSCHOWITZ: Torsion of Uterine Annexa in Hernias of Nurslings.
2. F. LENGNU: Urinary Disturbances Induced by Fibromata of Neck of Uterus.
3. E. B. CRAGIN: Treatment of Ectopic Gestation.
4. REYNOLDS: Ultimate Results of Conservative Surgery of Ovaries.
5. W. MINTZ: Pathology and Prognostic Significance of "Serous Catarrh" of Breast, and Bleeding Mamma.
6. T. ROSSING: Treatment of Multilocular Kidney Cystoma by Means of Multiple Punctures.
7. A. MULLER: Spreading of Inflammation in Renal Parenchyma in Ascending Pyelonephritis.
8. HEITZ: Creation of New Bladder and Urethra.

1. **Torsion of the Uterine Annexa in Hernias of Nurslings.**—Moschowitz made a diagnosis of strangulated hernia containing tube and ovary. An operation on the left tube was done, tube and ovary being twisted completely and gangrenous in the sac. The organs were untwisted and extirpated, the hernia was repaired, and the child made an uninterrupted recovery. The writer comments on the fact that the diagnosis is not difficult in spite of the rarity of the condition.

2. **Urinary Disturbances Induced by Fibromata of the Neck of the Uterus.**—Lengnu says,

although comparatively rare, pronounced urinary disturbances may complicate fibromata of the neck of the uterus. Complete retention of urine generally follows a prolonged incomplete retention, and not infrequently is the sequel of a paradoxical incontinence. It is due to direct pressure on the bladder. Simple dysuria is a more unusual disturbance from pressure upon, and elongation of the urethra. Although the literature is very scanty on the subject of pressure on the uterus by tumors of the uterine neck Lengnu believes that the ureters are generally compressed and elongated as the result of prolonged pressure. The important surgical point here is to adhere to the surface of the tumor in its removal; any wider dissection may injure the ureters.

3. The Treatment of Ectopic Gestation.—Cragin believes there should be but one method of treatment as soon as the diagnosis of unpurified ectopic gestation is positively made, i. e., removal of the gravid tube by operation, as this tube may be a constant source of danger of repeated ectopic gestation. In suspected cases of this kind Cragin's rule has been to wait till two or three weeks before full term and before spurious pains set in, and then to operate. Leaving the placenta *in situ* gradually to separate itself from its attachments, its subsequent removal may cause an uncontrollable hemorrhage.

4. Ultimate Results of the Conservative Surgery of the Ovaries.—Reynolds says that, except in malignant disease, double ovarian abscess, and tuberculosis, it is practically never necessary to remove both ovaries from a woman of active menstrual life. Ovaries that reach the size of an English walnut and contain cystic bodies should, however, not be regarded as normal. In so called cystic ovaries, he resects and punctures the small Graafian follicle cysts, even splitting the ovary down to the hilum in order to discover small cysts that are concealed. Out of 110 cases treated in the last fourteen months 106 were traced; in eighty-seven (eighty-two per cent.) the results of the operation as stated were satisfactory. On the other hand, the conservative operations are not followed by lasting ill effects.

5. The Pathology and Prognostic Significance of Serous Catarrh of the Breast and the Bleeding Mamma.—Mintz asserts that bleeding breasts, i. e., cases of sanguineous discharge from the nipples, are allied pathologically with cases of "serous catarrh," which he previously reported. He regards them as practically identical. Both these maladies occur in women around the climacterium. The changes are similar to those found in cystadenoma. In a number of cases he found early carcinoma. In view of the finding, and the fact that carcinoma is known to arise in breasts affected with such pathological processes, he favors amputation as a prophylactic measure.

6. The Treatment of Multilocular Kidney Cystoma.—Roosing says the affection being almost invariably bilateral, any radical operation for multilocular renal cystoma is contraindicated. The disease is not a malignant one in the ordinary sense, yet some method of relief must be employed for the increasing interference with renal function. The

author has therefore employed the simple procedure of multiple puncture in three cases with striking results. The pains disappeared and renal function was reestablished. He accounts for his results on the basis of relief from pressure of the remaining portion of normal renal tissue. He does not allege a cure, but strongly advocates the simple palliative procedure for the above mentioned reasons.

7. Spread of Inflammation in the Renal Parenchyma in Ascending Pyelonephritis.—Muller asserts that beside the blood stream, which must be taken into consideration in certain instances, the lymph stream must be accepted as the most important and frequent route for infection. Collections of small round cells can be found in lymph streams that run parallel with the bloodvessels. Small resulting infiltrates may rupture into various parts of the uriniferous tubules, the inflammatory cells being carried into the pelvis in this way.

JOURNAL OF EXPERIMENTAL MEDICINE.

May, 1912.

1. H. J. CORPER: Correlation of Histological and Chemical Changes in Spleen during Necrosis and Autolysis.
2. F. H. MCCRUDDEN and HELEN L. FALES: Complete Balance Studies of Nitrogen, Sulphur, Phosphorus, Calcium, and Magnesium in Intestinal Infantilism.
3. F. H. MCCRUDDEN: Effect of Fat and Carbohydrate Diets on Excretion of Creatin in Cases of Retarded Development.
4. H. NOGUCHI: Pure Cultivation of *Spirochaeta refringens*.
5. C. H. BAILEY: Effects of Titrations of Inequality of Sensitization of Corpuscles.
6. E. H. GOODMAN: Presence of Nuclease in Carcinoma.
7. A. A. EPSTEIN: Immunochemical Studies with Peptones.
8. J. A. KOLMER and J. F. SCHAMBERG: Administration of Salvarsan by Mouth to Animals and to Man.
9. R. A. LAMBERT: Production of Foreign Body Giant Cells in Vitro.
10. ALEXIS CARREL: Permanent Life of Tissues outside of Organism.
11. H. ZINSSER: Albuminolysins and Their Relation to Precipitin Reactions.

4. Pure Cultivation of *Spirochaeta refringens*.—Noguchi, by using the same technique as employed in the culture of the pallidum, was able to grow *Spirochaeta refringens* obtained from a moist condyloma. It was found to be nonpathogenic for rabbits and monkeys. The study of the cultural characteristics indicates that the refringens constitutes an independent species and is not a form representing merely a certain stage of *Treponema pallidum*. Neither the refringens nor the pallidum loses its characteristics at any stage of cultivation.

5. Effects of Inequality of Sensitization of Corpuscles.—Bailey states that it is well known that corpuscles will absorb many times the amount of specific amboceptor necessary to produce hemolysis, and that such absorption takes place with considerable rapidity. He has also noticed that duplicate titrations of the same serum gave results that differed beyond reasonable limits of experimental error, and that the reading observed from a serum titration could be influenced considerably by slight variations in the method of activating the corpuscles. These results appeared to be due to the fact that when corpuscles were added to an amboceptor dilution they were not at once evenly distributed through the fluid. Consequently on account of the rapidity with which the amboceptor is absorbed, an opportunity is afforded for certain corpuscles to take up more of the amboceptor than others, and consequently unequal sensitization occurs. As a result of several experiments the author found that a

considerable amount of amboceptor is absorbed by the corpuscles in fifteen seconds. This absorption was apparently influenced by the concentration of the corpuscles, being more rapid with a five per cent. than with a two per cent. suspension. It seems therefore that the stronger concentration is more susceptible to inequality of sensitization from variations in the method of activation, the inequality depending upon the time taken in obtaining an even distribution of the corpuscles through the diluted immune serum.

6. Nuclease in Carcinoma.—Goodman reports some experiments undertaken to determine whether or not nuclease could be found in cancer tissue; it being generally accepted that the cancer cell behaves differently from any cell of the normal organism due to the presence of abnormal forms of enzymes. Inasmuch as the vital part of any cell is its nucleus, successful attack directed against it would be followed by rapid destruction of the remainder of the cell. The author set out to ascertain whether a specific ferment acting upon the nuclei, nuclease, could be found in carcinoma. His experiments showed the presence of this ferment in cancer. It is therefore plausible to hold that the entrance into the blood stream of a ferment that is able to break down the vital component of a living cell would well explain the rapid destruction of the protein tissue of the organism, and might have some bearing upon the appearance of cachexia. Having found nuclease in the cancer tissue, the author intends to search for it in the blood and urine of patients suffering from cancer, and in the gastric contents in cases of gastric neoplasm.

8. Administration of Salvarsan by Mouth.—Kolmer and Schamberg gave the drug to eighteen animals, cats, dogs, and rabbits. These experiments showed that salvarsan is without immediate toxic effects when administered to animals by mouth in a relatively large single dose or in multiple smaller doses. The conclusions arrived at are: 1, Salvarsan does not produce toxic symptoms when given by the mouth; 2, after its administration arsenic is found in the bile and in the urine at the end of twenty-four hours, but it disappears at the end of seventy-two hours; 3, twenty-four hours after its administration to cats, the number of bacteria in the intestinal tract appears to be reduced; 4, salvarsan by mouth or intravenously, in rabbits, does not produce any appreciable microscopic changes; 5, with the exception of a little vomiting and diarrhea in some cases, salvarsan can be given by mouth up to 0.6 gramme to human subjects without producing toxic symptoms. When thus administered, the drug exerts a therapeutic influence, but one too feeble to warrant its use by this method.

9. The Production of Foreign Body Giant Cells in Vitro.—Lambert reports experiments by which foreign body giant cells may be produced *in vitro* by the addition of foreign objects, such as lycopodium spores and cotton fibres to cultures of chick embryo spleen. Such cells are formed by the fusion of large mononuclear wandering cells, probably endothelial cells and pulp cells. Connective cells do not take part in the formation. In some cases the large giant cells seen spread out over the cover glass in cultures of chick embryo spleen are

probably foreign body giant cells, the cover glass acting as the foreign body.

10. Permanent Life of Tissues outside of the Organism.—Carrel believes that senility and death of the cultures, instead of being necessary, resulted merely from preventable occurrences, such as the accumulation of catabolic substances and exhaustion of the medium. As results of the elaboration of various forms of technique he has been able to keep fragments of connective tissue *in vitro* in a condition of active life for more than two months. As a few cultures are still alive and growing actively *in vitro* after eighty-five days, it is possible that the life of these cultures will continue for a long time if no accident occurs. Carrel has also kept fragments of embryo chick heart alive *in vitro* for three months, at the end of which time they pulsated rhythmically.

MONTHLY CYCLOPEDIA AND MEDICAL BULLETIN.

May, 1912.

1. W. WAYNE BABCOCK: Surgery of Kidney.
2. MILTON K. MEYERS: Epilepsy in Adult Life in Association with Thyroid Disease.
3. MATTHEW WOODS: Industrial Status of Epilepsy.
4. LOUIS VON COTZHAUSEN: Treatment of Joint Diseases, and of Conditions Simulating Them, by Physical Manipulation.

1. Renal Surgery.—Babcock discusses renal traumatism, decapsulation, essential hematuria, resection, and suture of the kidney substance, renal tuberculosis, malignant disease, and nephrolithiasis. He considers that many of the operations done for crushing injury of the kidney have been unnecessary, and lays stress on the possibilities of spontaneous repair possessed by this organ, even when its tissues have been ruptured in many places. Operation should not be done unless there is evidence of intraperitoneal leakage, progressive hemorrhage, urinary extravasation, or sepsis. The benefit accruing from renal decapsulation in certain forms of nephritis is due to the formation of a new, very vascular capsule, which gives to the organ an additional source of blood supply. Gradually this new capsule becomes more fibrous and less vascular, and if the renal disease has not been cured during the period in which the new capsule was vascular, it now tends to increase in intensity, and the old symptoms may recur and progress to a fatal issue. Mild forms of nephritis will probably often end in recovery after decapsulation; doubtless some of these would terminate favorably under medical measures. Both kidneys may be decapsulated within ten or twenty minutes; spinal anesthesia should, by preference, be employed. Essential hematuria is usually permanently relieved by decapsulation or nephrotomy, but before operative intervention tuberculin, as well as, usually, turpentine or other medicinal measures, should be tried. Babcock considers the technique of resection and suture of the kidneys and specifies the indications for it. For localized abscesses, tuberculosis, necrosis, or non-malignant neoplasms, nephrectomy is generally indicated; but where the other kidney is absent or seriously diseased, resection is to be considered. Small miliary tubercles in the renal substance are at times spontaneously recovered from; medical treatment is indicated, including tuberculin, and in some cases decapsulation and scarification of the cortex. Malignant disease requires early nephrectomy. In

nephrolithiasis the author finds it better to remove stones through incisions in the renal substance rather than through the wall of the pelvis or ureter. Even stones in the upper ureter may often be milked back into the pelvis through the renal incision. Such incisions are more accessible and more readily sutured than incisions through the pelvis, heal rapidly, and do not so often cause secondary fistulas that may later necessitate nephrectomy. Calculous anuria requires prompt removal of the stone. It is feasible to operate on both kidneys at the same time, thus leaving no irritating factor nor cause of calculous anuria behind.

2. Epilepsy and Thyroid Disease.—Meyers believes it to be conceded that the thyroid has a decided influence on the nervous system, especially the sympathetic. Concomitantly with the increase in size of the thyroid during pregnancy, functional nervous affections, such as neuralgias, chorea, and the various psychoses are prone to develop. The author reports seven cases in which epilepsy appeared in the presence of goitre, exophthalmic or simple, and which suggest, in conjunction with other evidence, a causative influence of the thyroid and other ductless glands on the development of certain cases of epilepsy. Even though all cases of epilepsy do not show thyroid changes, or all persons with goitres, nervous symptoms, it is probable that the thyroid secretion in excess may act on the nervous system as do other toxins, or when deficient or perverted, may fail to neutralize certain toxins occasioning epileptic attacks in susceptible individuals.

3. Industrial Status of Epilepsy.—Woods points out the facts that even under the most favorable circumstances the breadwinning and tax-paying capacity of the epileptic cannot be very satisfactory, and that at present it is further reduced because of the inconsideration shown him by his fellows. Numerous accidents have occurred through the agency of epileptics unsuitably employed. Much might be done in finding safer opportunities for remunerative labor outside of institutions, in order that the State might be delivered from the burden of their care and they, in turn, contribute to their own support.

PEDIATRICS.

May, 1912.

1. SEYMOUR BARLING: Pneumococcal Peritonitis in Children.
2. ALEXANDER C. EASTMAN: Present Knowledge of Physiology and Chemistry of Gastric Digestion as Applied to Vomiting in Infancy.
3. JAMES K. YOUNG: Arthritis Deformans in Children.
4. EUSTACE SMITH: Choleric Diarrhea (Infantile).
5. HERMAN B. SHEFFIELD: Appendicitis, Typhlitis, Perityphlitis.

1. Pneumococcal Peritonitis.—Barling speaks of the susceptibility of the body to the invasion by the pneumococcus in early life. In twenty-eight cases of pneumococcal peritonitis in children, seventy-three per cent. were in girls. He does not, however, regard it as an infection through the Fallopian tubes, nor is it through the gastrointestinal tract by the local invasion of the bowel. In a certain number of cases no lesions were present in the lungs or elsewhere. The organism appears to have entered the circulation direct from some of those sites where it is normally found, a temporary increase of virulence, or of lowered resistance on the part of the patient having permitted this invasion to

take place even without the presence of any macroscopic lesion. The appearance of the peritoneal cavity is very characteristic. The bowel is inflamed and distended, and the coils are lightly glued together by the roughening of the peritoneal surfaces and by the fibrinous exudate. The infection is widely spread. The exudate is quite odorless, but may be secondarily infected by *Bacillus coli*. In subacute cases the inflammation may localize itself, usually in the loin or pelvis. Three different clinical types may be recognized. 1. Cases presenting marked abdominal features from the start, the abdomen being rigid, tender, and somewhat distended. Seven cases out of twenty-eight belonged to this class; of these, four patients recovered and three died. 2. Cases in which a pneumonia develops with the onset of the peritonitis. Fourteen out of twenty-eight belonged to this type, and of these, only one ended in recovery. 3. Cases in which the septicemia is of a more chronic type. Often pneumonia has been present some weeks previously. Collections of pneumococcus pus have appeared in one or other pleural cavity, or the peritoneum. The patient is weakened by the long illness. These cases are most suitable for vaccine treatment. Seven cases belonged to this class and only one terminated favorably. Three symptoms, pain, vomiting, and diarrhea, are very constant in their occurrence. His total mortality was seventy-nine per cent. All the cases that ended in recovery had been operated in, and none terminated favorably that had not been so treated.

SURGERY, GYNECOLOGY, AND OBSTETRICS.

May, 1912.

1. EMIL BECK: Stereoscopic Photography with Natural Colors.
2. M. H. RICHARDSON: Surgical Diseases of Pancreas.
3. G. E. BREWER: Surgery of Biliary Passages.
4. J. F. BINNIE: Surgical Pathology of Stomach and Duodenum.
5. A. J. OCHSNER: Coordination of Undergraduate and Postgraduate Teaching of Clinical Surgery with View to Efficiency.
6. DUDLEY TAIT: Fibrous Atrophy of Salivary Gland; Treatment of Salivary Fistula.
7. S. ROBINSON: Apparatus for Thoracic Surgery under Endotracheal Insufflation or Positive Pressure; Also for Ether Anesthesia, by Mask, Endopharyngeal, Endotracheal, and Intrabuccal Methods.
8. JACOB FRANK: Secondary Parotiditis Following Operations for Appendicitis.
9. E. J. SENN: Curvature Valve Gastrostomy.
10. W. M. BRICKNER: Rupture of Pyosalpinx as Cause of Diffuse Purulent Peritonitis.
11. T. S. CULLEN: Umbilical Tumors Containing Uterine Mucosa or Remnants of Mueller's Ducts.
12. WILLIAM HESBERT: Report from Membership of Chicago Surgical Society on Certain Questions Relating to Appendicitis.

3. Surgery of the Biliary Passages.—Brewer reviews in detail twenty-six deaths that occurred in a series of 175 cases, the operations and the results, and discusses the mistakes that were made in the diagnosis or in the technique of the operation.

4. Surgical Pathology of the Stomach and Duodenum.—Binnie concludes, among other things, that hemorrhage, erosions, and ulcers can be produced by toxins in the circulation; that acids favor, but do not cause ulceration in the stomach, duodenum, and jejunum, and that stimulation and section of the vagus can produce ulceration; and that in the latter the ulcers persist, provided that the musculature of the stomach is not impaired. Granting that cancer requires an ulcer as a starting point in seventy per cent. of the cases, yet cancer is common in the stomach and rare in the duodenum, while ulcer is even more common in the duodenum than in the stomach. Two explanations are given: First, the difference existing between the juices of

the stomach and of the duodenum; the acid contents of the stomach may conduce to cancer; the alkaline or alternately alkaline and acid contents of the duodenum may have an opposite effect. Second, the fact that the stomach is more exposed to mechanical irritation from badly masticated and improper foods.

II. Umbilical Tumors Containing Uterine Mucosa.—Cullen gives an interesting account of certain peculiar tumor formations in the region of the umbilicus. Such growths have been found only in women usually between the thirtieth and fifty-fifth years. They are usually described as being the size of a small nut. Sometimes they are painful, particularly at the menstrual period and in at least one instance there was a brownish, bloody discharge from the umbilicus at such times. Histological examination shows both fibrous tissue and nonstriated muscle, one or the other predominating in different specimens. Scattered throughout the section are glands, round, oval, or irregular. They occur singly or in groups, and are lined with cylindrical epithelium. The picture is that of the uterine mucosa with its typical glands and its characteristic stroma.

BRITISH JOURNAL OF CHILDREN'S DISEASES.

May, 1912.

1. I. TURNER: Amaurotic Idiocy or Tay-Sach's Disease.
2. C. F. MARSHALL: Paternal Transmission of Syphilis.
3. F. PARKES WEBER: Diabetes Insipidus in Boy with Positive Wassermann's Reaction; Polyuria in Children and Infantilism.
4. W. LIZEN-BROWN: New Galactagogue.

1. Two Cases of Amaurotic Idiocy or Tay-Sach's Disease.—Turner reports with autopsies two cases of Tay-Sach's disease, one of which was in a child not of Jewish extraction. One child was thirteen years of age, the other five years, both far beyond the limit generally assigned to this disease. One died when she was fourteen years old, the other when over five years. Turner believes the disease to be a failure in metabolism due to some gland deficiency or anomaly; if so, amaurotic idiocy must be ranged alongside that produced by defective thyroid secretion, and perhaps it too will eventually yield to therapeutic measures, in part at least.

2. Paternal Transmission of Syphilis.—Marshall considers that we have three problems: 1. Is it possible for syphilis to be transmitted from father to child by spermatic infection of the ovum? 2. Is it possible for a healthy mother to be infected from a fetus resulting from spermatic infection of the ovum? 3. Is it possible for a healthy mother to bear a syphilitic child infected by the father without becoming infected herself? He considers the evidence in regard to this from clinical, microbiological, and serological viewpoints, and concludes that there is not sufficient evidence to justify the renunciation of the doctrine of paternal transmission.

3. Diabetes Insipidus in a Boy with Positive Wassermann's Reaction; Polyuria in Children and Infantilism.—Weber reports a case of diabetes insipidus in a boy of ten years. Polyuria and polydipsia were first noticed in his third year, otherwise he seemed to have good health. His urine average 4,000 c.c. in twenty-four hours, was very low in specific gravity, free from albumin, sugar, and tube casts. There was no history pointing to syphilis, the blood giving a positive Wassermann reaction.

Treatment by thyroid feeding and mercurial inunction gave a negative result in regard to the polyuria. The exact amount of common salt in the diet made very little difference in the amount of urine passed. A picture of the skull does not confirm the view that diabetes insipidus is due to disease of the pars intermedia of the hypophysis cerebri. There are two classes of polyuria in children, the first due to chronic interstitial nephritis and possibly associated with congenital syphilis. The second class may likewise be associated with congenital syphilis, but there are never signs of interstitial nephritis and the condition is one of true diabetes insipidus. In both classes there is sometimes a certain degree of infantilism. Weber concludes that in cases of diabetes insipidus and also in cases of polyuria due to kidney disease, great caution should be used in regard to the use of antisiphilitic methods, especially in children, who are very liable to serious complications from mercurial treatment.

JOURNAL OF TROPICAL MEDICINE AND HYGIENE.

May 15, 1912.

1. G. W. ELLACOMBE: Sleeping Sickness Treated in Livingstone Hospital during 1911.
2. E. F. BOUR: Cases of Edema of Legs and Albuminuria Occurring in Reformatory, with Contribution to Study of Bilharziasis.

1. Treatment of Sleeping Sickness.—Ellacombe reports a case of trypanosomiasis treated successively with tartar emetic, salvarsan, soamin, and atoxyl. The first was given intravenously in 0.1 gramme doses, dissolved in forty minims of distilled water; a total of twenty injections on alternate days, with very satisfactory effects on the general condition. After the first injection, which was followed by symptoms of collapse, care was taken to withhold food for twelve hours before the injections, with the result that no further unpleasant results of consequence were noted. Ten days after the last injection trypanosomes reappeared in the blood. Another course of tartar emetic followed soon, but after this intravenous injections had to be abandoned, as all the superficial veins were occluded. Believing himself cured, the patient left the hospital, but was obliged to return some months later. Further tartar emetic injections being refused soamin was injected intramuscularly in ten grain doses on alternate days. After ten injections some benefit was experienced; fever disappeared, but for only four days, after which the injections had to be continued. Involvement of the nervous system by the disease now became evident, and the general condition gradually grew worse. Salvarsan, 0.5 gramme, was given intravenously without benefit; likewise, intravenous injections of tartar emetic. The patient succumbed. Atoxyl was given in this case only a few times, soamin being considered safer. Mercury, nuclein, and hexamethylenamine were also administered for the relief of concurrent conditions, but proved ineffective. The customary salvarsan injection apparatus is best used in giving tartar emetic injections, rather than a hypodermic syringe, as saline solution can then be employed in introducing the needle, avoiding pain from the irritant injection, and occlusion of the veins can better be obviated.

2. Edema of the Legs, Albuminuria, and Bilharziasis.—Bour observed the occurrence of

edema of the legs and albuminuria in many of the boys in a reformatory in Mauritius. The symptoms were ascribed to a combination of ptomaine absorption, an excessive salt ration, and bilharzia. Forty-four per cent. of the inmates were found to have bilharziasis, and strict prophylactic measures were enforced to prevent infection with the miracidium through the cutis, and especially self reinfection through the prepuce or meatus. After five months 30.8 per cent. of those who had previously had bilharzia no longer showed any ova in their urine. Researches were carried out concerning the ova and larvæ: No evolution of the miracidium (larva) was detected in water, where it died after about forty-eight hours. In human serum, it threw out globular buddings of a granular aspect, which may have been sporocysts; this transformation was never observed in media other than serum.

FOLIA UROLOGICA

February, 1912.

1. HANS WILDBOLZ: Effect of Poisons on Nephrectomized Rabbits.
2. M. GIORDANO: New Qualitative and Quantitative Method of Determining Uric Acid in Blood.
3. P. STEINER: Polycystic Kidney Tumors.
4. E. E. FRANCO: Gonococcus Pyonephrosis.

March, 1912.

5. F. CATHELIN: Drain Lost for Six Months in Ureter; Removed from Bladder by Vesicovaginal Section.
6. O. MICHAEL: Colpocystostomy.
7. F. RANDISI: Lipoid Bodies of Prostate.
8. B. E. CHOLZOW: Perineal Urethrostomy.
9. F. WAGNER: Death from Primary Bilateral Malignant Kidney Tumors.

1. **The Effect of Poisons on Nephrectomized Rabbits.**—Wildbolz concludes that urethane, morphine, and diphtheria toxine have no more toxic effect upon nephrectomized rabbits than upon those with two kidneys. Rabbits with but one kidney have increased sensibility for chloral hydrate, atropine, and medinal. The second class are poisons which are excreted into the urine slowly without a change. The loss of one kidney decreases the resistance for poisons which are excreted unchanged by the kidneys, but not for poisons which are made harmless by being excreted into the intestine, transformed into physiological substances, etc.

3. **Polycystic Kidney Tumors.**—Steiner reports three cases of these tumors; in one case nephrotomy was done, in two cases decapsulation. He agrees with Israel that nephrotomy is not the method of treatment. Tuberculosis, marked hematuria, pyonephrosis indicate nephrectomy only if the remaining kidney is unaffected. Neither nephrotomy nor decapsulation has a more favorable effect upon the course of the disease.

4. **Gonococcus Pyonephrosis.**—Franco reports a case of a twenty-six year old woman who had a ureteritis and pyonephrosis of the right side. Neisser's gonococcus and another diplococcus were obtained from catheterized specimens of the right kidney. At a later date a pure culture of gonococci was obtained. The pyonephrotic kidney which was removed showed parenchymatous nephritis, interstitial nephritis, severe pyelitis, and ureteritis. This is the fourteenth case of pure gonococcus pyonephrosis.

5. **Drain Removed from the Bladder.**—Cathelin reports a woman who had sixteen operations and examinations. Albarran had per-

formed a nephrotomy and Cathelin nephrectomy for kidney fistula; at the time of nephrectomy by Cathelin the patient said that a drain had been left in the kidney. As the tube was not found during the nephrectomy the patient was considered to have been suffering from a vivid imagination. No foreign body in the bladder was found. Two years after the operation the patient had a pain in the right pelvic region and symptoms of a cystitis. Cystostomy showed a long drainage tube incrustated with salts which probably had entered the bladder from the ureter. This was removed by vesical vaginal section.

9. **Primary Double Sided Malignant Kidney Tumor.**—Wagner reports a case of a primary bilateral kidney tumor in a man of seventy-six years. The patient complained of weakness and swelling in the left groin. There was an enlarged, irregular, hard tumor in the left kidney region. The right kidney was also somewhat enlarged. There were tumor masses in the left groin; no varicocele; the urine was normal. It was considered that the patient had primary left sided kidney tumor with secondary metastasis. During the time the patient was observed tumor cells were found in the urine. The patient died and autopsy showed a right hypernephroma, with metastasis into the retroperineal lymph glands, in the right suprarenal glands, and in both groins; on the left side a spindle celled sarcoma starting from the kidney capsule with large subcutaneous sarcomatous tumor in the left pelvic region. Such double involvement with primary tumors is extremely rare. Generally, if the second kidney is involved it is the site of the metastasis. In twenty-six autopsies Kuster found that the second kidney contained metastatic growths forty-two times.

Proceedings of Societies.

ALUMNI ASSOCIATION OF THE ST. JOHN'S GUILD HOSPITALS FOR SICK CHILDREN.

Third Stated Meeting, Held November 15, 1911.

The President, Dr. MEDWIN LEALÉ, in the Chair.

Unusually Severe Intestinal Toxemia.—Dr. WILSON B. ZIMMER, of Brooklyn, reported the case of a girl, two years and seven months old, who had been brought back from the country because she was suffering from a persistent high temperature and increasing irritability. There had been several similar attacks of variable duration, from one day up to two weeks. These attacks were characterized by pronounced constipation, and relief of this condition was in all other instances followed by a prompt return to normal health. In all there were some seven attacks. At the time that this patient came under observation she had been sick for three weeks with anorexia, coated tongue, constipation, irritability, and an irregular temperature, which varied between 99° and 103° F., with occasional intermissions, at which times the patient was apparently well. Intestinal parasites, typhoid fever, malaria were all suggested as diag-

noses. For the three days previous to coming under care the patient had been apparently well, playing about the house. The bowels had, however, been sluggish and hard to move. When first seen she was playing. Her skin was pale, tongue dry, heavily coated, and red at the margins, breath foul, temperature 102.4° F., pulse 110, eyes bright, mind clear, reflexes normal, heart and lungs normal, abdomen moderately distended and tympanitic with slight tenderness. The urine was normal in amount and showed a trace of albumin. Restriction of the diet to fruit juices, and the administration of cascara by mouth and high oxgall-turpentine enemata effected free evacuation and in consequence three days of great improvement. The temperature dropped to normal and remained there, and the tongue was considerably clearer. On the fifth day the bowels became obstinately constipated and would respond neither to cascara nor to enemata. Temperature rose to 103.4° F., and irritability became very pronounced, with Widal reaction negative, red cells 4,250,000, hemoglobin seventy-eight per cent., white cells 11,000, spleen not enlarged, tympanites moderate. Up to the tenth day the temperature ranged from 99° to 105° F., the maximum daily temperature being in the early morning hours. Constipation was absolute. Upon the tenth day there appeared in addition complete dilatation of the right pupil, slight divergent strabismus, without paralysis of facial muscles or muscles of the extremities. Lumbar puncture yielded about four c.c. of clear sterile fluid. No abatement of the meningeal symptoms followed the puncture. During the next twenty-six hours both pupils dilated, deafness developed, and a marked opisthotonos supervened. At this stage the reflexes of deglutition were abolished and the bowels involuntarily evacuated putrid stools, nearly black in color, but said to contain no blood. Death ensued on the twelfth day. No post mortem examination was permitted, and the speaker has called it a case of unusually severe intestinal intoxication.

Clinical Observation of Recent Cases of Acute Polioencephalitis.—Dr. FRANCES E. BUTLER, of New York, read this paper. (See this issue of the JOURNAL, page 18.)

Dr. MEDWIN LEALE, of New York, said that an acute localized polioencephalitis was not altogether unknown in infancy and early childhood. For example, the extrinsic muscles of the eye, one or more of them, may be affected, producing squint. The external rectus was the one most commonly involved. The onset was sudden. This condition usually passed as a convergent concomitant strabismus so common in childhood. In anterior poliomyelitis this was sometimes found as an associated condition.

Dr. CARLISLE S. BOYD emphasized the diagnostic importance of lumbar puncture, especially in differentiating polioencephalitis from meningitis, for which the disease might be mistaken. He stated that in collections of cases observations had shown the cerebrospinal fluid in polioencephalitis and in tuberculous meningitis alike, except bacteriologically. In each case the fluid was clear, escaped usually under pressure, and microscopically usually showed ninety per cent. or more of lymphocytes.

In polioencephalitis the cerebrospinal fluid was sterile, whereas in tuberculous meningitis the tubercle bacillus was present, and to be found in a variable percentage of cases, depending largely upon the observer and time devoted to the examination. In the examination of the cerebrospinal fluid in 137 cases of tuberculous meningitis seen at the Babies' Hospital, Hemenway found the tubercle bacillus in 135. Others have found the bacillus in over ninety per cent. of positive cases. Morse, of Boston, stated that in the usual routine examination the bacilli were missed in ninety per cent. of cases. Doctor Boyd said in those cases in which the tubercle bacilli were not found, if guinea-pigs were inoculated, the animals would show evidence of infection in four to six weeks, if the case was tuberculous. In cerebrospinal and other forms of meningitis such as those caused by the streptococcus, staphylococcus, influenza bacillus, the pneumococcus, and colon bacillus, the cerebrospinal fluid was cloudy or distinctly purulent, and smears and cultures showed the infecting organism. He mentioned that a fluid containing tubercle bacilli might be cloudy as a result of a mixed infection.

Maternal Feedings, Some Important Contraindications.—Dr. W. MORGAN HARTSHORN, of New York, read this paper. (See this issue of the JOURNAL, page 20.)

Dr. MEDWIN LEALE said that Doctor Hartshorn's paper was of value, not only on account of the paucity of literature on the contraindications to maternal feedings, but because, in addition to his own views, it embodied the opinions and experience of a number of other authorities. In fact, it was a résumé of some of the leading opinions on this important subject.

Dr. ROWLAND G. FREEMAN, of New York, said that Doctor Hartshorn had rendered a considerable service to the medical profession by investigating in this manner a subject which had allowed of a great difference of opinion, and about which many medical practitioners had felt considerable doubt in meeting such emergencies.

There were two factors that would be important in deciding in any particular case which had not been touched upon in the paper. It seemed to him that the most important question in the propriety of taking the baby from the breast in these cases was to determine whether the baby would do well or not on modified milk. If it could be tried on modified milk and did well, and there was any doubt as to the safety of the breast milk, there was no question that the baby should be weaned. If, on the other hand, the baby needed breast milk in order to thrive, as some babies did, and could not well obtain breast milk except from the mother, one might be inclined to keep the baby at the breast. And this brought up the other matter of the social position of the parents. If the parents were well to do and could employ a wet nurse and secure medical advice one would have less hesitation in putting the baby on artificial food. If, however, the child was born in the tenements of poor but intelligent parents one might be inclined to take more chances on breast feeding, as tenement house babies often did poorly on bottles. Still another factor was the probable duration of the ill-

ness. If it was an illness liable to be of short duration, an effort might be made to keep the milk by the use of the breast pump, putting the baby back upon the breast as soon as it seemed safe, whereas if the illness was to be a long one such methods were not applicable. In the case of a "specific" mother with a specific baby, there need be no hesitation about nursing the baby while both mother and baby were treated for syphilis.

Dr. CLINTON B. KNAPP, of New York, said that the reader of the paper had expressed the views which he held upon the topics with which the paper dealt, remarking that the great similarity of opinion among the men that Doctor Hartshorn had consulted was noteworthy. He observed that the whole question was one that had been neglected by the textbooks and that to the best of his knowledge this was the first complete communication upon the topic. He said that he should like to add, at that time, that since maternal nursing might be contraindicated at any minute it was always wise to give the baby from birth one bottle a day, as in this way the baby became accustomed to the bottle. That this course had the added advantage that it afforded the mother a period long enough for some form of recreation, a very necessary condition for the preservation of the mother's health and, in consequence, that of the baby.

Letters to the Editor.

SCHOOL INSPECTION.

NEW YORK, June 22, 1912.

To the Editor:

I take this opportunity, at the close of the school year, to call your attention to the great deterioration that has taken place in the methods and results of school inspection in this city. Contagious cases are no longer systematically excluded, since nurses are trying to make diagnoses that only experienced physicians are qualified to make; the recommendations on the slips given to children that are referred to dispensaries border on the ludicrous. All in all, the present situation is most discreditable to the city that once was a pioneer in medical school inspection.

It seems to me that it would be highly proper for your JOURNAL to take this matter up editorially; by so doing you may succeed in checking a decline that is already showing results in an unusual prevalence of contagious diseases, particularly measles and pertussis, among the school children of this city.

F. L. WACHENHEIM, M. D.

[Our correspondent voices a proper grievance, one which has already been complained of by others, individually and through medical societies. The whole matter is now under consideration, we believe. We cannot, however, sustain the contention of Doctor Wachenheim, that this change in policy resulted "in an unusual prevalence of contagious diseases." Any student of epidemiology knows that there is a peculiar cyclic recurrence of these diseases, and the argument here advanced is merely one of *post hoc ergo propter hoc*. We refer the

doctor to an original communication on Von Hanse-mann's Plea for Conditional Reasoning in Medicine, in our issue for June 11th, p. 985.]

TWO EFFICIENT APPLICATIONS IN HEMORRHOIDS.

To the Editor:

NEW YORK, July 1, 1912.

Strictly speaking, hemorrhoids do not belong within the domain of my specialty, but when you treat a venereal or dermatic patient and he asks you to give him something for his piles, which have been annoying him for ever so long, you cannot refuse to do so. I have found the following two combinations extremely efficient, more efficient than any combination recommended in any textbook or in any book of formulas, and I have tried many of them.

I do not wish to discuss the question whether hemorrhoids should ever be treated palliatively, or whether it would not be best always to subject them to a surgical operation. All I know is that these preparations proved efficient in practically every case, so that patients who were considering an operation gave up the idea because they had no further trouble. The preparations are as follows:

I.

R. Pulveris gallæ,	5i;
Zinci oxidi,	5i;
Hydrargyri chloridi mitis,	5ss;
Bismuthi subnitrat,	5i;
Cocaine hydrochloridi,	gr. v;
Unguenti aque roseæ,	5i.
M. Fiat unguentum.	

II.

R. Pulveris gallæ,	grs. v;
Zinci oxidi,	grs. v;
Morphine sulphatis,	gr. 14;
Cocaine hydrochloridi,	gr. 1;
Atropini sulphatis,	gr. 1/60;
Olei theobromæ,	grs. xxv.
M. Fiat suppositorium No. 1. Da tales doses No. 24.	

In external piles the ointment is used, well smeared in, within and around the anus, and protected with a piece of cotton partially inserted therein. In internal piles the suppositories are used. Sometimes both are required. The suppositories are used once or twice, the ointment three times a day.

That the anus is to be kept thoroughly clean, that constipation is to be avoided go without saying. Injections several times a day of four to six ounces of cold water within the rectum aid the treatment materially.

I do not attempt to make a fine diagnosis, for I seldom find a case in which these two combinations, with common sense adjuvant treatment, do not effect a practical cure, or at least afford great relief. That there are hemorrhoids for which the only treatment is surgical intervention goes without saying. I am speaking of the mild varieties.

A word about the formulae. I find that the old fashioned powdered nutgall is the best astringent in cases of hemorrhoids. Neither tannic acid nor gallic acid, and still less any of the mineral astringents can take its place. The fear that might be entertained by the over timid of a cocaine habit

on account of the cocaine in the suppositories and in the ointment is merely a figment of the imagination. I never saw it cause any trace of any habit. That the patients may not repeat these prescriptions indiscriminately is well accomplished by our law, which prohibits the renewal of any prescription containing cocaine.

WILLIAM J. ROBINSON, M. D.

New Inventions.

SOME NEW INSTRUMENTS FOR REMOVING THE TONSIL.

BY NATHAN G. WARD, M. D.,
Philadelphia.

In the enucleation of the tonsil each operator must work out his own technique. As a result of variations in ideas numerous instruments have been devised for this operation, each operator finding some change or modification in previous instruments better suited to his purpose. I have, therefore, devised the following instruments:

Tonsil tenaculum (Fig. 1). The chief point of

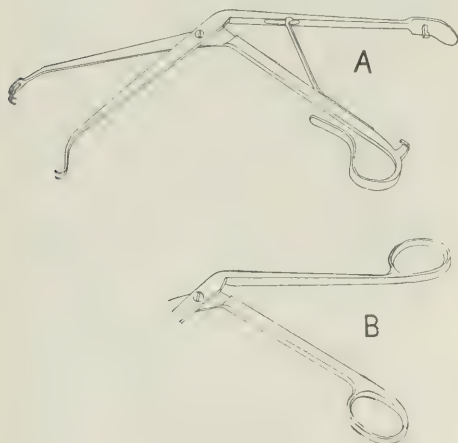


FIG. 1.—Tonsil tenaculum.

difference between this instrument and previous tonsil tenacula is the curve near the tines, allowing the end of the instrument to dip over the tongue without touching its base. This is advantageous in operating under local anesthesia by lessening gagging, rather than under general anesthesia. The handle is made in two styles: 1. With open ring and lock so



FIG. 2.—Tonsil dissector.

that the tonsillotome, or snare, may slip over the instrument; 2, regular closed rings; the tonsillotome cannot be slipped over this style of forceps.

Tonsil dissector (Fig. 2). This instrument is shaped so as to facilitate freeing the palatine pillars and other tonsillar adhesions. It is tempered so as

to stand any desired edge, varying from that of a dry dissector to that of a knife, suited to the operator's technique. Frequently the entire tonsil may be removed with this dissector. Generally, however, the operator will prefer to sever the base of the tonsil with the snare or tonsillotome.

Tonsil snare (Fig. 3). This instrument is a com-

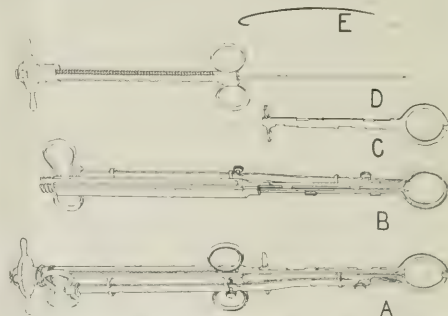


FIG. 3.—1. The instrument complete when put together. B, main body; C, slide closing groove; D, stilette, separate parts of the instrument showing its separation and facilities for cleaning, there being but one half inch of groove unopened. All the other parts can be cleaned by means of a scrubbing brush.

The wires (E piano steel wire No. 5) are cut the proper length and the ends bent ready for use. By this means preparing the instrument requires but a few seconds.

bination of the snare and tonsillotome, permitting it to be placed as easily, and in the same manner, as a tonsillotome, but severing the base of the tonsil by means of the cold wire. When being placed the wire is concealed in the groove of the ring. After the fork of the instrument is forced into the tonsil one may let go with the tenaculum. The closure of the hands, similar to operating the tonsillotome, takes up the slack of the wire, after which the tonsil is severed by slowly turning the screw at the end of the instrument, just as in the operation with other snares. The fork holds the piece that is cut off so that it does not drop into the throat, therefore, no other instrument is required in the throat after the snare is fixed. The tonsil may be severed slowly or rapidly, continuing the administration of ether at the same time.

After being used on the first tonsil the loop is easily reformed for removing the second tonsil—without requiring to be rethreaded.

These instruments have proved to be very satisfactory and after extensive use (two years) I have found further changes unnecessary.

116 SOUTH EIGHTEENTH STREET.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Filaria and Elephantiasis in Fiji. Being a Report to the London School of Tropical Medicine. By P. H. BAHR, M. A., M. B., B. C., D. T. M. & H., Cantab., M. R. C. S. Eng., L. R. C. P. Lond. With Many Colored and Monochrome Plates, Numerous Charts and a Map. London: Witherby & Co., 1912. Pp. viii-192.

In a monograph of 192 pages Bahr gives a very complete presentation of the subject, a report of a year's special

investigation. The first eighty-two pages are taken up by what might be termed clinical data. There is given a description of the adult filariae, of the various mosquitoes present in Fiji, particularly of those types which were found to transmit the parasites, also an account of the development of the filaria in the mosquito and the mode of entry of the filaria into the human host. Then follows an extended presentation of the relation of filaria to elephantiasis, the portions affected, the pathological lesions that occur, and the changes that the filariae themselves may undergo. Although these topics occupy possibly the greater part of the first portion, there seems to be little that is not dealt with; no phase that one can think of has been omitted. The treatment and the prevention of the condition are also discussed. Following this more special part, come numerous appendices giving data upon which many of his conclusions are based. The author brings out certain deviations of the filaria in Fiji from *F. Bancrofti* and gives several reasons for believing that it is a different species, the chief one, possibly, being that it exhibits in the blood no periodicity, occurring in equal abundance in the blood at all hours of the day or night. Tables are given showing the results of blood examinations with special reference to the presence of eosinophilia. Numerous charts, showing the lack of periodicity of the filaria, are presented also tables dealing with the development of the filaria in mosquitoes. To enumerate the many important phases discussed would be to give a complete list of the contents. In addition to the text the illustrations are very good, the photographs and plates showing very clearly the conditions represented. This monograph forms a very valuable acquisition to the subject of tropical medicine.

A Textbook of Pathology. With a Final Section on Post Mortem Examinations and the Methods of Preserving and Examining Diseased Tissues. By FRANCIS DELAFIELD, M.D., LL.D., Emeritus Professor of the Practice of Medicine, College of Physicians and Surgeons, Columbia University, New York, and T. MITCHELL PRUDEN, M.D., LL.D., Emeritus Professor of Pathology, College of Physicians and Surgeons, Columbia University, New York. Sixth Edition. With Thirteen Full Page Plates and Six Hundred and Eighty-Seven Illustrations in the Text, in Black and Colors. New York: William Wood & Co., 1911. Pp. xxvi+1114. (Price, \$5.50.)

The ninth edition of this excellent textbook finds it still confining itself to its special field, but enlarged and improved in many particulars. The section on general pathology has been extended, more attention is given to pathological physiology, and a more scientific view is taken of pathology in general, i. e., as an aspect of the diverse manifestations of life and energy rather than as a specially human phenomenon. Dr. T. Mitchell Prudden expresses his regrets that he is now the sole author, Doctor Delafield having withdrawn from the last four revisions, but the remaining author has done his work well. Obligations are expressed for valuable contributed matter from Professor Francis Carter Wood, Dr. F. R. Bailey, Dr. Edward Leaming, Dr. W. C. Clarke, Professor Philip Hanson Hiss, Professor John H. Larkin, and Professor Augustus B. Wadsworth. The new illustrations are excellent and the volume is handsomely printed. For students especially this pathology is useful, but the index might easily be made more complete.

Miscellany.

Why Not Muzzle Dogs?—Reports of deaths from rabies are brought from every direction, so that it is difficult to collate them, remarks the *Star* editorially. A rabid dog on Long Island caused a number of fine horses to be killed and several persons were bitten by this dog or by one infected by him. From New Jersey come stories of anxiety in many households, and a recent report

of the California State laboratory records 240 examinations for rabies, of which eighty were positive. Sixty-eight human beings were bitten by rabid animals and five died from hydrophobia. The report states that there is every indication that the disease will continue to spread until it is curbed by the thorough muzzling of all dogs at large. Rabies can be more easily eradicated than any other important epidemic disease. The boards of health are either helpless or negligent in this matter. It is difficult to overcome the prejudices of a dog lover by suasion; therefore the police powers of the boards of health should be exercised without regard to personal feelings, just as they are enforced in the isolation of smallpox cases, no matter how cruel that may be for the patient or his friends. There may be no comfortable muzzles, but there are some that may be worn even by a pet of the household without pain or distress. Fido must be muzzled when he is at large; there should be no compunction about it.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, yellow fever, plague, and smallpox were reported to the surgeon general of the United States Public Health and Marine Hospital Service during the week ending June 28, 1912:

CHOLERA—FOREIGN: India, April 26-May 18, 91 cases, 103 deaths; Indo China, April 30-May 13, 83 cases, 63 deaths; Turkey, Feb. 29-May 18, 249 cases, 96 deaths.

YELLOW FEVER—FOREIGN: Brazil (Manaos), May 26-June 1, 5 deaths; Chile (Tocopilla), May 25, present; Mexico, June 22, 4 cases.

PLAGUE—INSULAR: Porto Rico (San Juan), June 25, 3 deaths.

PLAGUE—FOREIGN: Chile, 1911, 262 cases, 84 deaths; (Quique), May 5-11, 1 case; China (Hongkong), May 5-11, 138 cases, 118 deaths; Dutch East Indies, March 3-30, 35 cases, 34 deaths; Egypt, April 24-May 20, 110 cases, 37 deaths; India, April 28-May 18, 158 cases, 235 deaths; Indo China, April 30-May 13, 21 cases, 10 deaths; Java, May 5-11, 10 cases, 9 deaths; Persia, April 14-May 11, 513 cases, 394 deaths; Russian Empire (Ural Territory), April 21-May 5, 7 cases, 6 deaths; South Africa (Durban), May 25, 1 case, 1 death.

SMALLPOX—UNITED STATES: Indiana, May 1-31, 72 cases; Kansas, March 1-31, 104 cases; April 1-30, 22 cases; Kentucky (Louisville), Jan. 1-May 31, 33 cases; Louisiana (New Orleans), June 9-15, 4 cases; South Carolina (Charleston), April 1-30, 3 cases; Tennessee (Knoxville), June 9-15, 5 cases; Wyoming (additional), Feb. 1-29, 18 cases, 3 deaths; March 1-31, 15 cases.

SMALLPOX—FOREIGN: Brazil, May 19-25, 1 death; British East Africa, April 1-30, 1 death; Canada, May 26-June 17, 11 cases; Chile, May 19-25, 7 cases, 6 deaths; China, May 1-25, 18 cases, 4 deaths; France (Paris), May 10-June 1, 9 cases, 1 death; Germany (Chemnitz), May 19-25, 1 death; May 26-June 1, 24 cases; Great Britain (Bristol), May 26-June 1, 1 case; India, April 28-May 18, 74 cases, 48 deaths; Indo China, April 30-May 13, 4 cases, 2 deaths; Italy, May 10-June 8, 18 cases, 1 death; Java, May 5-11, 3 cases, 1 death; Mexico, April 28-May 18, 88 cases, 43 deaths; Portugal (Lisbon), May 26-June 1, 3 cases; Russia, April 14-May 25, 47 cases, 14 deaths; Spain (Malaga), March 1-31, 5 deaths; Straits Settlements, April 28-May 4, 1 case, 1 death; Turkey in Asia (Beirut), May 19-25, 12 cases.

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers of the Public Health and Marine Hospital Service for the seven days ending June 26, 1912:

Converse, G. M., Acting Assistant Surgeon. Granted two years' leave of absence, without pay, from June 19, 1912. **Creel, R. H.**, Passed Assistant Surgeon. Directed to proceed to San Juan, P. R., for special temporary duty on account of the outbreak of bubonic plague. **Eager, J. M.**, Surgeon. Directed to proceed to Providence, R. I., and take temporary charge of quarantine station during absence of Passed Assistant Surgeon R. H. Creel on special temporary duty. **Lloyd, B. J.**, Passed Assistant Surgeon. Detailed to represent the Service at a meeting of the Tri-State Medical Association of Oregon, Washington, and Idaho, to be

held at Portland, Ore., July 5 and 6, 1912. **Lumsden, L. L.**, Passed Assistant Surgeon. Detailed to continue investigations of prevalence of typhoid fever in rural districts of Virginia in cooperation with the State Board of Health. **McLaughlin, A. J.**, Passed Assistant Surgeon. Detailed to attend a meeting of the Committee on Standards of Water of the National Association for Preventing the Pollution of Rivers and Waterways in New York City, June 27, 1912. **Stimpson, W. G.**, Surgeon. Directed to proceed to Boston, Mass., and take temporary charge of Marine Hospital during illness of Surgeon L. L. Williams. **Sundwall, John**, Special Expert. Detailed to proceed to the Marine Hospital, Savannah, Ga., and report to Passed Assistant Surgeon C. H. Lavinder for duty in connection with the investigation of pellagra. **Walsh, W. H.**, Acting Assistant Surgeon. Granted thirty days' leave of absence, without pay, from June 15, 1912. **Williams, C. L.**, Assistant Surgeon. Directed to proceed to San Juan, P. R., for special temporary duty on account of the outbreak of bubonic plague. **Williams, L. L.**, Surgeon. Granted one month's leave of absence, on account of sickness, from June 23, 1912.

Casualty.

Acting Assistant Surgeon J. E. Brady died at Duquaque, Iowa, June 5, 1912.

Boards Convened.

Board of medical officers convened to meet at the Marine Hospital, Savannah, Ga., at the call of the chairman to examine Pharmacist L. G. Smith to determine his fitness for promotion to the grade of Pharmacist of the second class. Detail for the board: Passed Assistant Surgeon C. H. Lavinder, chairman; Acting Assistant Surgeon A. B. Cleborne, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending June 30, 1912:

Archer, William M., Jr., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Riley, Kansas, and ordered to Fort St. Philip, La., for duty. **Cullen, Charles W.**, First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort D. A. Russell, Wyo., and ordered to Fort Constitution, N. H., to relieve Contract Surgeon A. C. Heffenger, who, upon being thus relieved, will report by letter to the Surgeon General for annulment of contract. **Gibson, Parul W.**, Lieutenant, Medical Corps. Granted three months' leave of absence, about August 1, 1912. **Grissinger, Jay W.**, Captain, Medical Corps. Relieved from duty at Fort Des Moines, Iowa, and ordered to the Soldiers' Home, Washington, D. C., for duty. **King, Charles T.**, Lieutenant, Medical Corps. Relieved from duty on the transport *Sherman*, and on arrival of transport at Manila, P. I., about September 5, 1912, will report for duty in the Philippines Division. **Kirk, Norman T.**, First Lieutenant, Medical Reserve Corps. Ordered to active service and assigned to temporary duty at the Soldiers' Home, Washington, D. C. **Priest, Howard**, First Lieutenant, Medical Reserve Corps. Ordered from the Philippines Division to the Letterman General Hospital, San Francisco, Cal., for observation and treatment. **Purviance, William E.**, Major, Medical Corps. Granted thirty days' leave of absence. **Slater, Ernest F.**, First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort St. Philip, La., and ordered to his home; granted thirty days' leave of absence, and at expiration of leave, honorably discharged from the service, his services being no longer required. **Trinder, John H.**, First Lieutenant, Medical Reserve Corps. Orders revoked which directed him to proceed to Jefferson Barracks, Mo., for temporary duty. **Waring, John B. H.**, Lieutenant, Medical Corps. Ordered to Jefferson Barracks, Mo., for temporary duty. **Weed, Mark D.**, Lieutenant, Medical Corps. Relieved from duty on the transport *Thomas* and on arrival of transport at Manila, P. I., about October 5, 1912, will report for duty in the Philippines Division. **Whitmore, Eugene R.**, Major, Medical Corps. Ordered to Camp of Instruction, Florida Militia, State Camp Grounds, near Jacksonville, July 6 to 14, 1912.

The following officers were appointed first lieutenants in the Medical Corps to rank from the dates opposite their names: **James E. Baylis**, May 28th; **Harry H. Blodgett**, May 7th; **Thomas W. Burnett**, May 23d; **Charles R. Castlen**, May 20th; **Philip B. Connolly**, May 10th; **Michael A. Dailey**, May 12th; **Johnson F. Hammond**, May 16th; **Chester R. Haig**, May 19th; **William E. Hall**, May 21st; **Robert M. Hardaway**, May 25th; **Thomas E. Harwood, Jr.**, May 9th; **Howard L. Hull**, April 29th; **John G. Ingold**, May 17th; **Frederick C. A. Kellam, Jr.**, May 15th; **Kerwin W. Klinard**, May 24th; **Douglas W. McEnery**, May 30th; **Harry R. McKellar**, April 28th; **Hew B. McMurdo**, May 22d; **Shelley U. Marietta**, May 1st; **John W. Meehan**, May 31st; **William B. Meister**, April 27th; **Alvin C. Miller**, May 18th; **Leopold Mitchell**, May 13th; **Omar H. Quade**, May 4th; **Guy L. Qualls**, May 27th; **Thomas E. Scott**, May 5th; **John W. Sherwood**, May 26th; **Robert Skelton**, May 3d; **Leeson O. Tarleton**, April 30th; **John H. Trinder**, May 20th; **Samuel J. Turnbull**, May 11th; **Alfred P. Upshur**, May 8th; **Harry H. Van Kirk**, May 2d; **Charles M. Walson**, June 1st; **Adna G. Wilde**, May 14th; **Neal N. Wood**, April 26th.

Births, Marriages, and Deaths.

Married.

Brown—Suydam.—In New Brunswick, N. J., on Saturday, June 22d, Dr. Frederick L. Brown and Miss Esther Suydam. **Clifton—Burgess.**—In Northampton, Mass., on Saturday, June 22d, Passed Assistant Surgeon Alfred Lee Clifton, United States Navy, and Miss Gladys Burgess. **Deane—Lewis.**—In West Orange, N. J., on Thursday, June 27th, Dr. Harry Tenison Deane, of New York, and Miss Beatrice Carolyn Lewis. **Frantz—Graft.**—In Worthington, Pa., on Saturday, June 22d, Dr. Jacob Paul Frantz, of Philadelphia, and Miss Mary Hay Graft. **Keyes—Fenton.**—In Charleston, W. Va., on Monday, June 17th, Dr. Harold Brown Keyes and Miss Fenton. **McBurney—Moran.**—In New York, on Tuesday, June 18th, Dr. Malcolm McBurney and Miss Helen Dorothy Moran.

Died.

Birch.—In Port Carbon, Pa., on Monday, June 24th, Dr. Thomas J. Birch, aged seventy-four years. **Brueckner.**—In Newark, N. J., on Monday, June 24th, Dr. Charles Henry Brueckner, aged thirty-six years. **Collins.**—In Rochester, N. Y., on Saturday, June 22d, Dr. Newton M. Collins, aged fifty-two years. **Deale.**—In Washington, D. C., on Wednesday, June 19th, Dr. Henry B. Deale, aged fifty years. **Devlin.**—In New York, on Wednesday, June 26th, Dr. Robert J. Devlin, aged fifty-one years. **Douglass.**—In Alliance, Ohio, on Friday, June 21st, Dr. James A. Douglass, aged fifty-three years. **Hall.**—In Atlanta, Ga., on Saturday, June 22d, Dr. James P. Hall, aged sixty-eight years. **Hanawalt.**—In Des Moines, Iowa, on Wednesday, June 19th, Dr. George P. Hanawalt, aged seventy-six years. **Hill.**—In Nome, Alaska, on Friday, June 21st, Dr. Edmund Enquist Hill. **Johnson.**—In Dundee, N. Y., on Wednesday, June 19th, Dr. Dempster A. Johnson, aged seventy-nine years. **Jones.**—In Ashland, Va., on Friday, June 14th, Dr. Callom B. Jones, aged seventy years. **Kenner.**—In Hopkinsville, Ky., on Tuesday, June 25th, Dr. A. Kenner, aged sixty-nine years. **Lucas.**—In Currie, N. C., on Tuesday, June 18th, Dr. George F. Lucas, aged sixty-five years. **Oliver.**—In Los Angeles, Cal., on Sunday, June 16th, Dr. Alonzo B. Oliver, of Memphis, Tenn. **Purdum.**—In Shepherdsville, Ky., on Wednesday, June 19th, Dr. James F. Purdum, aged sixty-two years. **Puron.**—In Llanes, Spain, on Sunday, June 9th, Dr. Juan Garcia Puron, aged fifty-eight years. **Reynolds.**—In Marietta, Ga., on Tuesday, June 18th, Dr. Homer V. Reynolds. **Scofield.**—In Bemus Point, N. Y., on Tuesday, June 25th, Dr. Earl A. Scofield, aged fifty-six years. **Strickler.**—In Washington, D. C., on Monday, June 17th, Dr. Melchior B. Strickler. **Wales.**—In Wilmington, Del., on Tuesday, June 25th, Dr. John Patton Wales, aged eighty-one years.

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New York Medical Journal

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VOL. XCVI, No. 2.

NEW YORK, JULY 13, 1912.

WHOLE No. 1754.

Original Communications.

THE DIRECT TREATMENT OF SYPHILITIC DISEASES OF THE CENTRAL NERVOUS SYSTEM.*

A Preliminary Communication,

BY HOMER F. SWIFT, M. D.,
New York,

AND ARTHUR W. M. ELLIS, M. B.,
New York.

The involvement of the central nervous system in lues is one of the most important phases of the disease. This involvement is not only of interest in the tertiary and parasyphilitic periods, but is also one of the striking features of the early stages. It is the object of this communication to present a preliminary report on the direct local treatment of syphilis of the nervous system.

Since the etiologic rôle of *Treponema pallidum* has been established, many mooted points in the life history of the disease have been elucidated. The early general distribution of the virus is well known. This distribution probably occurs through the blood stream, but the resting place of the spirochete is largely in the hematopoietic organs and lymph spaces; for the latter the spirochetes seem to have a special predilection. The subarachnoid space may be considered the great lymphatic sheath of the central nervous system. From it extend the perivascular lymph spaces which accompany the arteries and arterioles as far as the capillaries. The perineuronal spaces are also in direct communication with the subarachnoid space; consequently the spinal fluid, which may be considered the lymph of the central nervous system, is in intimate relation with both the vascular supply and the nerve cells.

The portion of the central nervous system which is most frequently involved in syphilis is the base of the brain between the peduncles and optic chiasm. This is the site of one of the large subarachnoid cisterns, and from this region the process easily extends along the cranial nerves and arteries. Microscopical examination of the involved vessels shows that the most intense round cell infiltration is in the adventitia, with an endarteritis as a secondary process. In a case of early syphilitic meningoarthritis, Strassmann (1) showed that the spirochetes were most numerous in the adventitia and only occasionally present in the intima. This

distribution is probably a result of the mode of invasion of the microorganisms, viz., through the perivascular lymph spaces. This peculiar vessel change, which is seen in all parts of the central nervous system, in all stages of the disease, undoubtedly indicates that the chief mode of extension of the infection through the nervous system is by the perivascular lymphatics, rather than through the blood stream.

Whether tabes is a primary degeneration of the columns, or a degeneration secondary to a localized meningitis, is not decided. The fact remains that in a majority of cases there is evidence in the spinal fluid of an irritative process, and microscopical examination frequently reveals a localized meningitis in the region of the radicular portion of the spinal nerves and corresponding portion of the cranial nerves.

Because of the peculiar anatomical conditions in syphilitic meningoarthritis, the treatment by ordinary means is quite difficult. This is probably due to the fact that there is imperfect application of the therapeutic agent through the blood stream. The most intense process is bathed only by the spinal fluid, into which there is little, if any, excretion of curative agents. Even so highly diffusible a drug as potassium iodide is not normally excreted into the spinal fluid, and the work of Flexner (2) in epidemic cerebrospinal meningitis, of Wollstein (3) in influenzal meningitis, and Lamar (4) in pneumococcus meningitis, has demonstrated that in these diseases it is necessary to introduce the specific therapeutic agent directly into the subarachnoid space to obtain curative results. The same laws, doubtless, are operative in syphilitic meningitis.

There is considerable evidence that the blood serum of treated syphilitics has curative powers. Taegge (5) noted that the milk of a syphilitic mother who had received treatment with salvarsan, had a marked curative effect on her syphilitic child. By means of seven subcutaneous injections of serum from salvarsan treated patients, Meirowsky and Hartmann (6) were able to clear up the cutaneous lesions in a congenital syphilitic child. Plaut (7) similarly treated several adults. Among these were two patients with primary lesions, one with an ulcerated throat, and one with an old, deep ulcer of the tongue. In all there was a marked improvement, but in none a complete cure. Controls treated with normal serum were unaffected and those treated with the serum of mercury treated patients were but little improved. Gibbs and Calthrop (8) treated a patient with severe secondary symptoms, using serum from salvarsan treated patients. The

*From the Hospital of the Rockefeller Institute for Medical Research.

serum was obtained from cantharides blisters. This patient had lost eight and one half pounds in eleven days before the treatment was started. With four subcutaneous injections there was a rapid resolution of lesions, and the lost weight was regained in sixteen days. At the same time the Wassermann reaction decreased in intensity. It is difficult to state whether these beneficial effects are due to antibodies or to small amounts of salvarsan which have been changed in the serum to a maximal therapeutic form. In such serums we have an ideal preparation for direct introduction into the spinal canal.

For the past eight months we have been studying the therapeutic effect of such serums when injected intraspinaly into patients with tabes and other syphilitic affections of the central nervous system. At first the serum was obtained by withdrawing blood from the patient on the day following a salvarsan treatment. Gradually the time has been shortened so that now the blood is withdrawn an hour after the intravenous injection of salvarsan or neosalvarsan. Abelin (6) has shown that his diazo reaction for salvarsan is not present more than two and one half hours after treatment. We have used the serum of syphilitic patients to make serum agar culture media for the growth of *Treponema pallidum* after Noguchi's (10) method. Cultures in media made with serum obtained before treatment grew practically as well as in that made with normal serum, while in media made with serum obtained an hour after intravenous injections of salvarsan, the spirochetes developed much more slowly or not at all. In media made with serum obtained in six to twenty-four hours after treatment, the growth approximated that in normal control tubes. From these experiments it seems that the serum has the greatest inhibitory action shortly after the injection of salvarsan.

TECHNIQUE.

Our method is to withdraw blood¹ after intravenous injections of salvarsan or neosalvarsan, separate the serum, and on the following day dilute it to forty per cent. with normal saline. It is then heated at 56° C. for one half hour. By means of lumbar puncture, fifteen c.c. of spinal fluid is withdrawn and then thirty c.c. of the diluted serum, warmed to body temperature, is slowly injected into the subarachnoid space. The foot of the bed is raised for about an hour after the treatment. Following the injection, there is frequently a slight rise in temperature, and in tabetics there are often lightning pains in the legs. These pains are more violent in the patients who have previously shown irritative symptoms. In patients other than tabetics, there is very little discomfort beyond occasional headache. The reaction has usually passed off by the following day, when the patients are allowed to be up and about. Several of the patients have spent only two days a week in the hospital; during the rest of the time they have gone about their usual vocations. At first the intervals between treatment were seven days, but it was found that the reactions following injection were too severe with such short intervals. Lately, two or three weeks have been allowed to elapse between the injections.

RESULTS.

The results of some of these treatments are as follows: Four tabetics had received repeated intravenous injections of salvarsan, in addition to mercurial treatment, with resulting symptomatic improvement and reduction in the cell count in the spinal fluid. Upon instituting intraspinal injections of their own serum obtained shortly after intravenous injections of salvarsan, the cell count promptly fell to normal, the globulin decreased in amount much more rapidly than previously, and in two of the patients the Wassermann reaction² in the spinal fluid became negative, even when 0.5 c.c. of fluid was used. In the other two patients the treatment had little effect on the Wassermann reaction. Another patient with tabes was treated from the beginning by combined intravenous and intraspinal methods. With five treatments in two and a half months, there was a drop in cells in the spinal fluid, from 130 to nine, a disappearance of the Wassermann reaction in the spinal fluid, and considerable decrease in globulin. During this time there was also symptomatic improvement.

It might be contended that in these patients the beneficial effect was due to the intravenous treatment. The fact that improvement in the condition of the spinal fluid after the institution of intraspinal treatment was more marked and more rapid than before, is at least suggestive that the change in the form of treatment had some effect. To study this effect we have used intraspinal treatment alone in certain patients. The first, a well marked tabetic, had eleven injections during a period of five months, during which time the cell count dropped steadily from forty-two to ten in a c. mm., the globulin reaction changed in intensity from a heavy precipitate to a faint haze, and the Wassermann reaction, which at first was strongly positive in 0.1 c. c. of the fluid, became weakly positive in 0.5 c. c. He then received five intravenous injections of 0.3 gramme salvarsan at weekly intervals. At the end of this time the cell count was nineteen, the globulin reaction was stronger, but there was no change in the intensity of the Wassermann reaction. In two patients the effect of injections of normal serum alone has been tried. In one patient with six treatments there occurred a decrease in cells in the spinal fluid from fifty-five to ten and later a rise to seventeen, the globulin reaction became weaker, but the Wassermann reaction became stronger. In the second case during four treatments the cells dropped from fifty-five to fifteen; with four more treatments they returned to fifty. Then serum, which was withdrawn from another patient one hour after treatment, was used and the cells dropped promptly to nine. The effect of this one treatment was more marked than that which followed the eight injections of normal serum. There has been practically no effect on the globulin content or Wassermann reaction. Two other patients, one with tabes and one with chronic meningitis, having only intraspinal treatments, have shown a steady decrease

¹In performing the Wassermann reactions, one half the quantity of the various reagents originally described in the Wassermann reaction are used. In the spinal fluid quantitative estimations of the antibody content are made; 0.5, 0.4, 0.3, 0.2, 0.1, and 0.05 c.c. of the fluid are the quantities of spinal fluid employed. It has been found that reactions are frequently positive with the large quantities when they are negative with the smaller amounts.

²The blood is drawn directly into large tubes by means of a MacRae venous puncture needle.

in cell count in the fluid, but they have been under observation too short a time to determine the final result.

The lymphocytosis and increased globulin content of the spinal fluid are more easily affected than the Wassermann reactions. It has been our experience that it is easier to affect the Wassermann reaction in the spinal fluid in patients in whom the reaction in the blood is negative at the beginning of treatment, than in those giving a positive reaction. In patients with secondary syphilitic meningitis, the intraspinal treatments alone are not sufficient to hold the disease in check. Fortunately, however, in this type of syphilis of the nervous system, the intravenous injections of salvarsan, combined with mercury and iodides, are very efficient, acting more quickly than in the later stages where sclerotic changes in the vessels are more marked.

THE USE OF SALVARSAN AND NEOSALVARSAN.

Naturally the idea of injecting salvarsan directly suggests itself. We have tried this in a number of monkeys. Dilutions of one to 100 to one to 10,000 have been combined with monkey serum and injected intraspinaly. With the lower dilutions lumbar puncture two days after the injections showed marked cellular reactions in the spinal fluid. In one animal permanent paralysis of the legs occurred. With all dilutions the reactions seemed too marked to warrant the intraspinal application of salvarsan in patients. This irritation may be due to the alkaline condition of the drug, for intraspinal injections into monkeys of neosalvarsan, diluted with normal monkey serum, have caused much less marked reactions. Dilutions of one to 5,000, one to 10,000, and one to 30,000 have been injected with only moderate cellular reaction; in fact, only a little more marked than was shown by the control animal in which diluted monkey serum alone was used. The cells in the fluid were largely endothelial, a type of reaction which we have observed in the spinal fluid of a patient after an intraspinal injection of normal human serum.

In one patient we have injected 0.5 milligramme neosalvarsan, diluted with twelve c. c. of normal human serum and eighteen c. c. of normal saline, intraspinaly, with practically no subsequent reaction. Ten days later he was given one milligramme neosalvarsan, diluted in the same manner, intraspinaly. There was no reaction beyond slight lightning pains, lasting a few hours. Perhaps, by this means, we shall be able to reinforce the good therapeutic effect of serum obtained after intravenous treatment.

CONCLUSIONS.

While the series of cases here reported is small, we feel that the results up to the present are of sufficient value to warrant a continuation of the work and its institution on a larger scale. Doubtless the best results can be obtained from the intravenous treatment with salvarsan or neosalvarsan, combined with intraspinal injections of the patient's own serum, possibly with the addition of small amounts of neosalvarsan. It is hoped that the treatment here outlined will be of aid in these forms of syphilis, the treatment of which has formerly been so unsatisfactory.

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SIXTY-SIXTH STREET AND AVENUE A.

INDICATIONS FOR REMOVAL OF THE FAUCIAL TONSILS.*

BY HAROLD HAYS, A. M., M. D.,
New York,

Assistant Surgeon in Otolaryngology, New York Eye and Ear Infirmary, etc.

The basis of this paper is founded on my experience in the removal of the faucial tonsils at the Infirmary. Philanthropin Hospital, Hebrew Infant Asylum, and in my own private practice. This comprises a series of some 300 cases, in which, on examination, a number of points were taken into consideration, namely, the size of the tonsil, whether it was diseased, its relation to the rest of the throat, and its association with other local or general conditions.

Value of the faucial tonsils. Whether the tonsils have any value as a protective agent or otherwise, is a much mooted question. However, I believe the general tendency to-day is toward the belief that in infancy and early childhood, the tonsils play a very important rôle in warding off various infections. This is my personal belief, also, and therefore I have made it a general rule not to operate for this condition upon any child under the age of four years unless there is some special and definite indication for doing so, such as chronic suppurative of the ears, recurrent tonsillitis, hypertrophied and suppurative glands of the neck, etc.

R. H. Good¹ believes that the tonsil has an immunizing function early in life. Such a property of the tonsil is not easily proved; but that it has apparently no function after the first few years is almost certain, as Good says; for even the total removal of them, even so called healthy tonsils, has no deleterious effects on the child, and in many cases the tonsils atrophy or diminish in size.

That the tonsil evidently has some function in early childhood may readily be assumed because of certain anatomical, physiological, and pathological facts. Anatomically they are situated in such a position in the throat that they are bound to act as barriers to the entrance of pathogenic bacteria into deeper and more dangerous regions. Normally, slightly protruding from between the pillars of the fauces, the exposed surface comes in contact with all the secretions, air, and débris which may be taken in through the oral or nasopharyngeal cavities. For a moment only, perhaps, the bacteria laden substance applies itself to these parts. But even such a short time is sufficient, in many instances, to allow the organisms to lodge there permanently. This is readily proved by sections of

*Read before the Harlem Medical Association, March 6, 1912.

¹R. H. Good: Early Immunization, the Essential Function of the Tonsil, *Laryngoscope*, June, 1909.

diseased tonsils which show all sorts and varieties of organisms. Two other important anatomical and histological points must here be taken into consideration, first, the cryptal arrangement of the mucosa which gives a large absorptive area, and, second, the lymphoid structure of the organ which makes it admirably suited for the destruction of microorganisms.

Physiologically, the tonsil has been proved to have a function, through the painstaking investigations of Wood,² of Philadelphia, and Jonathan Wright,³ of New York. Both these investigators have shown that the epithelium of the tonsil has the property of carrying foreign matter into the depths of the crypts and that such material in many instances traverses the cryptal lining, and that offending material is destroyed or absorbed by the numerous lymphocytes of the parenchyma. Such investigations have also shown the relation of the tonsil to the lymphatics of the neck, particularly to the so called "tonsillar gland," lying just anterior to the sternocleidomastoid muscle, below the angle of the jaw. This node is in direct communication with the superficial and deep cervical glands which often become enlarged at the time of a tonsillar infection. Moreover, the removal of the offending tonsil in such cases will often assist in curing a suppuration of these glands. This was sufficiently proved to me in the following case: A boy of seven years had been in the Philanthropin Hospital, off and on, for two years, suffering from suppurative, tuberculous glands of the neck. Three operations for their removal had been performed, but there was still a large mass of glands on either side and a dirty purplish blue fistula on the right. I enucleated both tonsils thoroughly, and inside of two weeks the fistula had closed and the glands had subsided considerably.

Pathologically, the function of the tonsil is proved purely in a negative way. Almost every tonsil which is removed has been found to be the seat of disease. In fact, a normal, healthy tonsil is a curiosity. In the first few years of life, the injury they receive by constant reinfections predisposes the majority of tonsils to a distinct hypertrophy of the glandular tissue. The majority of infants before the second year suffer more or less with inflamed cervical glands, which are most prominent in connection with the teeth and the tonsils. As time goes on many of these glandular inflammations subside, not always because the infection in the tonsil disappears, but because the organs having hypertrophied, they are better able to take care of themselves. However, there comes a time when the tonsils become "worn out" and when they are so pathologically altered that they can perform no physiological function. In such instances they are a distinct menace and should be removed.

My purpose in making these remarks is to show that apparently the tonsil has some function, and therefore should not be removed in the early years of life, unless it conforms to one of indications outlined in the following pages:

Varieties of tonsils. Tonsils may be classified in

many ways, but for simplicity I have arranged the varieties of tonsil under seven headings.

1. Varieties in size.
2. Varieties in form.
3. The chronically inflamed tonsil.
4. The tuberculous tonsil.
5. The tonsils in relation to the individual throat.
6. The tonsil in relation to local diseases.
7. The tonsil in relation to general diseases.

1. *Varieties in size.* The tonsil may vary in size, according to the age of the individual and the personal characteristics of the patient, from an organ the size of a hazelnut to the size of a walnut. The size of the tonsil is of very little importance in the determination of its removal, except in those cases where it causes obstruction to swallowing and respiration.

The small tonsil, deeply buried between the pillars of the fauces, in fact so neatly hidden that it can only be seen when the patient is made to gag, has been shown by Hurd⁴ to be a particularly dangerous organ. From a series of sections examined microscopically, particularly from cases in which there was an associated enlargement of the glands of the neck, it was discovered that these glands were the seat of tuberculosis. Such a state of affairs is of great importance when one considers the assertion of Wood⁵ that there is a definite lymphatic connection from such a tonsil, through the deep cervical lymphatics to a gland at the apex of the pleura, situated just above the clavicle, the infection being carried by this route into the lungs.

Small, buried tonsils associated with enlarged cervical glands, should always be completely enucleated.

2. *Varieties in form.* The tonsil varies greatly in form. The length, breadth, or consistence is not of as great importance as the regularity of its exposed surface. There are one or two varieties in form which may necessitate the removal of the organ, disregarding other causes. For example, the uneven, ragged, soft, mushy tonsil, consisting of a mass of irregular tissue, loosely connected to a basement framework, is a tonsil, whether large or small, which should be removed; for, as a rule, the crypts are deep and irregular and are readily open to infection.

3. *The chronically inflamed tonsil.* This variety of organ is usually the result of repeated attacks of inflammation resulting from the exanthemata such as measles, scarlet fever, and diphtheria, or from streptococcus infection (acute tonsillitis). The tonsil enlarges and usually has a deep reddish color which continues over the palate and on to the posterior pharyngeal wall. These tonsils are usually firm in consistence. The child's health suffers as a result of the infectious process. Such tonsils, on account of their effect on the general health should be removed.

There is one variety of the chronically inflamed tonsil which is very commonly seen and which necessitates removal. I refer to that variety which has large, widely open crypts which are constantly

⁴Hurd and Wright: The Clinical Diagnosis of Tuberculosis of the Tonsil, *Medical Record*, June 26, 1909.

²George B. Wood, *Annals of Otolaryngology, and Laryngology*, March, 1909.

³Jonathan Wright: Résumé of Some Work in Infection through the Tonsillar Crypts, *Laryngoscope*, May, 1909.

⁵George B. Wood: The Importance of the Upper Respiratory Tract in the Etiology of Cryptogenic Infections, Especially in Relation to Pleuritis, *Annals of Otolaryngology, and Laryngology*, December, 1908.

filled with cheesy débris. At first sight nothing but a large, deeply red tonsil is seen. But if the patient is made to gag so that the organs are squeezed out from between the pillars by the action of the palatal muscles, the crypts can be made to open up wider, and dirty, yellow material is squeezed out. Such material will never be absorbed and will never come away by itself. Even cleansing of the crypts, which is a very difficult matter in children, does not often give a satisfactory result.

4. *The tuberculous tonsil.* Under section one, I explained that the small, buried tonsil is often the seat of tuberculosis. Such a state of affairs may not be evident by examination of the tonsil itself, but may be suspected if there are enlarged cervical glands. Wherever a tuberculous focus is discovered in any part of the body, be it in the lungs or elsewhere, associated with enlarged cervical glands, either large, or deeply buried, tuberculosis of these glands should be thought of. Last year, a little girl of eight years was brought to my office, suffering from chronic tonsillar inflammation. Six months previous to this visit a tuberculosis of the hip joint developed and, when she came to see me, her hip was encased in plaster of Paris. To my mind there was no doubt that her tonsils were tuberculous, and that the infection of her hip had taken place in this way. I explained all this to the mother, but nothing more, as yet, has been done in the matter.

Except for evident signs of tuberculous ulceration, there is no way of telling positively whether a tonsil is the seat of tuberculosis or not, until after it is enucleated and examined microscopically. But, from all the positive clinical data at hand, one may venture the assumption that a tonsil associated with enlarged cervical glands in a child whose health is not up to par, is a source of systemic infection, and that the child is better off after the tonsil is excised.

5. *The tonsil in relation to the individual throat.* One of the most important points in my determination as to whether a child should have his tonsils removed or not, aside from the consideration of a diseased condition of the organ itself, its relation to local diseases or general conditions, is the relationship of the size of that tonsil to the child's throat. The specialist, and even more often the general practitioner, is asked to examine the throat of a child where the parent seems to think that the tonsils are too large, or where the child has been sent home from school with a diagnosis made by the school physician. The size of the tonsils is of very little importance in comparison with other factors which must be taken under advisement. A large tonsil in a large throat may be a distinct menace; and also a small tonsil in a small throat may be as great a source of danger. The problem presented to us is not whether the tonsil is diseased, but whether those tonsils cause an obstruction; or whether they would cause obstruction if they did become chronically diseased; or whether in the course of the acute exanthemata they would not swell up to such a degree as to cause serious obstruction to respiration. Many of these tonsils are removed for prophylactic reasons and rightly so. In very young children, one must exercise a discretionary power in the matter and, whenever it is

possible, it is a wise policy not to operate until the child is over four years of age.

However, there is one symptom complex of childhood which, as a rule, demands operative interference. This symptom complex comprises a high arched palate, very narrow nasal orifices, a thin pinched expression of the face, mouth breathing, adenoids in the nasopharynx, and tonsils in the throat. I have seen such patients in whom the adenoids having been removed, nasal respiration was still impeded, the result being a still more undeveloped nose and a higher maxillary arch. The tonsils were found to bulge so greatly into the nasopharynx that there was practically no space for breathing. When the tonsils are removed, the change in the children is often remarkable. In most of these cases the tonsils are not excessively large, but in relation to the throat from which they came, they caused much more annoyance than many a larger one taken by itself.

All tonsils, large or small, which seriously interfere with respiration, should be removed.

6. *The tonsil in relation to local conditions and diseases.* The most important local diseases and conditions in which the tonsils play an important rôle are: a. Mouth breathing; b. high, arched palate; c. decayed teeth; d. nasopharyngitis; e. chronic cough and hoarseness; f. middle ear catarrh; g. suppurative conditions of the ear; and, h. hypertrophied and suppurative glands of the neck.

a. *Mouth breathing.* As a rule, a child who breathes through the open mouth, is supposed to have adenoid vegetations in the nasopharynx. Although this is so in many cases, we have all seen numerous instances in which the removal of the adenoids has not relieved the condition. Where the tonsils are unusually large or where the child's throat is unusually small or where the nasopharynx is narrow and shallow, the effect of the projection of the tonsil into the nasopharynx may seriously interfere with nasal respiration. Tonsils causing such a condition, must be removed.

b. *High, arched palate.* However, in that class of cases presenting the high, arched palate symptom complex, even the most thorough cleaning out of the throat, will not bring about wide enough nasal orifices to allow proper breathing. Such children need the services of the orthodontist, who, by spreading the upper jaw, is able to bring about remarkable results, in some instances widening the floor of the nose as much as three quarters of an inch.

c. *Decayed teeth.* The relation of the tonsils to decayed teeth is a far more important one than is generally supposed. The subject has been thoroughly studied by G. Hudson Makuen⁶ and G. H. Wright.⁷ Makuen maintains that the tonsils affect the teeth in three ways:

1. By impairing general nutrition; 2, by contributing very largely to the local invasion of the teeth by the numerous bacteria that invade their crypts; 3, by their pressure interfering with the alignment of the teeth and with the normal development of the maxillary bone.

⁶G. H. Makuen: The Fauical Tonsils and the Teeth, *Journal of the American Medical Association*, June 19, 1909.

⁷G. H. Wright: Functional Relation of the Tonsils to the Teeth, *Laryngoscope*, July, 1909.

I should say that the constant play of infectious matter around the sockets of the teeth may be of great importance. However, the possible pressure of enlarged and solid tonsils on the unerupted teeth means a great deal; for by such pressure on the alveolar processes the jaw may likely be foreshortened and a deformed palate result. Such a state of affairs affects the entire system of the child, meaning blood impoverishment, and the usual attendant symptoms.

d. *Nasopharyngitis.* One of the commonest complaints of which one hears is that not only is the child a mouth breather, but his nose is constantly running, and he coughs and swallows a large amount of mucus. This mucus is usually the result of an inflammatory condition of the posterior nares and nasopharynx. On examination, a large mass of thick, dirty mucus can be seen clinging to the posterior pharyngeal wall and by forcing the child to gag, one can see the attempt made to squeeze more mucus from the nasopharynx. Even after the adenoids are removed and the nasal condition is corrected, the nasopharyngitis persists. This is often due to tonsils, large or small, which are bacteria laden and cause constant reinfection of these parts. This usually occurs in the throats of children where the nasopharynx is small, often in connection with a high, arched palate and a narrow nose.

e. *Chronic cough and hoarseness.* These symptoms may be the result of associated conditions. But one often sees children with moderately large tonsils, often with adenoids, in whom a peculiar dull, muffled cough develops, or in whom a sudden, persistent hoarseness occurs. This hoarseness is not constant, but after prolonged use of the voice, the voice seems to "rasp" and break. The removal of the tonsils will often cure such a condition. Examination of the vocal cords in these cases shows little or nothing. Probably it is caused by the accompanying nasopharyngeal condition or by a very low grade infection from the tonsil and surrounding parts.

f. *Middle ear catarrh.* I firmly believe, as do also most of my colleagues, that many a case of deafness in later life, to a lesser or greater extent could have been inhibited in childhood, if proper measures had been taken to arrest a chronic catarrh of the mucosa of the nose and throat. In a paper read at the Academy of Medicine nearly two years ago, I showed by a clinical study of some seventy cases of chronic catarrhal otitis media, that there was an abnormality of the nose or throat which demanded treatment, operative or otherwise, in almost every instance. "In this series, the tonsils indirectly affected the ears in ten cases. They were hypertrophic in six cases, atrophic in four. . . . Beside the question of infection and chronic hypertrophy of the pharynx, the enlarged tonsil may cause obstruction by the pushing backward of the posterior pillar of the fauces and by interfering with the muscular action of the tubes."⁸

The association of tonsils with a beginning catarrhal deafness, is a positive indication for their removal.

g. *Suppurative conditions of the ear.* The association of tonsils and adenoids with acute and chronic infections of the ears of children, has long been recognized. Not only is an acute infection the result of an inflammatory condition of these parts which reaches by contiguity up the Eustachian tube, but in the majority of cases, it is almost impossible to cure a chronic discharge from the ear until the diseased parts are eradicated. In a series of cases studied in a scarlet fever hospital in Boston a few years ago, in every case in which a discharge from the ear took place, tonsils and adenoids were found to be present. In a series of cases studied and operated in by me at the Hebrew Infant Asylum, in many cases where discharges had gone on for months and years, the discharge ceased as soon as the tonsils and adenoids were removed.⁹ Moreover, at the New York Eye and Ear Infirmary, children of all ages are brought to us with discharging ears which are usually cured by proper attention to the throat.

As a rule, the adenoid plays a greater part than the tonsil in these cases, particularly if there are vegetations in the fossa of Rosenmüller. But the best proof that the adenoids are not the sole cause of the trouble is demonstrated in those cases in which there are no adenoids or where the adenoids have been removed and the discharge still persists, and, where, upon the enucleation of the tonsil, the discharge ceases.

h. *Hypertrophied or suppurative glands of the neck.* In the course of this paper I have often spoken of the association of the tonsil with enlarged cervical glands. This is so common a condition, and one very often overlooked, that I feel it my duty to state emphatically once again that tonsillectomy should be performed in all children with enlarged or suppurative glands in the upper cervical triangle, where other causes for such a condition may be ruled out. This should be done whether the tonsils are large or small, atrophied or hypertrophic. If such a rule were followed, many a case of tuberculous glands of the neck would be prevented.

7. *The tonsil in relation to general diseases and bodily health.* The constant reinfections of the tonsils by various microorganisms, pathogenic and otherwise, often results in great impairment of the general health of the child. This lessened resistance and lowering of general body vitality make the little patient more susceptible to general infections of various sorts. The digestive system, the respiratory system, and the circulatory system may all become impaired, leading to a chronic gastroenteritis or bronchitis or a severe grade of anemia. It is wonderful to see the remarkable changes in these children after the tonsils have been removed. I have seen dozens of puny children who were decidedly undeveloped, have their entire constitutions changed for the better. There have been cases in which the small amount of adenoid tissue must have played a secondary rôle. This subject has been studied in full by L. C. Deane¹⁰, Dabney¹¹.

⁸Harold Hays: *Diagnostico y Tratamiento de la Rinitis, Mediastinitis, Purulenta, Crónica en los Niños*, *Chronica Medica Chirurgica de la Habana*, Junio, 1911.

¹⁰L. C. Deane: *The Fauical Tonsils Considered from a Medical and Surgical Standpoint*, *California State Journal of Medicine*, March, 1909.

¹¹S. G. Dabney: *Chronic Discharge of the Fauical Tonsils*, *Kentucky Medical Journal*, December 1, 1909.

⁹Harold Hays: *Observations on the Pathological Conditions of the Nose and Throat, with Special Reference to the Tubal Regions, Associated with Chronic Catarrhal Otitis Media*, *Annals of Otolaryngology, Rhinology, and Laryngology*, June, 1910.

Mayer¹², Marcelli¹³, and others. All these authors agree that diseased tonsils play a very important part in the general infections of children and particularly in tuberculous infections.

I cannot conclude this paper without referring to the importance of tonsillar infections in certain eye diseases such as conjunctivitis and iritis of long standing. Whether the connection is a purely local one through the lymphatics or a general one through the blood, I do not know. However, I have had a number of such eye cases referred to me where the eye condition became entirely cured after the tonsils had been removed. In the last case, one of iritis, immediately after the operation while the inflammation in the throat was very severe, the eye condition was greatly aggravated. But this subsided as soon as the inflammation in the throat subsided and now this girl is perfectly well.

In a paper on the Present Status of the Tonsil Operation, Richards states:¹⁴ "From a collective investigation (57 replies) the indications for removal of the tonsils were as follows: Recurrent tonsillar abscess or quinsy; recurrent simple tonsillitis; diseased crypts with or without hypertrophy; the co-existence of rheumatism and tonsillitis; mouth breathing accompanied by hypertrophied tonsils; general toxemia of tonsillar origin; impaired nutrition; and systemic dysuria.

CONCLUSIONS.

As a result of these studies, I have come to the following conclusions:

1. That the tonsil has a definite function in early childhood.
2. That tonsils should not be removed unless there is some especial indication before four years of age.
3. That small, buried tonsils associated with enlarged cervical glands should always be completely removed unless some other definite cause is found for the condition.
4. That tuberculosis is often found to be of tonsillar origin.
5. That one of the most important points to be considered in judging whether a tonsil should be removed or not, is the size of that tonsil in relation to the individual throat.
6. All tonsils, large or small, which seriously interfere with respiration, should be removed.
7. That many local pathological conditions are caused by diseased tonsils.
8. That many cases of middle ear catarrh could be prevented by removal of the tonsils.
9. That there is a distinct relationship between the tonsils and many general diseases.
10. And, finally, that the promiscuous removal of the tonsils of children without the finding of some associated, pathological condition, is pernicious; and that all cases demanding operative interference should be carefully selected.

11 WEST EIGHTY-FIRST STREET.

¹²E. Mayer: Diseased Tonsils, *Journal of the American Medical Association*, August 28, 1909.

¹³A. R. Marcelli: The Tonsil as Entrance for the Tubercle Bacillus; Its Relation to the Glands of the Throat, *Archivio italiano di laringologia*, October, 1909.

¹⁴George L. Richards: Present Status of the Tonsil Operation, *Annals of Otolaryngology, Rhinology, and Laryngology*, December, 1911.

A STUDY OF INFANT MORTALITY IN ROCHESTER: THE RELATION OF MARKET MILK THERETO.

By JOHN R. WILLIAMS, M. D.,

Rochester, N. Y.,

Secretary, Milk Commission Medical Society, County of Monroe.

The problem of high infant mortality is one of the serious questions which is engaging the attention of sanitarians. Since a very considerable proportion of these deaths are due to disturbances of digestion or nutrition, and since raw cow's milk enters quite extensively into the diet of little children, it is generally assumed that infant mortality statistics furnish a comparatively reliable index of the quality or integrity of the public milk supply. Accordingly, in a general study of the municipal milk problem which the writer has been making during the past year, the problem of infant mortality in its relation to the use of market milk was made the object of special investigation. The difficulties in the way of this study were very great and the data herein submitted, because of their incompleteness and insufficiency, must be regarded as suggestive rather than as authoritative. The following investigations were made:

1. A critical examination of the infant mortality data of this city for the past eleven years.
2. A personal investigation of all deaths in children under five years of age who were reported to have died of a disease of the gastrointestinal tract, between August 1, 1910, and August 1, 1911.
3. Fifteen sections of the city, each containing from 100 to 600 homes, and representing the different social and economic conditions of society, were visited. From this source information was secured relating to (a) the number of children under one year of age and the kind of food and method of feeding employed, (b) the use of market, certified, and condensed milks and of ice. A number of other studies of lesser importance were also undertaken. These will be referred to later.

A critical examination of the mortality statistics over a period of years shows that a large number of children die annually from causes which bear no relation to feeding. Group 4 of Table I illustrates this fact. Herein are compiled deaths due to accidents, congenital diseases, and other deaths the causal agents of which are not transmitted in food. It is probable that these factors play a larger part in infant mortality than is indicated by this table or than is generally believed, for, out of 175 patients who died of gastrointestinal disease during the past year, a definite history of premature birth or congenital disease was obtained in fifty-four instances, although this does not appear on the death certificate.

In Group 3 of this table are collected those deaths from communicable diseases where milk is only remotely concerned as a factor. We have no reason for believing that pneumonia, bronchitis, measles, etc., are ever carried in milk. It has been suggested that bad milk may weaken the body so as to make it possible for these diseases to develop, and in this way it may be considered a remote factor in this group. It will be noted, however, that

peculiarly favorable for this study because the public milk supply, owing to the excessive and protracted heat, was unusually bad and the infant mortality was abnormally high.

Most of the deaths occurred in the families of the poor or very poor. In visiting upward of 200 homes it was found that seventy-seven families had moved within the year, suggesting the transient or unsettled character of the home. In fifty-four homes it was found that the parents were away at work, and where there were children, these were left either on the street or with the neighbors. Most of the information secured was furnished by the attending physicians. As will be noted by examination of Table II, a very considerable proportion of the deaths occurred in the foreign elements. It was discovered that many of these children received little medical care other than that crudely given in the home and neighboring drug-store. The doctor perfunctorily witnessed the end and signed the death certificate. As will be noted in the table, a large number of children die unattended by any physician, these cases being referred

were fed exclusively on breast milk, twenty-seven others were also nursed, but this was supplemented by some artificial food. Twenty-eight of the infants were fed solely on cow's milk, in many instances certified milk. Fifty-six of the babies were fed on proprietary foods of various kinds, seventeen being condensed milk. The fact that so many breast fed babies die supports the view that there are other more serious factors than the quality of the food which enters into the problem of infant mortality. Without further discussion of the data which have to do with feeding and home hygiene, examination of the table shows that a very considerable proportion of the children who die of bowel disease are inherently weak and are poorly born. Thirteen of them were of premature birth; in forty-one other cases there was obtained a positive history of congenital disease. To the cursory examination of the physician, the parents of fourteen of these children exhibited gross evidence of disease, chiefly gonorrhea and tuberculosis. It is obvious that any and all causes which directly lower the vitality of the parents, particularly the

TABLE II.

Showing important factors in causing death of 246 Rochester children who were reported to have died of diseases of digestion or nutrition, from August 1, 1910, to August 1, 1911.

		Nationality				Method of feeding																
Age	Total number	American	Italian	German	Other foreign	Breast fed	Breast fed and cow's milk	Breast fed and proprietary foods	Cow's milk	Proprietary foods	Condensed milk solely	All varieties of food	Improper feeding	Food having nothing to do with death	Bad care and neglect	Flies as contributing cause	Dirty homes	Parents diseased	Baby diseased at birth	Premature birth	Baby healthy at birth	No records obtainable from parents' cases, etc.
Under two weeks.....	15	8	3	3	1	3	0	0	0	0	0	0	0	0	0	0	0	1	8	3	0	1
Two weeks to one month.....	16	11	2	1	2	4	0	0	3	1	4	0	0	0	2	0	1	0	1	0	1	0
One to two months.....	37	18	7	5	7	2	2	2	4	9	9	3	1	16	2	11	1	12	4	2	6	2
Two to four months.....	37	17	10	3	7	4	4	3	7	4	9	7	5	2	12	0	11	1	11	3	4	1
Four to six months.....	37	15	8	1	13	5	3	1	3	8	6	4	20	1	18	2	16	3	6	0	3	8
Six months to one year.....	65	30	20	6	9	12	4	4	13	0	3	7	28	2	22	3	20	2	5	2	13	11
One year to two years.....	30	14	8	3	5	5	3	2	2	1	5	7	9	0	11	2	10	1	3	0	3	2
Two years to five years.....	9	5	0	1	3	5	0	0	1	0	1	6	0	2	1	0	1	0	0	0	0	1
Totals	246	118	58	24	46	35	16	17	31	40	23	27	87	7	75	9	71	14	41	13	32	50
Deaths in which gastrointestinal disease was contributory cause.																						
Under one year.....	48	14	25	3	6	8	..	4	3	1	5	16	18	1	26	..	24	3	11	1	13	7
One year to five years.....	8	3	2	2	1	..	1	1	1	2	..	1	..	2	..	..	..	2	1	..	4	
Totals	56	17	27	5	7	8	1	5	4	3	5	17	18	3	26	..	24	3	12	2	17	11

to the coroner; and, while no direct evidence on the point was secured, and these are listed in the table under "no records obtainable," beyond all question they should be grouped with the seventy-five children who died from bad care and neglect. It should be said that the data in this table are positive information only, and the causes given were cited by the physicians as being the most important factors leading to the sickness and death. Where definite information could not be had, no record was made, hence the table does not account for all the factors, either positively or negatively, which may have had bearing on the life or death of the child. If the first group, or those who died directly from gastrointestinal disease is examined, it will be seen that beside bad care and neglect which killed seventy-five out of 200, in eighty-seven instances there was a definite history of improper feeding. This quite frequently meant the irregular and too frequent feeding of improperly prepared food or of the breast. In this group, in children under one year, a definite history of feeding was secured in 156 cases. Thirty of these children

mother, will indirectly, but very appreciably, affect the mortality of infants in this group, and that measures intended to correct these evils must be directed to the parents rather than the child.

Interesting and suggestive as are these data, the problem of immediate importance is the relation of feeding to infant mortality. So complex is this factor, however, that much careful and discriminating study must be made before any conclusions can be reached which even approximate the truth. Obviously the deleterious influence of any particular kind of food can be determined only when the extent to which it is used is known. This basic information is exhibited in Table III. It will here be seen, that in 5,431 homes, 526 babies under one year of age were found. Of these 370, or seventy per cent., were being breast fed, eighty-six, or about sixteen per cent., were being fed on cow's milk, forty-three others were nourished on proprietary foods. In twenty-seven instances the method of feeding was not satisfactorily determined. In addition to the foregoing, an examination of the records of the Infants' Summer Hospital was made

for the years 1909, 1910, and 1911. These showed that out of 338 cases, 178, or fifty-three per cent., were nursed all or part of the time, ninety-eight, or twenty-nine per cent., had been fed chiefly on cow's milk, proprietary foods combined with nursing, or cow's milk had been fed in 108 cases. It should be stated that many of these children are over one year of age and beyond the nursing period. It is safe to assume that at least sixty per cent. of the children of Rochester under one year of age are nursed wholly or partly, about fifteen per cent. are fed on cow's milk, and about ten per cent. on proprietary foods, chief of which is condensed milk.

These conclusions are substantiated by other data that were secured with reference to the amount of milk used in the home. In a study of the section designated as number 7 in Table III and inhabited chiefly by Italian working people, it was discovered that out of 422 homes, 218 families consumed an average of one pint of milk daily, 143 homes averaged two pints daily. In section 5, inhabited chiefly by German-American working people, in a study of 508 homes, 117 families were

breast fed, and twelve were being nursed on cow's milk. In seventy children of this age among the Jews, sixty were being breast fed and there were only eight on cow's milk.

The endeavor was made to secure information as to the character of the milk which was used in the homes where fatal cases of gastrointestinal disease had occurred but with unsatisfactory results. Beyond question, however, much of the milk used in the poor and congested sections is of an inferior quality and is sold at a lower price. In the study of homes in these districts it was noted that the people have a wholesome fear of market milk, and this undoubtedly has much to do with the small amount used. This, together with the fact that in very few of these homes can ice be afforded, accounts very largely for the extensive use of condensed milk and also of store milk. In those sections of the city where ice is used, very little store milk or condensed milk finds sale. These interesting data are exhibited in Table III. From information furnished by the wholesale grocers who furnish the entire supply, it is estimated that about

TABLE III.

Showing number of babies under one year of age in various sections of Rochester and method of feeding; indicating also use of different grades of milk and the lack of ice.

No.	Class of people	No. homes visited	No. babies under one year	Method of feeding—				Homes using—		
				Nursed	Cow's milk	Proprietary foods	Condensed milk	Store milk	Certified milk	No. seen
1	Chiefly colored working people.....	231	49	13	5	1	15	48	6	93
2	Chiefly American working people.....	523	47	37	2	8	53	70	5	226
3	Chiefly American working people.....	462	38	13	2	8	38	103	2	252
4	Professional and merchant.....	283	17	8	6	3	11	4	14	29
5	German-American working people.....	527	65	45	12	8	14	28	4	230
6	Professional and merchant.....	115	5	3	2	0	0	0	5	9
7	Chiefly Italian working people.....	643	139	119	18	2	77	29	18	413
8	Chiefly Jewish working people.....	477	70	60	8	2	48	28	11	155
9	Chiefly German and Holland working people.....	234	22	17	2	3	10	5	0	111
10	American mechanics and working people.....	450	33	21	8	4	4	13	8	149
11	Professional and merchant.....	201	7	5	2	0	0	1	1	8
12	Wealthy merchant and professional.....	99	5	5	0	0	0	1	4	3
13	Wealthy merchant and professional.....	209	11	4	7	1	1	0	20	4
14	American working people.....	191	12	7	4	1	20	10	5	76
15	American working people.....	786	30	13	8	3	20	62	2	440
Totals		5,431	526	370	80	43	358	402	119	2,243

115 unknown. 212 unknown.

found to consume a daily average of one pint of milk, 231 other homes used two pints daily. In section 8, the Jewish quarter, where the families are larger, in a study of 477 homes, sixty-five families were found who used an average of one pint daily, 170 families used two pints, and 166 families were found who used between three and four pints daily. When it is considered how universal among older children and adults is the use of milk, and that even a little child requires for its daily needs at least two pints daily, it is perfectly obvious that cow's milk cannot be very extensively employed as the method of feeding among the poorer classes.

In the investigation of this question it was found that in 139 homes in the Italian section were found children under one year of age. Of these 119 were being breast fed and only eighteen were getting cow's milk, and most of this either certified or child welfare station milk. It should be said, however, that these methods are commonly supplemented by the indiscriminate feeding of such articles as bananas and spaghetti, or even beer. In the German-American section referred to, of sixty-five children under one year, forty-five were being

2,000,000 cans of condensed milk are consumed yearly; this is an average of about 5,500 cans per diem.

From a canvass of all the stores selling milk at retail, it was learned that about 3,250 quarts of milk are sold daily. Of this about 1,950 quarts are dispensed in bottles and 1,300 quarts are sold as dipped milk. The total daily consumption of milk is about 90,000 quarts. As previously mentioned, most of the store milk is sold in the districts inhabited by the poor and where infant mortality is highest. A study of this milk was made in two of these sections, the data of which appear in Table IV.

This investigation supports the general view that dipped milk is a very dirty food and undoubtedly is a menace to its consumers. Its possibilities for the spread of infection will be appreciated from the following incident. In Store Number 2, which was indescribably filthy, the writer asked for a pint of milk. The store keeper took from a convenient shelf a dirty, unwashed bottle, which beyond all doubt had been returned by some previous customer who had neglected to clean it. After giving

it a hasty rinsing in cold tap water, he proceeded to fill it from the open can. In doing this a considerable amount of the milk streamed down over the side of the bottle and back into the can. The sale of milk under these conditions is iniquitous. While it is undoubtedly true that the majority of babies are breast fed, this study indicating that from four to six times as many are nursed as are fed on cow's milk and proprietary foods, yet more than twice as many of each of the latter die as of the former.

In the discussion of Group 2 of Table I, it was mentioned that milk is undoubtedly the disseminating agent of much nonfatal tuberculosis in children. An investigation of this problem was made at the Infants' Summer Hospital during the past summer. The writer, assisted by Doctor Heatley, Doctor Bartlett, and Doctor Stansfield, of the resident staff, examined for tuberculosis by von Pirquet's method, thirty-three infants, varying in age from one week to two and one half years. Of these, ten unmistakably reacted to the test, indicating that they had been infected by tuberculosis. It is interesting to note that eight of the infants who gave positive reactions, had been reared on cow's milk.

TABLE IV.¹

Store No.	Milk sold in bottles	Fat per centage	Bacteria per c.c.	Remarks
1	Bottles	3.3	94,000	Milk cold; store clean; good refrigerator
2	Cans	3.5	4,480,000	Store filthy; poor care of milk
3	Cans	3.6	65,000	Store fairly clean; milk cold; ice box
4	Cans	3.9	130,000	Store filthy; milk warm, just received from producer
5	Cans	3.6	5,000,000	Store filthy; milk warm; poor ice box
6	Bottles	3.6	35,000	Store clean; milk cold
7	Cans	3.2	192,000	Store clean; no ice box; milk kept in cellar
8	Bottles	3.4	11,400	Store clean; milk kept in crushed ice
9	Cans	3.9	250,000	Store fairly clean; milk can open; poor ice box
10	Bottles	3.3	59,000	Store clean; milk cold

¹The assistance of Dr. O. T. Stansfield is acknowledged in this study.

It should be understood that these children were admitted to the hospital because of bowel disease. While this investigation does not establish the character of the tuberculosis, or the source of the infection, it strongly suggests a milk borne disease. Milk is undoubtedly a carrier of tuberculosis and other diseases to little children, still it cannot be considered the sole accountable factor in a high infant mortality. Indeed not one cause, but a group of causes must be held responsible for these deaths. The more important of these factors are: 1. Diseased or physically unfit parents; 2. dirty disease breeding homes; 3. neglect and bad care; 4. improper methods of feeding and the use of ill suited foods; 5. dirty and disease carrying milk.

The remedies for this evil are largely educational. Girls and young women should be trained in the duties of motherhood. Expectant mothers should receive special instruction according to their needs. The value of home and personal hygiene should be emphasized, and special attention should be given to the problems of feeding. This work may be very appropriately carried on in the public schools, social centres, and social settlements; the organization of child welfare stations and of efficient social service in connection with hospitals.

Public sentiment should be aroused as to the danger from the use of tuberculous milk. Perhaps one of the best ways of accomplishing this would be to require that milk offered for sale should be labeled whether or not it was drawn from cows tested and found free from tuberculosis. Were this done the public would soon learn to discriminate between different grades of milk and would quickly settle what is now a difficult economic and legislative problem. Finally, the community should look upon milk as a common necessity and should exercise the same care and control over it as it does over its water supply.

388 MONROE AVENUE.

THE PHYSICAL WELFARE OF POLICYHOLDERS.

What Life Insurance Companies Can Do to Increase It.

By EUGENE L. FISK, M.D.,

New York,

Medical Director, Postal Life Insurance Company.

It is not my purpose to persuade this particular audience that health conservation among policyholders is worth while; that would indeed be "carrying coals to Newcastle." Neither do I offer an elaborate and perfected plan as a suggestive basis for carrying on the work. I shall simply endeavor to give definite, concrete expression to the possibilities of conservation work in the life insurance field, in the hope that such expression, clarified by your criticism, may quicken this movement for a full utilization of the life insurance facilities for social betterment.

The issue as to whether or not it is possible for each company to do something toward promoting the physical welfare of its policyholders, is squarely before the life insurance managements, and, after reasonable investigation and consideration, should be squarely met. Conservatism and deliberation among those having in custody the \$4,000,000,000 held for the benefit of more than 22,000,000 old line policyholders, is most commendable, provided the conservatism be that of the open and inquiring mind, and not the conservatism that passes disturbing or inconvenient problems on to future generations for solution. In spite of much prevalent pessimism regarding conditions in American business life, I believe we can all recognize a growing sense of responsibility to society in the exercise of financial power. Approaching the problem in this spirit, a life insurance management would consider, not whether conservation work is *necessary* for the growth or prosperity of a company, but whether it is *compatible* with such growth and prosperity. The answer, "we don't have to do this thing; our mortality is favorable," is not satisfying, and it will not satisfy an aroused public intelligence. If there is latent and unused among the life companies the power to prevent much of the needless misery that afflicts generation after generation of mankind, then there exists not only a magnificent opportunity, but a solemn obligation.

HISTORY OF THE HEALTH CONSERVATION MOVEMENT.

My first suggestion for an educational campaign (1) by the life insurance companies, for the prevention of disease, was expressed in a letter to *Views*, May, 1907, discussing an able article by Professor Emile Berliner, of Washington, D. C., on the prevention of tuberculosis, but no opportunity was found to put these ideas into operation until the vigorous cooperation of Mr. E. E. Rittenhouse (2) was secured, in 1909, shortly after the latter became president of the Provident Savings Life Assurance Society. About the time our health bureau was being organized, Professor Irving Fisher (3), of Yale University, suggested that the life insurance companies could render material aid in the campaign against preventable disease, and Dr. Burnside Foster (4), of St. Paul, proposed the periodical medical examination of policyholders. This latter feature, modified to the extent of granting examinations annually instead of quinquennially, was incorporated into our plan. After careful investigation of its workings, this plan was adopted and earnestly carried on by the Postal Life Insurance Company, following its absorption of the Provident Savings. No doubt the idea of health conservation has been in the atmosphere for many years, stirring one mind after another, and at length breaking into the practical world through channels of least resistance. When our bureau was first established, we received a letter from Doctor Dobell, of England, congratulating us on our action, and stating that many years ago he proposed a similar project to the British companies, but elicited no favorable response.

Dr. Denslow Lewis (5), in his valuable paper presented at the Los Angeles meeting covered fully the subject of present health activities among the life companies, and I shall not again traverse that ground, further than to state that health conservation in some form is now practised by only five out of 231 old line companies, although it is true that one of these companies has approximately 500,000 policyholders, and another has about 8,000,000 industrial policyholders, who receive occasional benefits (6). So there are 226 old line companies with this opportunity still before them. Periodical examination of policyholders is granted only by the company with which I am connected. I am mindful of the efficient and valuable work done by the health bureau established in the Association of Life Insurance Presidents, in 1910, but that bureau is engaged chiefly in accumulating information regarding health legislation, health conditions in certain localities, etc., and its operations are necessarily restricted. It exerts no systematic, direct influence upon policyholders. The idea behind the bureau is excellent, and in time its scope may be enlarged, but a yearly appropriation of \$5,000 cannot go very far in the protection of 20,000,000 of people.

PRACTICAL BUSINESS AND SOCIAL PROBLEMS INVOLVED.

I realize, however, that those who believe in this work must be definite and practical. It is all very well to have our heads among the stars, but we must keep our feet on the ground. It is not suffi-

cient to recognize the obvious physical advantages to policyholders of such a system. We must be able to discern a financial saving that will justify the expense of carrying on the work.

In offering a scientific and practical reason for health conservation in life insurance, I believe we must answer the following questions:

1. Is the present death rate among insured lives necessarily a fixed quantity?
2. If not, how can the death rate among insured lives be lowered?
3. What will it cost?
4. What will be the saving in dollars and cents?
5. What will be the influence upon life insurance medicine?
6. What public service will be rendered?

Answering the first question: It may surprise you to learn that some people question whether the present very favorable rate of mortality among insured lives *can* be lowered. A number of observers have called attention to the fact that there has apparently been little change in the death rate among insured lives of recent years. It has been pointed out (7) that the yearly cost of mortality among the leading companies has remained about the same; that is, the ratio of actual losses sustained, as compared to the expected loss by the American Experience Table, has fluctuated around eighty per cent. However, so many influences affect this ratio that it can hardly be accepted as a positive guide. The volume of new business, the average age of exposed risks, the lapse rate, and other varying elements, materially affect the total result. In fact, notwithstanding the apparently level, total death rate, it has been possible to demonstrate (8) a very material improvement in certain age groups, and a decided increase in mortality in others. My own paper (9) on the subject of adverse selection among young and old entrants, published in 1907, actually demonstrated a fall in the death rate among young entrants in several leading companies of about thirty per cent., and an increase in the mortality among elderly entrants (sixty years and over), ranging from fifteen to thirty-four per cent., during the past thirty years. Later researches (10) revealed similar mortality changes in the general population, due to a decided fall in the death rate from communicable diseases affecting young lives, and a pronounced rise in the death rate from degenerative maladies affecting the elderly. Sanitary and hygienic reform have doubtless powerfully and favorably affected the death rate among young people, while neglect and faulty living habits have increased the mortality from diseases of later life.

I believe the fact that the mortality in the average, well managed company is far higher than it need be is well illustrated by the following chart, derived from the experience of the United Kingdom Temperance and General Provident Institution of London (see Chart I on the following page).

In that company the total abstainers and moderate drinkers, almost equal in number, were placed in separate classes, and the chart exhibits the comparative mortality among the whole life policyholders in these classes. The experience on the general section, composed of moderate drinkers and carefully selected risks, was quite as favorable as

that of the average company, i. e., about ninety-one per cent. of the expected by amounts, measured by the experience of sixty-three British companies (Om table); the abstainers' section showed a much lower mortality, about sixty-six per cent. of the expected by amounts, a difference to the advantage of the abstainers of about twenty-seven per cent. Other companies (12), with more modern experiences, operating on a like basis—The Scottish Temperance Life, The Sceptre Life Association, The Abstainers and General Insurance Co., The Manufacturers' Life of Canada, etc., show even greater differences in favor of the abstainers. These actual tests of experience exhibit the possible influence of one hygienic factor alone in lowering the mortality in a large body of insured lives. Bearing in mind that the comparison is made with good average lives (13), we are forced to the conclusion that the death rate in the general section of these companies, and in all other companies where there is an exposure of average risks, is not a neces-

sults, partly of ignorance, and partly of fashion and the suggestion of example. If the life companies persistently pound into the brains of 22,000,000 people in this country the simple, elementary principles that underlie right living and form the basis of preventive medicine in its broadest sense, they will come very near to governing the fashion in these matters. Not only will they reach the individual policyholder, but they should reach and activate those thinking groups (14) which, in every community, so largely mould and guide public opinion. By the systematic dissemination of information, much of which is locked up in medical literature and reaches the public fitfully, and often in unscientific and exaggerated, or unintelligible form, we may bring about a condition where ignorance along certain lines will be regarded as shameful, and many unhealthful practices will be looked upon as implying such ignorance. It is sad, but true, that many people would rather be caught doing something wrong than something stupid. Call a man a devil, and he may be secretly flattered, bearing in mind the rare ability of the Miltonian Lucifer; but show him, gently and tactfully, that he is a dolt, a dullard, and behind the times, and egoism may perform what a deeply encysted conscience could never be aroused into doing.

The life companies have already accumulated valuable information regarding the influence of living habits and various impairments which lower the resistance to disease. A vast mine of information in their possession is now being worked over (15), analyzed, and interpreted according to scientific standards. By imparting such information to policyholders as it becomes available, much that is debatable in matters of personal hygiene could be cleared up, and the *newly born science of medical selection* would enjoy the inestimable privilege of growing up side by side with the *still young science of preventive medicine*—the giant of the future. By cooperation with public health authorities, by urging policyholders to support health legislation, and to obey existing public health laws, can never be enforced without the consent of an enlightened public mind, by promoting health leagues in the thousands of communities where policyholders, examiners, and agents are available for cooperation, the death rate among insured lives, as well as that in the general population, would be favorably affected. Education and organization could move abreast. All such activities should encourage a closer relationship between policyholder and company (16), and diminish the waste to the insuring public and to the companies, through excessive lapsing and twisting of policies, besides increasing the volume of new business by popularizing insurance, and rendering it actually "life" insurance, as well as "death" insurance.

Another resource is the periodical examination of policyholders. It has been demonstrated that, owing to the influence of medical selection, the mortality among insured lives in the early years of in-

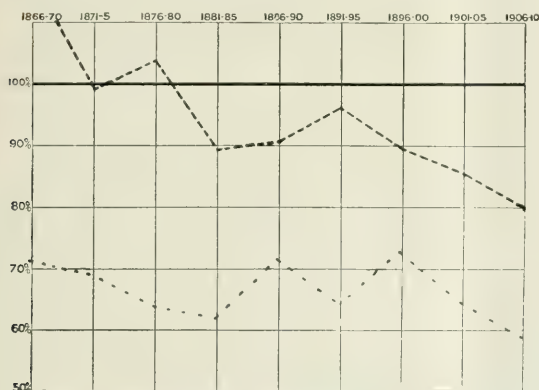


CHART 1.—Experience of the United Kingdom Temperance and General Provident Institution of London. Healthy males, whole life policies, amounts, 1866-1910.
Expected mortality, British Om table..... 100.00%
Ratio actual to expected mortality, nonabstainers. 91.27%
Ratio actual to expected mortality, abstainers. 66.25%
Mortality among abstainers 27.4 per cent. less than among nonabstainers.

sity, but could be materially lowered by superior living habits.

PLANS AND METHODS.

Answering question No. 2: We open up the broad subject of conservation activities. I have stated that I have no elaborate or ideal plan to suggest, but it is possible to indicate, in a general way, the lines along which such a movement should progress. An educational campaign can be economically and effectively carried on by any company. Some people doubt the value of such work, asserting that we cannot make individuals either moral or healthy by "telling them things." There is much truth in this contention. The mere facts presented in a health bulletin may of themselves be without power to influence the average individual, but the practical business idea behind the issuance of the bulletin may arrest attention and give to the facts a potent suggestive value. Bad living habits and neglect of the body until disease becomes obvious are the re-

surance is much lower than that in the most favorable communities, and lower than that among insured lives of the same age that have been long insured. This saving of mortality is an important source of gain in all companies, and largely contributes to dividends that directly reduce the cost of insurance to the consumer, yet the medical examination of life insurance risks, when first proposed, was looked upon as chimerical, impractical, and unduly expensive. Can nothing be done to check the tendency among insured lives to approach and even exceed the death rate in the general population? How many lives might be prolonged, not only by the prevention of communicable disease, but by detecting the early signs of renal or cardiovascular changes; or, better still, by correcting habits which are obviously preparing the subject for such affections (17)? The promise that lies in such work is suggested by the fact that forty per cent. of the risks examined by our bureau were found to be more or less impaired, and of this number more than fifty per cent. supposed that they were in absolutely sound health. That systematic work with such ends in view will develop and maintain in every company a certain body of superior lives that will definitely and permanently reduce the company's mortality, seems obvious, and requires no actuarial demonstration until we consider the cost. I have merely given an adumbration of possible health conservation activities. With such work in the hands of competent scientific men, we may count upon the stimulus derived from actual experience to develop the most effective plans and methods.

THE COST OF CONSERVATION.

What will it cost? The cost of an educational campaign, involving the distribution of quarterly bulletins, would aggregate, in five leading companies, with about 2,230,000 policyholders, not more than \$150,000 annually. This may seem like a large sum, but it is small compared to the \$1,133,000 paid out in 1910 by these same companies for medical examination and inspection of new risks, with the same object in view, i. e., reduction of mortality. These companies spend \$368,638 a year for ordinary advertising, the value of which is questionable in an agency company, and about \$9,000,000 yearly for agency supervision (not commissions) and home office salaries. Surely the expenditure of one seventieth part of these sums for the double purpose of preventing human misery and reducing the cost of mortality, does not loom very large as a business risk.

The cost of periodical medical examination is a more serious matter, and calls for deliberate consideration. My own company has had no difficulty in procuring these examinations at an expense of \$2.00 each, urinary analyses being made at the home office. It is obviously impossible to allow a larger fee until the results shall clearly demonstrate the degree of saving. Physicians who are members of societies that will not permit them to make examinations for insurance for less than \$5.00, are perfectly willing to make these health bureau examinations, comparable to an office consultation, for \$2.00, as the latter do not present the peculiar difficulties that are involved in an examination for new insurance. No urinary analysis is required of the phy-

sician, and no insurance is ever issued or restored upon such examination. Occasionally application for additional insurance is made as a result of such examination, but in these instances a complete and independent examination is required, for which the usual \$5.00 fee is paid.

It should be clearly understood that the object of this system is not alone to detect disease in time to check or cure it, but to encourage a closer relationship between our policyholders and the medical profession, thus shielding them from the pernicious influence of quacks, charlatans, neighbors, patent medicine vendors, and temporizing home treatment. The results of these examinations are, as a rule, made known to the family physician, with the consent of the policyholder. Every ethical principle is strictly maintained. The company thus gives no direct medical advice as to treatment, although general hygienic principles are often dwelt upon in correspondence with policyholders, as in our health bulletins.

Probably not more than ten per cent. of the policyholders could be counted upon to avail themselves of this privilege, at least for a number of years, although many would be influenced to undergo regular medical examination by their own physicians. The aggregate cost of periodical medical examinations in five companies, with a total of 2,230,000 policyholders, would be about \$520,000 annually, assuming that only ten per cent. availed themselves of the examinations. The total annual cost, therefore, of a comprehensive system of conservation in such a group of companies would be about \$670,000. Without doubt the centralization of conservation work in one bureau, acting for a large group of companies, would greatly reduce the cost and increase the efficiency of this system. The figures given are from commercial estimates only, and could be much reduced by the large companies with labor saving devices.

THE SAVINGS THROUGH CONSERVATION.

What will it save? A number of attempts have been made to estimate the probable saving from conservation work (18). In most instances such estimates are derived from no tangible basis of experience, but are dependent upon medical and actuarial judgment as to the prevalence of disease, the preventability of disease, the postponability of death from certain causes, etc. The personal equation necessarily influences such estimates within a wide range of variation, and life insurance executives are loth to act upon such vague premises. Although experience in my own company is so limited, both as to the duration of our health conservation activities and the number of lives coming under the influence of our bureau, nevertheless I believe you will be interested to learn the results already attained especially through the periodical medical examinations.

A recently completed expert actuarial analysis of the risks examined by our health bureau shows a mortality loss among those favorably reported of \$16,000, although the expected loss by the American table was \$54,663, a ratio of only twenty-nine per cent.

In the group unfavorably reported the loss was

\$57,000, while the expected was \$57,197, a ratio of less than one per cent. Viewing the favorably reported risks in the same light as recently insured lives, although most of them had been long insured, the gain on the group was at least the difference between fifty per cent. of the American table (\$27,331) and twenty-nine per cent. (\$16,000) or \$11,331.¹

Treating the unfavorable group (those found physically impaired by the bureau) as a substandard group with an expected mortality of 200 per cent. of the American table, a reasonable assumption, inasmuch as some of these risks were almost moribund when examined, and a saving of 100 per cent. of the American table is indicated or \$57,197. The combined saving therefore from the periodical examinations would aggregate \$68,528. Deduct cost of examinations, \$4,000, and the net savings would equal \$64,528.

A larger experience might show very different results, but as far as this evidence goes, it is overwhelmingly in favor of periodical medical examinations as a business measure.

There has also been a very considerable benefit from our educational campaign, judging from the response elicited by the circulation of more than one half million bulletins and pamphlets, some of which have been copied and widely circulated.

In casting about for a broader basis of experience upon which to build an estimate of the probable saving from conservation work, I concluded to use the figures derived from the United Kingdom Temperance and General Provident Institution. I have called your attention to the fact that the temperance section of that company exhibited the possible saving due to superior living habits. I believe we are justified in assuming that in any company where conservation work is carried on, there will be a certain group of risks that respond to these efforts, and that this group will show a mortality quite as favorable as that exhibited by the total abstainers, namely, twenty-seven per cent. lower than in an average group. The general section of the British company might be compared to an average, well managed company, with favorable mortality, moving alongside of an average company (the temperance section) in which conservation principles are followed by practically all the policyholders. At least here we have the solid basis of experience to tell us what *can* happen to the mortality rate under specially favorable conditions of living. The reality of the savings resulting from such conditions is evidenced by the payment to abstainers each year of bonuses or dividends, ranging from sixteen per cent. to forty-six per cent. in excess of those paid to ordinary risks, or the discounting of such bonuses by a reduction in the premium rate to those abstainers who desire it.

By efficient conservation work a company may reasonably expect to reduce the mortality on ten per cent. of its risks to the rate experienced by the ab-

stainers. Now the net premium² or actual cost of insurance for the nonabstainers, assuming that seventy-five per cent. of the risks were insured under whole life policies and twenty-five per cent. under endowments would be \$25.98, while the net premium for the abstainers would be \$22.95, a difference of \$3.03 in favor of the abstainers. Applying this factor to the insurance at risk in five leading companies during 1910, which amounted to \$5,585,794,093, and the results, assuming that ten per cent. of the business was favorably influenced by health conservation would be as follows:

Mortality savings from conservation.....	\$1,692,496
Deduct cost of educational health bureau.....	150,000

\$1,542,496

Deduct cost of examining ten per cent. of policyholders	520,000
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Net saving \$1,022,496

This method of demonstrating the saving from a

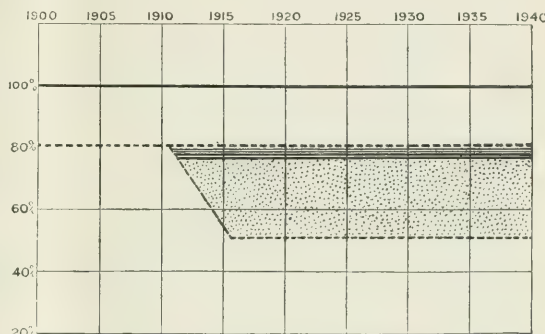


CHART II.—Actual and possible mortality fluctuations in a group of five companies, with and without health conservation.
 Expected mortality, American experience table... 100%
 Ratio, actual to expected mortality, without conservation... 80%
 Probable ratio, actual to expected mortality, with conservation... 70%
 Possible ratio with conservation... 60%

reduction in mortality, for which I am indebted to Mr. Robertson G. Hunter, associate actuary of the Germania Life Insurance Company is not only strictly accurate and scientific, but it has the great merit of shutting off debate regarding the actuality of saving from such a source. The net premium tells the story.

The general business effect of conservation influences may perhaps be more clearly expressed as follows:

As the mortality cost on the total insurance in force above referred to was \$44,364,142, a reduction of the cost by \$1,692,496, the conservation savings on ten per cent. of the amount at risk, would equal 3.81 per cent.

Employing this factor the results would be as indicated in Chart II.

This chart shows that from 1900 to 1910, five leading companies, by actual experience, sustained a mortality approximating eighty per cent. of the American Experience Table. Assuming that these companies established conservation in 1910, the fu-

¹Although the members of this group were not physically impaired, many of them received advice regarding personal hygiene and a possible improvement in their living habits, and it is fair to assume an improved vitality in the group through contact with the bureau.

²At age thirty-five years.

ture curve would fall and fluctuate around seventy-seven per cent. of the American Experience Table. This difference would constitute the yearly saving in mortality resulting from conservation, i. e., 3.81 per cent. Without conservation, the line would continue indefinitely at about eighty per cent. of the American Experience Table. Under a complete and ideal response to conservation activities, the largest possible saving is indicated by the lower line, approximating fifty per cent. of the American Experience Table. For the five leading companies covered in this chart, the results would be as follows, assuming that ten per cent. of the policyholders responded to conservation influences:

Actual mortality cost for the year 1910.....	\$44,364,142
Reduce this by 3.81 per cent., and we save....	1,692,496
Deduct cost of educational health bureau.....	150,000
	\$1,542,496
Deduct cost of examining ten per cent. of policyholders	520,000
Net saving	\$1,022,496

These additional mortality gains would naturally be distributed as dividends to policyholders, and operate directly to lower the cost of insurance to the consumer. The saving might well exceed this sum, as a result of the direct effect of the periodical examinations.

ULTIMATE MEANING TO THE MEDICAL PROFESSION AND TO SOCIETY.

What will be the influence on life insurance medicine? As we view this aspect of the question, it is well to remember that the aim of health conservation in life insurance is not a gigantic system of medical treatment after any particular "school" of medicine, but a comprehensive system of prevention that will reduce the need for treatment. It is true that this will curtail the revenues derived by physicians from diseased individuals, but that is the highest aim of scientific medicine to-day, which absolutely disregards the unfavorable financial reaction upon the profession from such endeavors. It is necessary to emphasize these points because of the widespread misunderstanding and misuse of the word "freedom." Many oversensitive people are disturbed lest there may be interference by a National Department of Health with their "freedom" to injure themselves and their neighbors by unhygienic practices. The fact that the typhoid bacillus is "free" to pursue life, liberty, and happiness in the Peyer's patches of 300,000 American citizens annually, disturbs them not. The American stomach has already been restricted in its "freedom" to receive poisoned food and the \$142,000,000 worth of patent remedies and druggists' preparations that are annually prepared for its delectation, and further restriction is viewed with alarm.

The attitude of scientific medicine may well put to scorn those who cry, "a medical trust!" while deriving their own revenues from the credulity of the sick and suffering. Let the people who are back of this cry do something to prevent disease and reduce their revenues from the afflicted, and they will avoid the counter charge of constituting "a misery trust."

Disposing of such possible critics in advance, therefore, I may point out that under conservation

activities the examiner will be brought into more frequent contact with his companies and with the policyholders in his community. If he is wise in his generation, and posts himself thoroughly on personal hygiene and the principles of preventive medicine, his influence, opportunities, and rewards will be greatly increased, and to some extent make good the deficiency created by his diminishing income from mere disease. Such activities will likewise open a wider vista to the medical director, rendering his work more interesting and satisfying, while at the same time broadening his responsibilities. Life insurance executives and directors, also, may well derive satisfaction from the increased significance and importance to society of the business under their control.

What public service will be rendered? Who can say how many of our social ills, for which so many patent remedies are offered, would yield to influences that tend to bring the individual into physical harmony with his environment? The only possible sociological objection to conservation is that raised by Nietzsche against the Christian religion, i. e., that its principle of sympathy, which is likewise found in the altruism of Spencerian philosophy, prevents the weak and defective from "going to the wall." Are we medical men prepared to force the weakling to the wall? Not so. It is by preventing the weakling from being born that science must neutralize its own reversal of natural selection. So we are justified in hoping that an educational propaganda alone, which persistently and systematically reaches, directly or indirectly, perhaps 60,000,000 people, will do much towards dispelling the gross superstition and ignorance that is still so widespread, regarding matters of bodily health. By demonstrating that those who neglect or abuse their bodies are not only poor animals, but bad business assets—that communities without efficient and sufficient health protection are likewise bad national assets and a drag upon the country's progress, there will result a larger and more positive response to the efforts of cognate agencies for social reform and uplift, and health conservation in life insurance will become a powerful civilizing force.

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MIXED VACCINES IN SEPTIC CONDITIONS.

By W. ROSS THOMSON, M. D.,
Warsaw, N. Y.

The following preliminary note on our experiences with the mixed vaccines in the treatment of various septic infections is published with the hope that it will impress the general practitioner as to their value in a large field of application.

We feel that there can be no question of a doubt that several of the cases detailed would have ended fatally if the vaccines were not given. In all of our cases we have used the stock mixed vaccines, of *Streptococcus pyogenes*, *Staphylococcus pyogenes aureus*, *Staphylococcus pyogenes albus*, *Staphylococcus pyogenes citreus*, *Bacillus coli communis*, *Diplococcus pneumoniae*. The initial dose was always one half of the vial or 375,000,000 bacteria. The mixed vaccines were used because we had no time for reports on cultures, and also because we felt that in at least some of these cases there was a great probability of a mixed infection. The injections were given on the first day that infection was evident, except in one case.

CASE I. Mr. R., aged thirty-three years. Referred by Doctor Truesdell, of Warsaw. Admitted to the hospital at 3.30 p. m., February 4, 1912. Pulse 118, temperature 103.5° F., abdomen rigid and tympanitic. Immediate operation revealed an abdomen full of pus, gangrenous omentum, gangrenous and perforated appendix. Appendix and entire omentum removed. Abdominal cavity washed out with several gallons of salt solution. Injection of 375,000,000 mixed vaccines given at 10 p. m.; at 12 p. m. temperature had dropped to 100.4° F. From this time to the twenty-first day the patient had no rise of temperature. On that date a small secondary abscess was opened. The general peritonitis seemed in this case to cease after the injection was given.

CASE II. Mrs. D., aged twenty-eight years. Referred by Doctor Randall, of Silver Springs. Patient had been suffering for several years with fibroid and for two years had had chronic appendicitis. Had had two miscarriages. Present illness dated from an abortion of a macerated, three months' fetus. Three days later her temperature went to 104° F. and she was cured by Doctor Humphrey, of Silver Springs. A dull curette was used. The next day she had a chill and her temperature rose to 107.4° F. I saw her in consultation and injected the initial dose of mixed vaccines. We decided that if her temperature came down, we would remove her to the hospital and operate. In four hours her temperature dropped to 100.5° F. Her temperature remained low for two days and then went to 100.5° F. She received a second injection of mixed vaccines and was sent to the Warsaw Hospital for immediate operation. Her temperature had dropped five degrees in four hours after the injection. Operation: Posterior vaginal section. Cervix dilated and uterus swabbed with ten per cent. iodine solution. Low abdominal incision on right side drained a large abscess cavity. From this time on recovery was rapid and uneventful.

CASE III. Mr. D., referred by Doctor Randall, of Sil-

ver Springs. This patient was the husband of the patient reported in Case II. He became infected through handling a douche bag used by his wife. The infection started in a cut in the right thumb and rapidly extended up the lymphatics of the arm. On the second day he had a chill and his temperature went to 105.5° F. He received the mixed vaccines immediately after the chill and was sent to the hospital. In six hours his temperature had dropped to 100.2° F. For four days it fluctuated between 100° and 102.5° F., when the thumb and forearm were opened and a large quantity of pus was evacuated. He was discharged one week from the time that he had his chill.

CASE IV. Mr. S. D., aged thirty-five years, referred by Doctor French, of Pike. Entered the hospital January 29th. Had been operated upon for ruptured appendix two and a half months previously at his home. At that time we found the appendix bound tightly to the under surface of the liver by dense adhesions. In a few weeks he presented symptoms of a subphrenic abscess. Operation: Ninth rib was resected posteriorly for three inches and an opening made through the diaphragm from which a considerable quantity of foul smelling pus was discharged. Drained with two rubber tubes. Temperature remained normal for two weeks and then began to range between 99.8° and 102.5° F. He had slight chills. Fifty million colon bacillus vaccines were injected without any appreciable results. Four days later 375,000,000 mixed vaccines were injected; there was an immediate rise in temperature to 104° F. Five hours later the temperature was normal and from this point the patient made a rapid recovery.

CASE V. Mrs. Z., aged thirty-five years, referred by Doctor Wilson, of Warsaw. Operation: A deep incision was made from under the chin, into the mouth. Also under the tongue for the purpose of dissecting out an extensive angina. After the operation the patient's mouth became greatly swollen and dry. The breath was offensive. On the third day she had a severe chill and her temperature went to 106° F. Pulse 160, respiration 40. Pain in the upper right side of her chest. Respiratory sounds were remarkably tubular in character in the upper front part of the right lung. Diagnosis was made of the septic inhalation pneumonia. The initial dose of mixed vaccines was injected shortly after the chill, and the temperature dropped six degrees in four hours and was normal the next morning. Patient was discharged in one week.

CASE VI. Mrs. A., aged twenty-eight years, referred by Doctor Harding, of Castile. Patient was admitted to the hospital February 25th, examination showed a mass extending more than half way up the umbilicus. Also a pronounced thickening of the cul-de-sac. History of an abortion at second month. A vaginal section revealed a large blood tumor in the right broad ligament. Further operation had to be deferred on account of the patient's poor condition. The temperature remained around 103° F. and pulse continued poor in spite of medication. There was a great deal of tympanites and hiccoughs. Mixed vaccines were injected on March 1st. Her temperature then fell to 99.8° F. and she felt better. Two days later an abdominal incision was made under cocaine and a large abscess of the uterus was opened and drained.

The cases reported in this article are all those treated with the mixed vaccines in the Warsaw Hospital, and are given in the order in which they were injected.

ANALYSIS OF CASES.

Patient No. 1 was in a precarious state when operated upon, and we feel that the vaccines prevented a spread of the peritonitis. In future we intend to use this injection in every case of ruptured appendix.

Patient No. 2. When first seen, it seemed impossible for this woman to live more than a few hours, as she was very septic. We feel that the vaccines saved her life.

Patient No. 3. In most septic infections of the hand it is very difficult to localize the infection. When pus forms the inflammation ceases to spread.

In this case the temperature was reduced after the injection and pus quickly formed.

Patient No. 4. There was no further indication of septic absorption after the mixed vaccines was given.

Patient No. 5. We believe that this patient had septic pneumonia, due to the condition of her mouth. Her symptoms were so alarming that her husband was sent for. She was feeling quite well by evening and, as no other treatment was used, we feel that the vaccines stopped the septic process almost at its beginning.

Patient No. 6. This patient rallied a few hours after the injection was given and although she had a large abscess in her abdominal cavity she did not, up to the time of the operation, have a temperature over a degree above normal.

CONCLUSIONS.

We have used the mixed vaccines in only a small number of cases and for that reason our experiences cannot be final as to the real value of this treatment for the septic infections. At the same time we feel that we should have lost three of the reported cases if they had not received the treatment.

ROENTGEN THERAPY IN ACNE.*

A Report of Twenty-one Cases.

By MULFORD K. FISHER, M. D.,
Philadelphia,

Radiographer, Stetson, Northwestern General, and Garretton Hospitals, and the Philadelphia Dental College.

Acne is sometimes such an obstinate and intractable disease to treat, and the patient is so frequently discouraged by the failure of the usual local applications and the systemic remedies to afford relief, that the following short series of twenty-one cases in which röntgenization of the lesions was followed with almost uniformly good results, is reported with the hope of pointing out a procedure, which, although it is not new, is only rarely used in this disease:

CASE I. H. B., aged twenty-six years; female; nurse; acne papulosa; four years' duration; the lesions being most pronounced around the angles of the jaw and the neck. Twelve exposures; cured; when last seen, a week ago after cessation of treatment for about a year, there had been no recurrence.

CASE II. I. M., aged twenty-five years; physician; acne papulosa and pustulosa; three and one half years duration, with numerous discrete lesions scattered over the cheeks and forehead. Twenty-four treatments; practically cured, occasionally a single pimple appears which yields promptly to a single treatment, after which there is no return for probably six to eight weeks.

CASE III. G. P., aged twenty-one years; at home; female; papular acne; was accompanied with a markedly inflammatory seborrheic eczema affecting the whole face and even involving the eyelids; in this case in which the trouble had persisted despite recourse to salves, lotions, and internal medication for two years, the action of the rays was very speedy, improvement being noted after the third treatment, and the face practically clearing up after the fourteenth treatment. There has been no return of the acne.

CASE IV. G. F., female; aged twenty-seven years; bookkeeper; entire face covered with dark, purple blebs, mounted on a deeply indurated base; her face was so unsightly and she felt so keenly about her eruptions that for two years she had not gone out of doors without a veil on her face. Treatment in this case was prolonged, extending over a period of ten months, at first twice a week, and later once. Since beginning treatment she has married, and being now pregnant, has discontinued treatment for a time. However she is practically cured, since only occasionally does a single papule appear; the induration is gone and even the pitting resulting from the old lesions, and which I was very pessimistic about, has largely disappeared.

CASE V. S. G.; female; aged thirty-one years; married; acne rosacea of the nose which had been present ever since she had been a child; being somewhat of a society matron her "red nose" had been a source of considerable annoyance and embarrassment to her. She had eighteen exposures with a curative result.

CASE VI. A. S.; female; aged twenty-six years; unmarried; living at home; this patient was originally referred to me for the treatment of a hypertrichosis (a condition for which I do not any longer employ the x rays, as a better result can be secured by electrolytic means). This young woman had, in addition to the excessive growth of hair on her face, a rebellious attack of pustular acne, which no doubt had been greatly aggravated by the constant use of various proprietary depilatories. Although she came particularly for treatment for removal of the hairy growth, the acne responded much more readily to the rays than did the former. The acne cleared up after eighteen treatments, and I later removed the hairs, which seemed, if anything, to be stimulated to further activity by the x rays, by the electric needle.

CASE VII. J. G.; aged forty years; contractor; a man accustomed to go on a heavy debauch about every four or five weeks; had suffered from pustular form of acne for fourteen years, his face at no time being free from a goodly number of pustules with a markedly inflammatory base. He had sixteen exposures and his face was clearing up nicely when he decided to go on a spree lasting four days. At the end of that time he returned, penitent and with his face in as bad a condition as it had been previous to beginning treatment. Another course of treatments with pronounced improvement was followed by another spree, with recurrence of the acne. This patient is still under treatment, the face remaining comparatively clear as long as he stays sober, and break out immediately after he starts on one of his "periodicals."

CASE VIII. E. Z.; female; designer; aged twenty-seven years; acne rosacea affecting the tip of the nose and the chin, of four years duration. Sixteen exposures resulting in a complete cure.

CASE IX. H. P.; male; aged thirty-six years; book publisher; acne papulosa; most pronounced around the forehead and near the malar eminences. Although the lesions in this case were not particularly large, nor very numerous, this patient's case was unusually resistant to treatment. He has received forty-one exposures and it is only within the past two or three weeks that any decided improvement has been noted.

CASE X. B. C.; aged nineteen years; student; this case while of somewhat shorter duration (two years), was remarkable for the amount of induration and scarification that had resulted. The eruptions were of the tubercle variety, with a thickened inflammatory base, while the surrounding skin where it was not infiltrated with keloid masses, was covered with a greasy seborrheic eczema. In addition to the x ray treatments, he received ten or twelve injections of autogenous vaccines. This patient while still under occasional treatment (about once every two or three weeks) is quite well. No new lesions have appeared for the past three months, the infiltration has practically disappeared, and there only remains the scarring from the old lesions, which it is rather doubtful can be much improved.

The remaining eleven cases, being somewhat similar as regards the form of eruption and the course run under treatment, are reported in brief. The ma-

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jority were prolonged cases of acne vulgaris, the common form, where the areas of predilection, viz., the forehead, chin, and lower jaw, are the site of twenty to fifty lesions, a combination of papules, pustules, and tubercles.

CASE XI. R. G.; female; aged twenty-one years; seamstress; acne vulgaris; fourteen exposures; cured.

CASE XII. S. D.; female; aged twenty-seven years; married; acne pustulosa; duration three years; nineteen exposures; cured.

CASE XIII. W. G.; male; aged thirty-two years; salesman; acne rosacea affecting nose and chin, of five years' duration; twenty-six exposures; cured. Patient had one slight recurrence after six months, for which he received eight röntgenizations, since which there has been no return.

CASE XIV. W.; male; aged eighteen years; student; acne vulgaris, of twenty months duration; fourteen exposures; cured.

CASE XV. M. H.; female; aged twenty-three years; at home; acne vulgaris; four years' duration; thirty-four treatments; cured.

CASE XVI. L. B.; female; aged twenty years; stenographer; acne pustulosa; a very severe case; up to date this patient, who has received twenty-three exposures for her acne which is of over three years' standing, has progressed so far that she may be regarded as cured; but she personally desires to keep up the treatment, with the idea that the rays may prevent any further trouble.

CASE XVII. R. K.; female; aged twenty-eight years; at home; acne vulgaris, seven years' duration; a mild case; seventeen exposures; cured.

CASE XVIII. J. A.; female; aged twenty-five years; school teacher; acne vulgaris; four years' duration; twenty-two exposures; cured.

CASE XIX. E. A.; male; aged twenty-nine years; buyer; acne vulgaris; interval attacks over a period of twelve years; thirty-six exposures; decidedly improved; occasional slight recurrence, which yields after one or two more treatments.

CASE XX. B. K.; aged nineteen years; female; at boarding school; acne papulosa; fifteen months' duration; eleven exposures; cured.

CASE XXI. H. S.; aged twenty-seven years; male; veterinarian; acne vulgaris; two and one half years' duration; cured.

Of the twenty-one patients here reported, fourteen may be regarded as cured, since when discharged from treatment there was no sign of any lesions, and as I was able to follow up the majority, no tendency toward recurrence: five cases may be classified as being improved, two of these being patients in whom the acne had decreased in virulence, but were still under treatment; the remaining three are of patients whose faces had cleared, but in whom there was a tendency to the return of a few papules. It is rather doubtful if any of the cases can be regarded as unimproved, except possibly Case vii (the gentleman of the bibulous habits); and Case ix, which for a long time was so resistant to the influence of the x rays, and which, after having received forty-one exposures, has only recently commenced to show signs of improvement.

The cases reported above are selected from patients who with but one exception were referred for treatment by their regular family physician. All were cases that had been under treatment for acne for a long period of time, and in no instance had been permanently benefited by the lotions, unguents, and the tonic and stomachic treatment that had been instituted. I have avoided reporting any hospital cases, as these are notoriously difficult to follow up,

and dispensary patients are not as a rule endowed with sufficient persistence in these cosmetic disorders, to follow a prolonged course of treatment. For it is always advisable to acquaint the patient with the fact that from two to six months, and, in some rebellious cases, even more are necessary for a cure, and that from a few treatments not even a slight improvement can be expected.

The method employed in treating these cases is as follows: The patient is placed in the recumbent posture; the hair, eyelashes, and eyes, and if a man, the moustache, are covered with lead foil; each side of the face is treated separately, as it is difficult to get an even distribution of the rays if full faced exposure is made, especially if there happen to be a number of lesions back of the malar eminences or near the angle of the jaw; a tube of low vacuum is used, held in a protective leaden glass shield, eight to ten inches above the region over which the exposure is to be made; the rays, which are filtered through sole leather, should allow the passage of three fourths to one milliampère of current through the secondary circuit, or, if a radiometer or milliampèremeter cannot be employed, about the radiance that in a darkened room will show as a faint yellowish green light; each side of the face receives an exposure of six to ten minutes, depending on the amount of inflammatory reaction that is present, those cases where there is already present considerable redness not being treated so strenuously, while in cases where there is much induration, as in the tubercle form of acne, the more prolonged exposures are given. Treatments are given twice a week, although after a time the séances may be reduced to once a week. More frequently than this may produce a burn, and I have never found it necessary, or even advisable, to do as Stelwagon and others have recommended, to push treatment to the extent of producing an erythema, and then discontinuing treatment until the redness had disappeared.

Occasionally one meets individuals who seem to possess an idiosyncrasy to the x rays, and even one mild exposure may produce a reaction. It is almost axiomatic among radiographers that persons who tan readily in the sun or are easily subject to sunburn, are most liable to an x ray dermatitis and I always inquire from patients before starting treatment if they are of this type. If the answer is in the affirmative I regulate my doses of the rays accordingly.

Acne, when under treatment as outlined, follows a somewhat uniform course. I may mention at this point that in all the patients reported above, all local and systemic medication was stopped, the only exception to this being in Case x, where autogenous vaccines were given in conjunction with the x rays. In another case under my care at the present time and which is not reported, since it has not been under treatment sufficiently long to be incorporated in this series, the vaccines are also being injected by the attending physician, Dr. J. Thompson Schell. These two cases seem to have cleared up somewhat more speedily under the combined treatment than under the effect of röntgenization alone, although the two cases are not sufficient from which to draw positive conclusions.

For the first two or three weeks after commencing

treatment little change can be noted in the disease; gradually the redness is seen to become less pronounced, and the lesions almost imperceptibly to fade; the indurated areas decrease in size, and in the pustular form of acne there is less tendency for supuration to result. One of the first effects noted is the disappearance of the oily seborrhea, which, Sabouraud asserts, always accompanies the acne. Later it is seen that the lesions are smaller and that the new pimples that make their appearance during the course of treatment are more superficial, and are principally of the papular variety; they do not remain on the face for several weeks as is usual in this disease, but run their course and fade within four or five days. It is almost impossible to prognosticate how long a given case will require to effect a cure, some of the milder forms of the disease yielding less readily to treatment than the most severe. For the pitting and scarring that result from the old eruptions, not much can be promised, but even these sometimes show improvement from the rays. As will be noted in the report of these cases, in some of the patients there was a tendency to recurrence. This is usually of a mild type and a few exposures are sufficient as a rule to clear it up. In none of the patients whom I have been able to keep under treatment has there been a return of the acne in a form as severe as it was previous to the treatment.

The results achieved in this series of cases would lead to the belief that acne is a local disorder, rather than is usually thought to be the case, the manifestation of a systemic disorder. Aside from the eruption, all the patients were in excellent health, without history of gastric disorder, constipation, impaired appetite, circulatory disturbance, or impaired vitality. In only one patient (Case iv) was there an antecedent history of previous disease, this being an attack of typhoid fever, the acne appearing about a month after convalescence. No search was made for the bacillus of acne, which a number of observers (Gilchrist, Unna) aver is always present in the lesions, and which still further points to the local character of the disease.

The manner in which the x rays produce their curative action in this condition is as obscure as in other cutaneous affections (ringworm, lichen planus, chronic eczema, epithelioma, etc.), in which Röntgen therapy frequently accomplishes brilliant results. Kassabian asserts that the x rays produce a slightly stimulating action on the inflamed sebaceous glands, and that the muscular atony accompanying this condition, as manifested by the comedones blocking up the glandular orifices and the consequent oily appearance of the skin, is overcome by the application of the rays.

An analysis of the foregoing series of cases would cause one to be rather optimistic as to the results of x ray treatment in this skin affection. Of course, I do not deprecate the usual methods of treating acne: lotions, ointments, tonics, and hygienic régime are usually sufficient to clear up the vast majority of acneiform eruptions. But there still remains a class of cases which despite rigid and faithful adherence to these therapeutic measures, absolutely fails to respond, and it is in these stubborn, and often overtreated cases, that a field for x ray therapy can be found.

Schamberg regards the x ray as the most important single therapeutic measure in the treatment of acne; Tousey announces that he has never failed to cure the most severe form of acne rosacea with it, although in conjunction he employs a simple salicylic acid ointment; Stelwagon approves highly the method, but reserves its use for "persistent, rebellious cases."

The few case reports presented in this paper will serve further to emphasize the good results frequently accomplished by one of the newer physical agents in what, while it is a comparatively benign disease, is yet one of the most common of the skin affections; one, that is always annoying, and frequently a cause of embarrassment to the patient, and very often stubbornly resistant to the most heroic measures of the attending physician.

2838 DIAMOND STREET.

CRYPTOGENETIC SEPSIS TREATED WITH AUTOGENOUS VACCINE.*

BY ABRAHAM ORENSTEIN, M. D.,
New York.

Cryptogenetic sepsis usually denotes a blood infection, obscure in regard to its etiology. We know, however, that a disregarded scratch mark in the susceptible patient explains some of these cases; others follow upon apparent recovery from an acute illness. This case did not come under either of these groups.

CASE. M. M., Austrian by birth, aged twenty-five years, single, fur cutter by occupation, was admitted to the Har Moriah Hospital, August 9, 1911, with the following history:

Family history, negative.

Previous personal history. Habits and appetite good, bowels regular, urination normal, patient slept well. Drank very little tea or coffee, only milk. Smoked from five to six cigarettes each day. No venereal infection.

Previous illness. Was never sick, except that he had been operated upon three years before for an inguinal hernia.

Present condition dated back to five weeks before, when patient felt pain in his right knee, accompanied by redness, heat, swelling, and immobility of the joint. He was treated and relieved for a day. On the next day the same symptoms began in his right shoulder, elbow, and wrist joints, which are continuous as yet. A few days later the left wrist joint became affected. In addition to the foregoing symptoms, the patient complained for two weeks of fever, followed by chilliness, and then profuse sweating. Used to feel nauseated at night, and vomited several times during the night, but at present these symptoms had disappeared. Now he complained of constipation, also of dizziness, occasional dyspnea, and cardiac palpitation, occasional headaches, more severe at night, so that it disturbed his sleep. No history of any trauma whatsoever.

General condition. Patient was a male, tall, thin, fairly nourished, no dyspnea, no apathy, no cyanosis, moderate emaciation. Pupils were round, equal, regular, reacted normally to light and accommodation, no palsies, no icterus. The ears and mastoids were negative. The throat was somewhat congested, tongue was broad, thick, had a fur, moist at edges, no tremor, no deviation. The left inguinal gland was palpable.

The chest was well formed, symmetrical, equal supraclavicular and infraclavicular depressions, which were not marked. Respirations were slow, free, equal, and regular. Good pulmonary resonance, vesicular breathing, no adventitious sounds heard.

*Read before the Har Moriah Hospital Clinical Society, February 15, 1912.

Heart. Upper border at third rib; right border at left margin of sternum; left border at midclavicular line. The apex beat was visible and palpable, best heard in fifth outer space, midclavicular line; action was slow and regular. Muscular element was fair, basic sounds distinct, no adventitious sounds heard. The pulses were equal, small, regular, of good force and tension, no sclerosis.

The abdomen was small, thin, no pain, tenderness, or rigidity, no fluid, no masses. The liver showed dullness in the fourth space anteriorly, with flatness in the sixth space, anteriorly. The edge was not palpable. The edge of the spleen was also not palpable.

The extremities were moderately emaciated, with moderate pain and tenderness in the right knee joint, extreme pain, tenderness, immobility of the right wrist, elbow, and shoulder joint.

The examination of the genitals was negative, also the rectum.

After a stay of two, and a half weeks, additional signs were noted as follows: Left inguinal glands became enlarged and the axillary postcervical glands became palpable. Emaciation became marked. One evening, a blowing systolic murmur was heard at the apex, but was not present next morning or at any time after that. A widespread rash appeared about the fourth week, maculopapular in character, about one quarter of an inch in diameter. This was recognized as a septic rash. Spleen was enlarged and soft. About the sixth week pain and tenderness developed in the right tibia and it was thought a focus was developing there and a localization of the process was being attempted. The clinical picture, however, remained unchanged and these symptoms disappeared under treatment with poultices. The left inguinal glands became large and tender. No pulmonary symptoms or signs at any time. Repeated aural examinations were negative.

The blood count on admission was 23,600 white corpuscles, with ninety-one per cent. of polymorphs. A week later 19,800, with eighty-five per cent. polymorphs. Two weeks later his hemoglobin was sixty-nine per cent., red cells 2,800,000, white cells 24,000, with eighty-six per cent. polymorphs. A Widal test was negative; a search for the plasmodium was futile. Blood count was increasing, eight weeks after admission 29,000 leucocytes with eighty-nine per cent. polymorphs. From this time the blood count began to decrease until time of discharge. Von Pirquet and Moro tests were negative. On September 13th a blood culture was taken and was returned negative. This was repeated on the fifth and twelfth of October with similar negative results. During the first two and a half weeks the temperature was of the ordinary, remittent, and irregular type seen in cases of acute articular rheumatism. With only slight discrepancies thereafter for eight weeks the patient had an afternoon temperature ranging between 103.4° to 105° F. During the afternoon, the patient was moderately prostrated, and perspired profusely after cold sponging. At 8 p. m. the temperature dropped. At twelve noon it began creeping up. Pulse rate during the first two weeks varied between 84 and 104 to the minute. With the onset of the septic temperature it rose to between 102 and 120 a minute.

The examination of the urine was negative, except for a few days, when it showed numerous white and red blood cells, which disappeared on reducing the dose of salicylates which were being given in large doses at that time.

Diagnosis. No conclusive diagnosis was ever arrived at. On admission the patient presented all the clinical phenomena of an acute articular rheumatism. The only flaw in the picture was a rather too high polymorphosis of ninety-one per cent. The joints were distinctly involved and the migratory characteristic was present, so that in the course of his illness not only all the large joints, but the smaller ones of the hands and feet were affected. He did not respond, however, to antirheumatic treatment, and the long continued course seemed to contradict the clinical phenomena.

The diagnosis of a septic endocarditis was entertained for a time, but data to substantiate it were lacking. Blood cultures were negative. A murmur was present, but, as stated before, was only transitory in character, otherwise the action of the heart was regular; force good and not over rapid.

Because of the enlarged and tender inguinal glands a possibility of a septic thrombosis in one of the pelvic

veins was discussed. No mass was palpable. This view could not be disputed, but was only problematical. Malaria was ruled out by the therapeutic test and the absence of the plasmodium from the blood. Typhoid and paratyphoid were excluded by the various clinical tests and the course which the disease subsequently ran. Military tuberculosis was thought of, but no signs or symptoms could be found to substantiate it.

Prognosis. In spite of the obscure nature of this morbid condition and the prolonged intermittent fever and the marked emaciation, a favorable prognosis was always maintained. It was observed that assuming it to be a blood infection it was a mild, nonvirulent type, for there was no chill preceding the rise in temperature, the heart maintained its integrity, and the patient was comfortable between the febrile attacks.

Treatment. On admission the symptoms called for antirheumatic treatment. At that time we were trying out the alkaline treatment. After six days of this, the patient was put on salicylates, which in one form or another were used for one month without success. September, 8th we began injections of a colloidal silver preparation, intramuscularly and then intravenously, ten c.c. twice a day. At first it seemed to affect the course and there was a remission, but the infection gained a seeming immunity to this drug and continued as before. Antipyrine and quinine were given, but were of no avail. Sustaining and eliminative treatment was given throughout.

It was then suggested that a culture be taken from one of the pustules on the dorsum of the hand (some of the maculopapular eruptions on the hand had become pustular) and a vaccine made therefrom. The culture showed pure *Staphylococcus aureus*. Accordingly, on September 30th, the initial injection of 100,000,000 was administered. This was repeated on eight successive days. Then the dose was doubled and administered on alternate days for a week. Then a half billion was given twice a week. The first series seemed to effect a lower range of temperature, but the rises were regular. Our bacteriologist informed us that daily injections were not desirable as they brought on a negative phase in the action of the vaccine.

The second series brought about a more regular and lower range of temperature. The patient also became more comfortable, was less prostrated with the rise of temperature, and it became apparent that the patient was gaining on the infection. A fourth series of the vaccine was administered weekly. Coincidentally, or because of this, the seemingly interminable process with the regular rises in the temperature and accompanying prostration ceased. The patient's appetite increased and he took on weight.

CONCLUSIONS.

From the peculiarities of this case, and from the data mentioned here, it would appear to be a case of septicemia. However, the case presents these peculiar variations:

1. Repeated blood cultures were negative.
2. No one focus could be located.
3. Fever was not preceded by a chill.
4. The cause could not be traced.
5. The patient recovered.

140 SECOND STREET.

THE CURIOSITIES OF HINDU MEDICINE.

By BABA PREMANAND BHARĀTĪ,
Calcutta, Bengal.

From the crown of his head to the sole of his foot, the Hindu is nothing if not spiritual in his ideas. This is neither a joke nor a metaphor, but a stern fact. On the crown of each orthodox Hindu's head is a tuft of long hair which his religion enjoins him to keep, and which is intended to be a conductor of spiritual electricity out of and into his body, while a strictly orthodox Brahman is barefooted, or if he wears shoes they must be of a material which is a conductor of the best magnetism of mother earth—shoes made of Kusha grass or deer skin.

No wonder the Hindu's system of medicine is based on the highest spiritual idea too. He doctors and drugs himself spiritually. Except in the case of an illness, which will brook no delay in treatment, he begins taking drugs for any slow or chronic ailment from which he may be suffering, by consulting the stars, whose auspicious conjunctive influence will help its cure. He has a science upon which this belief is founded, a science which modern medical men will deride, but which, if deeply analyzed, in a truly serious and inquiring spirit, may not prove to be so very superstitious after all. According to the Hindu astrology, the whole earth, including men and animals, and products of the earth, is subject to the influences of the heavenly bodies. The more naturally man lives, the more he is in harmony with the workings of the immutable laws of Nature, over which the heavenly bodies rule. The moment he lives in defiance of these laws he is out of harmony with their workings and, therefore, out of harmony with their controlling forces, the heavenly bodies, the result of which manifests itself in disease. The stars are therefore consulted for selecting a moment in which to begin taking medicine—a moment in which their influences will be propitious in bringing about good results; put the mental and physical temperament, through the medicine, in harmony again with the laws of Nature, which is health. The philosophy of taking medicine under the benign auspices of the stars, is that man's actions are as much part of his body as his limbs and organs, and limbs and organs and their actions are all under the influence of the heavenly bodies.

The Hindus have reduced every branch of thought or doctrine to a system or science of their own, which Western scientists might do well to study, to their possibly immense profit. While Western medical science regards the human body from a severely physical point of view, and calls it only so much animal matter, the Hindu system of medical science as embodied in the *Ayur Veda*, or Science of Life, holds that the human body is composed not only of animated matter, but also of a mind and a soul, which latter is the source of the animation of both mind and material body. The *Ayur Veda* says man has three bodies, the physical, mental, and the spiritual. The spiritual is encased in the mental (otherwise called astral) and the mental is encased in the physical, like a sheath en-

cased in a sheath. The *Ayur Veda*, in dealing with the causes and cures of diseases to which man is subject, begins with those of the physical body, then it treats the causes and cures of the diseases of the mental body and ends with those of the spiritual body. The greatest disease of humanity, it says, is its liability to rebirth, which is caused by the mind's attraction to external objects and its cure by diverting its outward attraction to the inward soul, unbroken concentration upon which alone stops rebirth.

Hindu medicines, therefore, are of three kinds, spiritual, mental, and material. In the ages long gone by very little material drugs were used. Fasting, or regulation of diet, along with prayers to the Deity and the blessings of holy men were generally thought and found to be the best method for curing ailments. Now, people's minds having become grossly materialistic by touch with those of materialistic foreigners, material drugs are resorted to at once in cases of illness. If material drugs fail to cure, then only mental or physical treatment is resorted to in the shape of chanted formulas of mystic words, performing ceremonies to please the particular star under whose hostile influence the disease is found—by consulting the patient's horoscope—to have been brought about. If these fail to cure, then the blessing or magnetic touch of some holy man is sought for, failing to secure which continual prayers to the Supreme God are made, along with continual reading of some holy book by a learned and spiritual priest.

Spirituality is health according to the Hindus. Perfect spirituality means perfect health. Spirituality is manifested in the expression of the encased mind—the universal and the individual mind—while you can draw spiritual magnetism for your health from the same storehouse. There are saints who have thoroughly ensouled their mind by concentrating it upon the centre, the focus of spirituality. One word from their lips can drive away disease through a spiritual electrical word, or wave, as it were, and make you perfectly healthy. This, from the Hindu standpoint, accounts for the miraculous healings of Jesus Christ. The next best source of securing spiritual healing is to receive the touch from the hand of spiritual men just a little less developed than the saint whose very command is potent enough to kill all disease.

The very best source for obtaining a remedy is from the vibrations of sacred songs and music, and what is called in India *ecstatic dance*, in which the dancers sing until the spirit of the divine song moves them to dance.

The next best method is to secure health through faith. That is faith cure. If you have an intense faith in any divinity or saint, or even in any man, this concentration of mind will bring about equilibrium in mental and physical disorders.

The last, and according to the Hindus, the worst form of treatment—the worst compared with the foregoing processes—is the use of material drugs; but the Hindu holds that even what the modern world calls medicinal plants and shrubs are really spiritual plants and shrubs. Spirituality pervades the whole creation, but it manifests itself in some

special forms of life, such as in plants and shrubs. Like spiritual men there are spiritual animals, as well as spiritual trees and plants.

I had the pleasure and privilege of residing with a very highly developed spiritual man. I have not met with another man of such extraordinary genius and accomplishments in the East or West. He has not only read all Sanskrit works from the Vedas downward, all standard Sanskrit literature, religious, scientific, medical, moral, etc., but also is master as well of all branches of Western science and philosophy, old and new. What is more, he is a practical philosopher and physician. While living a life of genuine saintliness, in fact living, as far as is possible in this age, the truths of the philosophy he has studied, he treats sick people, the poor only, without charge, and distributes medicines free as well. His cures are wonderful. Almost all cases he takes up he cures, and this reputation draws rich people to his doors, which, however, are never opened to them for any amount of money. I have seen him go out to treat a poor patient in the depth of night under pelting rain, and do his utmost for the patient, even to the extent of giving him money to buy proper diet. To the calls of the rich, however, he never responds.

The system of treatment of this wonderful man is not always the same. The reason is that he knows so many systems so thoroughly—regular medicine and what is useful in homeopathy, biochemistry, *Ayur Veda*, etc. When a poor patient is brought to his home he examines him both according to Eastern and Western methods. Then he makes a diagnosis, the wonderful accuracy of which is the main source of the success of his cures. Once the diagnosis is made, it does not matter to him, which system of medicine he may take to bring about a cure. One particular advantage he possesses along with so many others—his power of magnetism, born of his truly saintly life.

Miracles of cure are rare now, at least where the influence of Western civilization prevails. More than a quarter of a century ago, the introduction of allopathic drugs and system of treatment, helped by the first influence of English education, threatened to kill the practice of indigenous physicians and to stop the use of indigenous drugs. Both are having a good time of it now, the glamour of English education having passed away and ancient Hindu thought having revived. People have begun to think that their own country's medicinal shrubs and plants and roots are best suited to their constitutions, so that native drugs and physicians are largely patronized, and their competition with foreign drugs and doctors is very keen. Vaidyas or Vaides, as Hindu physicians are called in Upper India and Bengal, are having an immense practice, thanks to the high charges of modern doctors and drugs. Before the introduction of Western medicine even the best of these Hindu physicians generally charged a fee of one rupee (thirty-two cents) and nothing whatever for pills and powders and but little for expensive oils and medicines. Now they charge not only as high fees as the doctors, and at times even higher, but also exorbitant prices for their prescriptions, which are sometimes double or treble those charged by

Western drug stores. Formerly these Vaides never had a dispensary or drug store, but used to prepare their medicines in their own homes, and carried a quantity of pills and powders mostly in use in a little bundle or a box as they went from one patient to another, either on foot or in a palanquin. Now they have opened regular dispensing or "medical halls," as they are called, like Western drug stores, where medicines are prepared and arranged in show cases and prescriptions dispensed after American methods.

Some of these native physicians have accumulated very large fortunes by the sale of their drugs, oils, and ointments; a few have become millionaires. These enormous profits have excited the greed of other physicians and of quacks and other capitalists. Kabiraji drug stores have in consequence sprung up all over the land, especially in large towns and cities. In all these places drugs are prepared under the superintendence of some Kabiraj according to the formulas of his different medicine books, and sold at all sorts of prices, generally high. In mixing the drugs these quacks and adventurers are far from scrupulous and resort even to cheap questionable substitutes of high priced drugs, a trick very often practised. In fever pills, in many cases, quinine is surreptitiously mixed with other indigenous drugs, and these pills are sold as pure indigenous medicines.

The enormous sale of these Kabiraji drugs is due to advertisement. Not only are advertisements put in all leading Anglo-American and vernacular papers, but a catalogue, sandwiched into a Hindu almanac, is prepared and circulated broadcast throughout the country. In these advertisements the myriad virtues of the medicines and drugs are set forth in glowing terms which, in some cases, are the despair of the smartest advertisement writers of America. From leading to the finding of a lost cow, to use a Hindu saying, to securing the blessings of heavenly ecstasy, the use of these medicines is sure to bring results. Carlyle's ninety-nine per cent. includes the population of India along with the rest of the globe, hence the expense of these advertisements is not incurred in vain.

Yet there are very learned and honest Kabiraji still in the country and they form the backbone of the profession. They hate to advertise and are very scrupulous in the preparation of their drugs according to the exact formulas and use of genuine ingredients. No wonder they prove the efficiency of their drugs, as they are skilled in diagnosis. These men and their medicines compete with European physicians and European drugs, and thus divide the field equally between the Western and Eastern systems.

Medical Students in France.—Bonnette, discussing in *Presse médicale* for May 18, 1912, the military requirements of naturalized citizens of France, points out that there were registered on January 11th, in the various educational institutions of France, 8,265 medical students, 7,400 men, of whom 742 were foreigners, mostly Turks, Bulgarians, and Rumanians, and 865 women, of whom 357 were French and 508 foreign.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXIII.—Under what circumstances do you find it advisable to prescribe the continuous use of alcohol? (Closed June 15th.)

CXXIV.—How do you treat streptococcal sore throat, in view of the possible sequelae? (Answers due not later than July 15th.)

CXXV.—How do you treat gonorrhoeal "rheumatism"? (Answers due not later than August 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to Question CXXII was awarded to Dr. Lionel C. Charbonneau, of Brooklyn, New York, whose article appeared on page 25.

PRIZE QUESTION CXXII.

A FAMILY MEDICINE CABINET.

(Continued from page 27.)

Dr. Leonard K. Hirshberg, of Baltimore, recalls that—

Not so many years ago, the family circle that failed to boast of its chamomile, sage, dandelion, and sassafras outfit, not to forget its molasses, sulphur, linseed oil, arnica, and laudanum, camphorated liniment, asafetida bags, and mullein leave talisman, was a heathenish home indeed. But no more; to-day the up to the second household, with its sanitary bathrooms, its flush plumbing, its micrometer meshed, antimosquito and antily wire screens, its undraped and uncarpeted smooth wood floors, painted, nonpapered walls, automatically ventilated and sunned rooms, as well as its steam and hot water heating arrangements, knows no more the dirty flax seed poultice or the merry germ ridden feather duster.

What with vacuum sweepers and aseptic water bags, with the one minute water heaters and sterilizers, the aseptic laundries, and marble tiled bathrooms, a new era has been entered upon by the family medicine chest. In families of the average sort, with no money to spare and two or more children to rear, such a chest cannot be equipped too completely. For if there be ninety and nine articles in it, the emergency will appear in the dead of some dreary night, and another disaster of titanic proportions may threaten.

One of the foremost necessities in our medicine chest must be a list of printed first aid directions. These should preferably be obtained from your own family physician. In such a brief article as this,

it would be out of place to suggest first aid directions. The next requisite is paregoric, with stringent directions as to dose for children under one year. Then follow syrup of ipecac, to allay the fears of parents as much as to loosen the mucus of supposed croup; a gargle or mouth wash such as boric acid, compound tincture of benzoic, or one of popular market articles, a soothing antiparasitic salve, proprietary, perhaps, if the composition is known; wintergreen and olive oil; ammoniated, soap, or camphor liniment for contusions, sprains, or localized swellings until the doctor arrives; vessels containing mustard; the latter with others holding vinegar, as valuable as alcohol in allaying mild fevers by external application; and pepper should be kept handy in the medicine chest, away from the kitchen cupboard.

Alcohol, whiskey, hydrogen peroxide, and glycerin all play modern rôles in the domestic drama of health and strength. Goose oil—"goose grease," as many people call it—petrolatum, turpentine, and tincture of iodine are domestic counter-irritants and subsequent applications. Independent of the well advertised douche powders and mucous membrane antiseptics, a teaspoonful of alum, potassium chlorate, and phenol to the quart of water, may be safely kept in the chest, in a fruit jar properly labeled.

A bit of essence of peppermint for colic, sodium bicarbonate, Epsom salts, a good vegetable pill for constipation, calomel, olive oil, and sulphur have their uses. Dusting powders, bismuth, magnesia, talc, or other mild mixture, as well as witch hazel, lead and opium water, and zinc ointment should be available for instant use. Antiseptic tablets or powders, such as bichloride of mercury or potassium permanganate, should either be packed in some unusual way or, to avoid accidents, be replaced by boric, benzoic, or zinc sulphate antiseptics.

Sticks of alum or potassium caustics may be dispensed with, for they are not absolutely sterile, but atomizers containing combinations of menthol, camphor, or similar essential oils should be at hand to spray noses, throats, and cuts. Collodion or liquid court plaster, adhesive plaster, capsicum plasters, and liberal amounts of sterile absorbent cotton, gauze bandages, and one of the antiseptic clay poultice preparations will stave off much trouble. Aromatic spirit of ammonia, starch, and smelling salts, not to speak of enema and douche bags, are always found in the chest. Lime water, milk of magnesia, sugar of milk, cream of tartar, tartar emetic, castor oil, and tincture of iron, may be as necessary as antidotes, as they are therapeutically useful.

The question of whether such usual drugs as quinine, Hoffmann's anodyne, senna, cascara, or spirit of nitre, should be continued in the family medicine chest, is now a matter for each physician to decide for each family. No good can be furthered in some cases, in others they should be within immediate reach. Much the same criticism may be made of any suggestions, it is true. Still, there can be no disagreement over the importance of having simple alleviating mixtures for acute eye, ear, stomach, throat, and skin affections. Bandages, dressings, clinical thermometers, plasters, picric

acid for burns, lint, pyrethrum powder for flies and mosquitoes, all tend to help the family, while by no means limiting the necessity for or the activity of the family physician.

Dr. George P. Laton, of Wakefield, Mass., asserts that—

A list of contents for a family medicine cabinet should be characterized by: 1, Simplicity; 2, harmlessness; 3, judicious incompleteness.

1. By simplicity is meant that there should be a very few drugs or articles for any one condition so as to give no chance for dangerous home experimentation, prevent long delay by home treatment when a physician is urgently needed, occupy as small a space as possible, and prevent possible confusion.

2. Harmlessness means that articles included in the list should in general be of such a nature that no harm could arise from too earnest efforts at home medication, and to lessen the danger of poisoning by overtreatment of any kind.

3. Judicious incompleteness is really the summing up of the general idea of the other characteristics, and means the omission of symptom masking or sedative drugs or articles which might cause too long delay in the summoning of a physician, yet at the same time making the cabinet available as a means of tiding over the little difficulties frequently arising in a family, especially a home with children.

The articles may be conveniently divided into (A) Medical supplies, and (B) surgical supplies.

(A) Medical supplies.

1. Cathartics, castor oil, magnesium sulphate (saturated solution), calomel tablets, gr. 1/10.

2. Anticold. Rhinitis tablets, for example, some containing smaller doses of tincture of belladonna and camphor.

3. Headache powder. The inclusion of such a drug may be questioned by some physicians, but since objectionable drugs for a similar purpose are sold in unlimited quantities and taken frequently in large doses, a small amount of phenacetine or some similar drug might be added to the list without too flagrantly violating the principle of the characteristics enumerated above.

4. Spirit of ammonia; 5, sodium bicarbonate; 6, a clinical thermometer; 7, a fountain syringe; 8, accurate graduates, and an accurate measuring teaspoon of one drachm capacity.

(B) Surgical supplies.

1, Carron oil, for burns or scalds; 2, sweet spirit of nitre, for dermatitis venenata or ivy poison, etc.; 3, sterile petrolatum; 4, collodion; 5, adhesive plaster; 6, sterile gauze; 7, sterile absorbent cotton; 8, bandages, two inch size; 9, alcohol, and, 10, emergency chart. The best sort is a small one about a foot square, such as is frequently included in "first aid" packages, or printed as an advertisement of drug houses.

The special feature emphasized in the foregoing list is the omission of such things as antidiarrhea mixtures, cough mixtures, and antiseptics. The reason for the omission of antidiarrhea mixtures is that diarrhea is frequently a very serious condition, treated better by a free sweeping out of the intestinal tract than by stopping the movements of the

intestine by opiates, astringents, or sedatives. Actually to stop a cough, which is not frequently wise, requires the use of such an amount of opium as to be dangerous for a lay person to handle. Antiseptics, with the exception of alcohol, are not needed in a household which has a fire to boil water on. Alcohol is included in the list as much for its rubefacient, cleansing, and mental splint properties, as for its value as an antiseptic.

Proper labeling should be pursued; the dose for child and adult be given for each drug, and the general conditions for which the drug is used should be put on the label. The emergency chart is best hung on the door of the cabinet, for this cabinet need never be locked.

All these supplies, by actual experiment, may be packed in a cabinet containing one shelf, the dimensions of the cabinet being twelve inches wide, four inches deep, and seven inches space between the shelves.

Dr. William B. Behrens, of New York, writes:

Following is a suggestion of medicines, etc., necessary for an efficient household medicine cabinet. The containers labeled with the name of contents and the dose for children and adults. The bottles are to be grouped as follows:

INTERNAL.

Ammonia, aromatic spirits of	3 oz. bottle
Castor oil	" "
Ginger, tincture of	" "
Ipecac, syrup of	" "
Lime water	" "
Nitre, sweet spirit of	" "
Peppermint, essence of	" "
Quinine pills, 2 grains	4 doz.
Rhubarb and soda mixture	3 oz. bottle
Rochelle salts	" "
Sun cholera mixture	" "
White pine, compound syrup of	" "

EXTERNAL.

Alcohol	3 oz. bottle
Camphor, spirits of	" "
Collodion (with brush) flexible	" "
Iodine (with brush)	" "
Hydrogen peroxide	" "
Sweet oil	" "
Witch hazel	" "
Sodium bicarbonate	" "
Boric acid powder	" "
Carbolized salve	3 oz. jar
Mustard powder	" "
Oil of cloves	2 dr. bottle
Talcum powder	1 can

MISCELLANEOUS.

4 one inch bandages.
3 two inch bandages.
1 three inch bandage.
1 four inch bandage.
1 package sterile gauze.
1 roll oiled silk.
1 roll three inch adhesive plaster.
Safety pins (large and small).
Package of court plaster.
Package of absorbent cotton.
1 small forceps.
Pair of scissors.
Bath thermometer.
Fountain syringe.
Hot water bag.
Fever thermometer.
Tourniquet.

The arrangement of the medicines, etc., is so placed under appropriate heads so as not to require

further explanation. The contents of this cabinet will be found amply sufficient, anticipatory of regular medical attendance, should the latter prove necessary.

Dr. B. F. Rea, of La Fayette, Ala., observes:

I think the family physician could select a few dressings and remedies, with instructions how to use, which would be of great benefit in emergencies before the doctor arrives. The remedies might also be of use to the doctor, who is often called hurriedly, taking very little with him. I should recommend for the family medicine cabinet sterile gauze and bandages, with bichloride tablets, with instructions, in case of wound, to dissolve a tablet in a half gallon of sterile water, and apply gauze wrung out of it to the wound, and bandage, as a temporary dressing, until arrival of the doctor. I should recommend the following medicines: Ipecac, castor oil, paregoric, magnesium sulphate, one grain calomel and soda tablets, mustard plasters, grain alcohol; the ipecac to be given as an emetic in case of poisoning. The alcohol is for carbolic acid poisoning. The paregoric and mustard plasters are for colic, etc. I might add ammonia water for stings of insects. Many women, with the foregoing, could accomplish a great deal before the doctor arrived, and often all he would have to do would be to inform them that they had done all that was necessary. I should like to add that a fountain syringe should also be in every family medicine cabinet.

(To be concluded.)

Correspondence.

LETTER FROM LONDON.

Discussion on Syphilis at the Royal Society of Medicine.—Meeting of the General Medical Council.—The Case of Bell versus Bashford and the British Medical Association.

LONDON, ENGLAND, July 5, 1912.

An important discussion on syphilis took place at a special meeting of the Royal Society of Medicine at its new home, 1 Wimpole Street. It was opened by Sir Henry Morris, who entered at some length into the history of the disease. He said there was evidence that Shakespeare knew the etiology, symptoms, and the treatment of every stage of syphilis.

Mr. D'Arcy Power called attention to the manner in which the treatment of syphilis had been revolutionized during the last seven years by the discovery of its cause and the consequent improvement in its pathology. The modern treatment of syphilis dated from the years 1905-9. Schaudinn discovered *Treponema pallidum* in 1905, Wassermann published his test in 1907, and Ehrlich issued his remedy in 1909. These dates were of importance as showing the recent character of their scientific knowledge of syphilis while they emphasized the need for caution in making dogmatic statements about a disease which had such long continued and far reaching results. Mr. Power stated that mercury was given in a very haphazard manner in all cases of venereal disease. In this country he attributed the rational administration of mercury to the teaching and practice of Sir Jonathan Hutchin-

son, who was among the first to employ the drug to cure the disease and not merely for the relief of symptoms. He was hampered by the absence of any test for cure and was obliged to depend upon time and circumstances to decide whether or not the syphilis was eradicated.

The first variation from the methodical and routine administration of mercury by the mouth or by inunction was the use of intramuscular injections. Mr. Power believed this method to be well adapted for the army and navy and for hospital practice, but less fitted for private practice. It needed a certain amount of skill and a rigid cleanliness if untoward accidents were to be avoided. Mr. Power stated that he was unable to speak from personal experience of the arylarsenates and soamin, but he thought very highly of 606, or salvarsan. He pointed out, however, that salvarsan was an adjuvant to mercury and that in the light of their present knowledge it should not be used in place of mercury. Two great facts stood out in connection with the action of salvarsan in syphilis. It cured the symptoms in a shorter time than mercury, and it could be employed as a test, because in many cases when salvarsan was given to a syphilitic patient whose Wassermann test was negative the first effect of the injection was to render the reaction positive, although in a short time it again became negative. The outcome of his experience with salvarsan was that it had proved especially useful in cases of chronic superficial glossitis, in active syphilitic periostitis, and in ulcerating syphilides of the skin. It was less serviceable in craniotabes, in osteitis, and syphilitic arthritis. Mr. Power also stated that he had met with no serious accidents from its use.

At the last meeting of the General Medical Council the case of Dr. J. R. Wallace was again considered. It will be remembered that he was charged with associating himself in his professional capacity with the Sandow Curative Institute. At the conclusion of the proceedings on November 28, 1911, the following decision of the council was announced by the president: "Mr. Wallace, the council are not satisfied with the evidence as to your conduct which you have produced to-day. They have accordingly decided to give you a further opportunity of producing more satisfactory evidence regarding your professional conduct, and with this object they have again postponed judgment until the next session of the council." The complainants were the British Medical Association and were represented by Mr. Alfred Cox, the medical secretary, and Mr. Hempson, the solicitor. Mr. Cox addressed the council on behalf of the complainants and put in certain advertisements of the Sandow Institute which had appeared in the *Times*, *Daily News*, *Quiver*, and *Daily Mail*. Mr. Neilson, solicitor for the defendant, produced evidence to show that the Sandow Institute did no more than many other institutions throughout the country which published the names of medical men employed by them.

The council on the evidence came to the conclusion that Doctor Wallace and others had been guilty of infamous conduct in a professional respect and he did not seek to go beyond that finding. Immediately thereafter Doctor Wallace's solicitor wrote to the registrar of the council for advice as to what

his client should do in the circumstances, and was told in reply that the council could not add anything to what it said at the close of the inquiry. The president of the council, at the conclusion of the evidence, announced that the name of Dr. James Robertson Wallace would be struck off the register.

The case of Bell *versus* Bashford and the British Medical Association has aroused considerable attention. The lay press unanimously agrees that the verdict of £2,000 damages and costs awarded to Doctor Bell is a just one, but the medical profession is not unanimous. Very few medical men believe there is anything in Doctor Bell's theories and it was quite conclusively demonstrated at the trial that Doctor Bell's method of diagnosing cancer from the blood was quite wrong. Nevertheless, there was not sufficient evidence to show that Doctor Bell did not hold his views in good faith, although perhaps ignorant or misguided. As the Lord Chief Justice said, it was not for the jury to decide whether Doctor Bell's treatment was right or wrong, but whether the views held by Doctor Bell, though wrong, were held in good faith and not for the purpose of gain. Apparently the jury decided that Doctor Bell believed in his own theories and gave him the verdict. Doctor Bashford will meet with strong sympathy among the medical profession in this country.

Therapeutical Notes.

Anesthesia in Children.—F. W. Pinneo, in *Archives of Pediatrics* for January, 1912, describes an apparatus he has designed for the continuous administration of an air-ether mixture to children in operations in and about the mouth. The aim is to leave the surgeon free to operate without interruptions when removing tonsils, adenoid growths, or cervical glands, or remedying a hare lip or cleft palate. Air is maintained, under slight pressure, in two ordinary atomizer bulbs, controlled by a stop-cock. These are connected with a bottle containing ether, which in turn communicates with an empty bottle, whence a rubber tube leads to a curved metal terminal for directing the ether vapor into the mouth or to a rubber catheter inserted into the nostril. Both bottles, when in use, are hung in a vessel containing hot water. The method thus constitutes a "pharyngeal insufflation" of warmed air-ether mixture.

Treatment of Acute Catarrhal Jaundice.—Oppenheim, in *Progrès médical* for January 13, 1912, states that he believes it unnecessary to resort to an exclusive milk diet in this affection, as has been until lately so often recommended, but that in combination to one litre of milk or skimmed milk per diem, various vegetable articles of food, e. g., purées of dried vegetables or potatoes, pastes, such as macaroni, well cooked green vegetables, or cooked fruits, may generally be permitted. Constipation, if present, should be overcome and an attempt made to free the biliary passages by administering every morning and evening an enema of one litre of cold, previously boiled, water (15° C.), which should be retained from ten to fifteen min-

utes; if the chill of the cold water should bring on colic, warm water should be substituted.

As regards drug treatment, the author prefers not to give calomel, but advises the following:

R Sodium salicylate, } of each, 0.3 gramme;
Sodium benzoate, }
Powdered rhubarb, 0.15 gramme.
M. fiat pulvis.

Three cachets, each containing these ingredients in the amounts given, should be taken by the patient daily, before meals. Cachets or pills of ox gall may be employed instead. Hexamethylenamine should be administered without fail in four cachets of 0.5 gramme each per diem.

Meteorism may be counteracted by giving, after each of the two heavier meals of the day, a cachet containing

R Charcoal, } of each, 0.4 gramme;
Bismuth subsalicylate, }
Powdered nux vomica, 0.02 gramme.
M. fiat pulvis.

Itching of the skin, often the most distressing symptom of all, requires the taking of a daily alkaline bath of ten minutes' duration, in water containing from 100 to 150 grammes of sodium bicarbonate, at a temperature of 35° C. The bath should be followed by application of a hot lotion of coaltar (two tablespoonfuls to the litre), of vinegar to which phenol has been added, or of two per cent. chloral hydrate. After the lotion, the following inert powder should be dusted over the skin, without previous drying:

R Bismuth sulcarbonate, } of each, 20 grammes;
Zinc oxide, }
Powdered starch,68 grammes.
M. fiat pulvis.

If the itching continues notwithstanding, a mixture of one part of chloroform with three parts of glycerin may be painted over the skin two or three times daily. Finally, baths of static electricity with the effluve may be administered; these often relieve itching of hepatic origin more promptly than any other measure.

Treatment of Skin Affections.—C. R. Love, in *American Journal of Dermatology* for May, 1912, states that in skin disorders which seems to be associated with an intestinal disturbance, e. g., acne rosacea and acne indurata, he has found the internal administration of hexamethylenamine to give excellent results. His method of procedure in these cases is to correct any faulty conditions of hygiene, prohibit all starch and sugar for about one week, and add a quart of buttermilk or one of the lactic acid fermentation products of milk to the diet. In addition, the patient drinks at least a quart of water a day, uses little, if any, salt, and takes from five to seven grains of hexamethylenamine in six ounces of water every four or six hours. No local treatment is given, except for a temporary cosmetic effect.

The hexamethylenamine is continued for a month or six weeks. Occasionally it causes slight irritability of the bladder; this is usually controlled by reducing the dose and increasing the amount of water ingested. Some old, chronic cases have relapses in a month or two after the treatment has been discontinued, but they usually show prompt improvement upon resumption of the drug.

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CHARLES E. DE M. SAJOUS, M.D., LL.D.,
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NEW YORK, SATURDAY, JULY 13, 1912.

PROFESSOR METCHNIKOFF'S OWN AC- COUNT OF HIS LATEST DISCOVERY.

A letter to the distinguished investigator into the problems of old age, asking if he would care to speak directly to the medical profession through the *NEW YORK MEDICAL JOURNAL*, regarding his recent reported discovery of what may be called a bacillus of youth, elicited a courteous response from the Institut Pasteur, dictated by Professor Metchnikoff. Enclosed was a copy of his paper written in collaboration with Eugène Wollman, and read before the Académie des Sciences, June 10, 1912, entitled Experiments on Intestinal Disinfection, which we summarize somewhat tersely.

Two workers in the Pasteur laboratory established the fact that indol administered in small doses to rabbits, guineapigs, and macacos, produced organic lesions, remarkably similar to the lesions observed in old age, in the vascular system, the kidneys, the liver, and the brain. Metchnikoff and Wollman conclude, therefore, that senility is caused largely by poisons of the intestinal flora, notably by the aromatic series, indols and phenols. A natural question was, how could the formation of these poisons be prevented?

It was found that, generally speaking, a vegetarian diet did not prevent the formation of poisons, nor did a heavy meat diet seem greatly to favor

their production. A series of experiments, therefore was undertaken on white rats, which seem to be able to live indefinitely and without difficulty on one article of diet.

It is food of an animal nature that furnishes most aromatic poisons, the maximum being given by meat and eggs, the white of egg especially. White cheese gives less than certain vegetables, notably potatoes and bananas, which are highly toxic in this sense. Puree of peas and white bread, although rich in albumin, furnish much less indol and phenols. Least of all is given by the vegetables rich in sugar, such as beets, carrots, and dates; hence a natural inclination on the part of the experimenters to associate with vegetables furnishing much poison those rich in sugar. The urine of rats fed on a mixture of potatoes and dates was very poor in indoxyls.

The toxine producing vegetables are much less easily absorbed than the sugars, which are disposed of in the stomach and small intestine; they go on to the furthest point in the bowel. It would, therefore, be advantageous to create a source of sugar in the large intestine. As it was impossible to bring sugar into the large intestine by means of substances rich in it, the investigators had the idea of exciting its formation by means of microbes at the expense of starchy foods which are absorbed much less quickly than sugar and, therefore, reach the large intestine without difficulty. Many microbes capable of transforming starch into sugar exist in the intestinal flora of man and animals, but many of them attack albuminoids also, thereby increasing instead of diminishing the total amount of aromatic poisons. Only with an amylolytic microbe from the intestinal contents of a dog, which does not affect albuminoids, could good results be obtained. Given with cooked potatoes this microbe notably diminished urinary indoxyl and phenols, not only in the rat, but also in man. Given with other foods rich in starch, this same glycogenic microbe gave no appreciable results.

After trying several combinations with their rats, the experimenters found one which generated little if any poison. This combination was: 1. Ham and potatoes, which, as aforesaid, generate toxines freely, and, 2, beets and dates, which act in the opposite manner by furnishing sugar. To make the potatoes act in the same way, they added the amylolytic microbe. As it is not the sugars themselves, but the acids produced at their expense, that prevent intestinal infection, they added to their rat food pure cultures of *Bacillus lactis bulgaricus*, which yields lactic acid in large quantities. Thus modified, the regimen finally suppressed all urinary poisons of the aromatic series.

Finally, not only in rats, but in man himself the investigators achieved the notable triumph of replacing a hurtful intestinal flora by a cultivated and inoffensive one. The human diet consisted of about 120 grammes of meat daily, together with 500 to 600 grammes of scientifically soured milk, vegetables, fruits, etc., to which cultures of lactic acid bacilli were added. The eminent chemist, Berthelot, made the urinary analyses required in the foregoing investigations.

Such are the first steps, reported by Professor Metchnikoff himself, toward preventing man from poisoning himself and thus attaining old age prematurely. Our thanks are due to the eminent bacteriologist for furnishing us so promptly and so courteously with an authentic report of his interesting and vastly important experiments.

THE PURITY OF THE DOCTOR'S OWN DRUGS.

In all the machinery which has been provided for the detection of adulterated and impure drugs there is none for the supervision of the character of the drugs dispensed by physicians direct to their patients. The physician purchases from dealers whom he presumes to be trustworthy, and after the drugs have come into his possession no legal provision is made for their inspection. If the physician happens to be supplied by a dealer outside the State the transaction is of the nature of interstate commerce and the goods coming into the State from without are subject to inspection by the national authorities if taken in transit. There is in this way some check upon the quality of the drugs shipped into the State through the fear which the dealer has of governmental inspection. Where the purchase is made by the physician within his own State, however, the federal authorities have no jurisdiction and there is no way in which the quality of the drugs purchased can be checked unless the physician undertakes their analysis at his own expense.

The charge was made at the Rochester convention of the New York State Pharmaceutical Association that dealers had taken advantage of this condition of affairs and sold to physicians drugs which did not comply with their professed standard and which would not pass examination by any competent authority. Indeed some of the speakers went so far as to intimate that many dispensing physicians were more careful as to the price than as to the quality of the drugs purchased for their own dispensing. We cannot believe that this latter charge is well founded, for any laxity in this direction would be fatal to the physician's interest.

If he administers inert drugs and the patients are not benefited, he loses his standing. It seems that even the lowest form of self interest would prompt the physician to dispense only drugs of the highest efficiency.

There may be more than a modicum of truth in the charge brought that manufacturers foist on the dispensing doctor drugs of inferior quality. From the very nature of the case such practices are less fraught with danger of detection than if the drug were sold in the ordinary channels of trade. Drugs in the drug store are subject to the inspection of local authorities; those in the physician's office are not subject to any inspection except such as he may choose himself to make. There would be a very liberal margin of profit for the unscrupulous dealer who might choose to furnish tablets of deficient strength of such expensive drugs as heroine, morphine, and aspirin. The only danger of detection in the ordinary routine would arise from the fact that the physician might observe the lack of physiological activity, and the utmost to be feared from such an observation is the loss of patronage of that particular doctor, a fear not so potent for the restraint of the evil doer as the fear of detection and punishment by legally constituted authorities.

As the laws now stand there is no adequate supervision of the quality of drugs sold to physicians for their own dispensing. No physician would knowingly dispense a drug of inferior quality, but we should like to learn if any of our readers have found occasion to criticise the quality of drugs sold them for their own dispensing. If the charges which have been brought against the quality of drugs dispensed by doctors are true, steps should be taken to improve it, and the doctors themselves will be the first to demand that such steps be taken.

SPLENIC PUNCTURE AS A DIAGNOSTIC PROCEDURE.

In an excellent review of infantile kala azar, published in a recent number of the *Kala Azar Bulletin*,¹ the value of splenic puncture in establishing the diagnosis is dwelt upon. While there is a tendency to look upon this operation as dangerous, this does not appear to be the experience of those who have worked upon the disease. The technique of spleen puncture after Nicolle is described as follows:

The child is placed in the dorsal decubitus and kept perfectly still. After the skin over the spleen has been disinfected by applying a drop of tincture of iodine, the needle of the sterile syringe is passed into the spleen. It is essential for the needle to be perfectly dry; otherwise the blood

¹*Kala Azar Bulletin*, 1, 2, March 22, Sleeping Sickness Bureau, Royal Society, Burlington House, W. (Literature), London, 1912.

taken will be hemolyzed and imperfect preparations will result. The drying may be effected by passing the needle through the flame or placing the whole instrument in the oven for a short time after sterilization. A short needle of small calibre is all that is necessary. The spleen is immediately below the abdominal wall which is much wasted and not more than a few millimetres in thickness. A steel needle which punctures readily is recommended in preference to one of iridium platinum which tends to tear the tissues. For each performance a new needle is employed. If blood enters the barrel of the syringe, aspiration must at once cease, for the blood tends to dilute the splenic tissue first drawn up into the needle and renders search for the parasites more difficult. The best results are obtained when two or three aspirations draw up splenic pulp only into the needle without admixture of much blood. The contents of the needle are used for making films and culture.

Jemma and Di Christina write that they have performed the operation about two hundred times without having the least accident, so that they regard this as the best means of diagnosis, provided that ordinary aseptic precautions are taken. Nicolle says that the operation is rendered very simple on account of the enlargement of the spleen, that it appears quite inoffensive, and that he has never observed the least accident result from the puncture. In a later publication, Nicolle and Lévy remark that one can repeat the operation of spleen puncture in the same case without danger, provided ordinary precautions are taken. Visentini, writing of the cases seen by Gabbi and his pupils in Messina and Calabria, remarks that spleen puncture when carefully performed is a slight operation and, though they have undertaken it in numerous cases in Sicily and Calabria, they have not noted any ill effects. Critien has noted no untoward results in a limited number of cases in Malta. Though the operation of spleen puncture in these infantile cases has been now performed in hundreds of instances by various observers, all are agreed on its harmless nature.

THE BASHFORD VERDICT.

We have had occasion in these columns to praise the labors of Doctor E. F. Bashford, the director of the Imperial Cancer Research Fund of London. It is with regret, therefore, that we learn of the verdict which imposed upon this distinguished investigator, and indirectly upon the British Medical Association, a penalty of ten thousand dollars damages in favor of the plaintiff, Dr. Robert Bell. The latter, a physician in good standing, had been denounced as a quack by Doctor Bashford in an article published in the *British Medical Journal*, because he had claimed curative results in the treatment of cancer by means of a nonsurgical method.

While thus paying a tribute to Doctor Bashford, we cannot but feel that some investigators too read-

ily accuse their practising colleagues. Whether Doctor Bell has discovered a cure for cancer remains to be seen, but the measures to which he resorts have been clearly described by him and have been known to bring about, in some cases at least, a change in the condition of the patient amounting practically to a cure. This should not cause the physician by any means to give preference to Doctor Bell's method when surgical procedures are still possible, since the latter afford a far greater proportion of permanent cures, but equity demands that his results receive the benefit of impartial scrutiny, at least before an adverse judgment is published. As to opprobria, they are never in order.

It must not be overlooked that the practising physician has always been a successful pathfinder because clinical medicine is itself a vast field of experimental investigation. This applies to physiological as well as to pathological problems. The most eminent of living physiologists, Professor Pavloff, of St. Petersburg, wrote some years ago that physicians in not a few instances had given "a more certain verdict concerning physiological processes than the physiologist himself." This might well apply to the case in point. It is but a few years (1905) since the investigator whom English justice has so severely mulcted, had occasion to write: "In our investigations we have obtained evidence against all the explanations yet advanced as to the cause and nature of cancer . . . at present any attempts directly to ascertain the cause and nature of cancer are surrounded by so many sources of fallacy that they remain to-day as unprofitable as they have been in the past." It would be difficult to say much more, even to-day, of our knowledge of the "cause and nature" of this dread disease. Investigators in this special field have every reason, therefore, to be reserved in their estimates of those of their practising colleagues who can point to any degree of success, since this result, faithfully scrutinized, might lead the pathologist to more fruitful fields.

All this applies equally well to every department of experimental medicine.

A VISION OF ENORMOUS PRACTICE.

At a meeting of the Select Committee of the House of Commons on Patent Medicines, held on June 20th under the presidency of Sir Henry Norman, we learn from the *Lancet* for June 29th that the distinguished chairman observed to a witness that he had heard that many eminent medical men had their prescriptions lithographed. Sir Henry is a layman of probably unusual intelligence, and that this ludicrous idea concerning the possible extent

of a doctor's practice should have been entertained by him gives an idea of the fathomless depths of ignorance concerning medical men and their customs to which outsiders may sink. Legislation concerning the practice of medicine, the public health, etc., in both Great Britain and the United States, is, moreover, usually in the hands of men much less intellectual and well informed than Sir Henry Norman.

BACILLUS LACTIS BULGARICUS IN INFANTS.

Clock (*Journal of the A. M. A.* for June 29, 1912) calls attention to the fact that buttermilk has been used in infant feeding because, on account of its chemical composition, it was supposed to be adapted to certain abnormities of digestion and metabolism. It is not, however, always adapted to the caloric needs of the infant and the results have not been uniformly good. The failure of ordinary buttermilk in the treatment of intestinal conditions is because it does not contain a bacillus that will survive ingestion, multiply in the intestine, and then produce sufficient nascent lactic acid to counteract and destroy the bacilli of putrefaction. The only beneficial effects are due to the large amount of soluble protein in finely subdivided form which favors its easy digestion.

Since intestinal toxemia is believed to cause many diseases, it has been thought that the introduction of lactic acid bacilli into the intestine might possibly arrest the growth of putrefactive and other bacteria. Clock experimented, therefore, with a pure culture of *Bacillus lactis bulgaricus*, dried, mixed with milk sugar, and made into a tablet, one of which dissolved in a teaspoonful of water was given after every bottle feeding; in some cases both before and after feeding. Excellent results were obtained in the reported cases (twenty-two) without change of diet. Decided improvement followed in every case within twenty-four hours after beginning treatment, and this was followed by a steady increase in weight and a restoration to health. No other therapeutical measures were used.

WHY LABOR TAKES PLACE.

Ancel and P. Bouin are reported in *Semaine médicale* for June 26, 1912, as having detailed to the Académie des Sciences on June 10th their researches on the problem of why labor actually takes place. They remarked that the problem resolved itself into two questions, first, why does the uterus tolerate the presence of the fetus during gestation; and, second, why does this tolerance disappear at a certain moment, always the same for each animal species?

Their reply was that during gestation tolerance of the fetus was due to endocrin glands which developed in the genital tract during the course of pregnancy, and that labor was due to the expiration of uterine tolerance brought about by the stoppage of these internal secretions.

THE YELLOW FEVER BUREAU BULLETIN.

In April, 1911, a Yellow Fever Bureau *Bulletin* was started by the Liverpool School of Tropical Medicine under the auspices of the late Sir Robert Boyce. The journal appeared monthly. It has now been decided to publish the bulletin quarterly and to enlarge its field so that it will contain, beside the subjects dealt with up to the present, the literature relating to dengue and papataci fever, both of which will be treated on lines parallel to yellow fever. During the year of its existence the bulletin has become a centre of exchanges of news, investigations, and reports as to yellow fever and has been as such a very successful journal. We hope that with the increased scope the usefulness of the bulletin will remain, notwithstanding its quarterly appearance.

Obituary.

JUAN GARCIA PURON, M. D.,
of Nueva, Spain.

Doctor Purón died at Nueva, Spain, on June 9, 1912, in the fifty-ninth year of his age. He had practised in Spain for the seven years preceding his death, mainly in diseases of the eye, ear, nose, and throat, and his work lay almost exclusively among the wretchedly poor, his self sacrifice and scrupulous attention to every detail of treatment having contributed in no small measure, according to the statement of his attending brother practitioner, to his premature demise. Doctor Purón graduated in Mexico as a physician nearly thirty years ago, and subsequently practised in New York under the endorsement of his diploma by the University of the State of New York. He was a notable linguist and acted, when here, as foreign editor for a large New York medical publishing house, besides contributing frequently editorial articles to the *NEW YORK MEDICAL JOURNAL*. He translated into Spanish Dr. T. Gaillard Thomas's work on gynecology, his version eliciting high praise from the author. He was universally beloved, and his funeral at Nueva took on the nature of a State ceremonial, his patients coming in hundreds from the surrounding mountains and hamlets to kneel along the line of the cortège. He left a widow and two children, the former a sister of Jeannette L. Gilder, of New York.

Medical Law.

VII. RECOVERY OF COMPENSATION.

In the case of *Desmond v. Kelly*, 146 Southwestern Rep. 99, an action had been begun by a physician against the father of a minor son, for service rendered to the son while visiting at his grandfather's home in a neighboring town. It appears that the son was sick about six weeks, suffering from a severe case of typhoid fever, during which time the doctor attended him as often on some days as two or three times, and at the end

of the period along with the trained nurse and the boy's father accompanied the boy to his home. It also appears that the father did not request the rendering of the services, although he knew they were being rendered. It also appears that he wrote to the doctor, he did not know how many visits the doctor had made to his son; that he wanted him to give the days and dates of each visit, stating that he had paid him \$20 the day the doctor brought the son home. In another letter he wrote the doctor that he had paid him \$10 and would try and give him a little more each pay day. It also appeared that the father was present once when the doctor was treating the son and expressed his satisfaction. The petition after giving credit to the defendant for \$30 asked judgment for \$197.50. After the trial a verdict was rendered by the jury for \$116.30, and the defendant appealed from the judgment entered thereon.

The appellate court, after referring to the fact that the evidence of the plaintiff was somewhat indefinite as to the number of visits the doctor had made in attendance on the son, reviewed the facts above set forth, and also the fact that it was shown upon the trial that \$1.50 for a day visit and \$2.50 for a night visit of a doctor to a patient was a reasonable charge, and that \$20 was a reasonable charge for the services of the doctor in going with the son to his home, and expressed its conclusion as follows:

In view of all the evidence and the reasonable inference to be drawn therefrom, it was sufficient to support the judgment. In view of the common knowledge that in severe cases of typhoid fever doctors visit their patients almost daily, and sometimes several times each day and often at night, and the other facts and circumstances in evidence, we think the verdict of the jury for \$116.30 was not excessive.

Upon the appeal the defendant also urged that the plaintiff had failed to prove the allegations in his petition that the services were rendered at the instant request of the defendant and that they were necessary. In passing upon this Mr. Justice Broadus said:

We think the evidence tended to support the allegation of the petition. Defendant knew the doctor was attending the son and rendering the necessary services. This was sufficient to raise the presumption that such services were rendered at his request. But it was not required that any such request should be made, in order to render the defendant liable for their reasonable value, if they were such as come within the meaning of the term "necessaries." It is argued that the defendant was not liable unless it was shown that he failed to furnish such services. It is clear that he failed to furnish them and besides he approved of them, and nothing could make it more binding. Proof of the necessity for the services, the approval of them while they were being rendered, and a promise to pay afterward, we think sufficiently supported the allegations of the petition.

The point was also raised on the trial, and upon the appeal that because plaintiff omitted to allege in the petition that he was a regularly licensed physician, he should not be permitted to give any proof of services rendered as such. This point was disposed of by the following words:

The objection was not well taken. It is not necessary for us to discuss the question whether an unlicensed doctor can enforce payment for his services as such; for it was not made an issue in the case. Until that matter was made an issue the presumption would be that the doctor was a regularly licensed practising physician. It is a rule

of law that, nothing being shown to the contrary, men do obey the law. If it was true that the doctor was not licensed as such, defendant should have raised the question by answer, in order to have availed himself of that fact as a defense to the action.

News Items.

American Hospital Association.—The fourteenth annual meeting of this association will be held in Detroit on Wednesday, Thursday, and Friday, September 24th, 25th, and 26th, under the presidency of Dr. Henry M. Hurd, of Baltimore. Dr. J. N. E. Brown, 90 Charles Street, East, Toronto, Canada, is secretary of the association, and he will be glad to furnish complete information regarding this meeting.

North Carolina Medical Society.—At the annual meeting of this society, held recently in Hendersonville, the following officers were elected: President, Dr. J. P. Monroe, of Charlotte; vice-presidents, Dr. F. R. Harris, of Henderson; Dr. E. S. Bullock, of Wilmington, and Dr. L. B. Morse, of Hendersonville; orator for 1913, Dr. H. D. Stewart, of Monroe; essayist, Dr. John T. Burrus, of High Point; leader of debate, Dr. J. H. Harper, of Snow Hill. Next year's meeting will be held at Morehead City, in June.

Northern Tri-State Medical Association.—At the nineteenth annual meeting of this association, composed of physicians from Michigan, Ohio, and Indiana, held in Detroit, on Tuesday, Wednesday, and Thursday, July 2d, 3d, and 4th, officers for the ensuing year were elected as follows: President, Dr. V. C. Vaughn, dean of the medical faculty of the University of Michigan, of Ann Arbor; vice-president, Dr. C. C. Terry, of South Bend, Ind.; secretary, Dr. G. W. Spohn, of Elkhart, Ind.; treasurer, Dr. J. A. Weitz, of Montpelier, Ohio. The convention next year will be held in Toledo.

Personal.—Dr. William Pepper, of Philadelphia, has been appointed dean of the Medical Department of the University of Pennsylvania, to succeed Dr. Allen J. Smith, who resigned recently. Doctor Smith will retain the chair of pathology in the institution.

Professor Philip B. Hawk, of the University of Illinois, has been elected to the chair of chemistry in the Jefferson Medical College, made vacant by the resignation of Dr. James W. Holland.

Dr. Howard Augustus Lathrop has been appointed assistant professor of surgery at Harvard Medical School, Dr. John Lewis Bremer, assistant professor of histology, and Dr. Marshall Fabian, instructor in comparative pathology in the same institution.

Dr. Howard S. Anders has resigned as professor of physical diagnosis at the Medico-Chirurgical College, Philadelphia, a chair he has held since 1897. His resignation will take effect in the fall.

The Psychopathic Hospital, Boston, at 74 Fenwood Road, was opened for public inspection June 21st and for the reception of patients two days later. The institution is officially a department of the Boston State Hospital and its business arrangements are to be under the charge of the superintendent of the Boston State Hospital, Dr. Henry P. Frost. The director of the institution is Dr. E. E. Southard, pathologist to the Massachusetts Board of Insanity and professor of neuropathology in the Harvard Medical School. The chief of the medical staff is Dr. Herman M. Adler, formerly of the department of theory and practice of the Harvard Medical School, and more recently, pathologist to the Danvers State Hospital. The immediate executive arrangements are under the control of Dr. Stephen E. Vosburgh, formerly assistant physician at the Boston State Hospital. The hospital contains 100 beds, fifty of which are in a separate pavilion called the reception ward, and fifty are on the top floor of the main building in the so called observation ward. The reception ward has a clearing house function for the insane of Boston. The observation ward is for the investigation of social cases under special arrangements. Much stress will be laid upon investigation of psychiatric problems and upon the social service problems of the out patient department.

Postgraduate Teaching at Fordham.—The medical faculty of Fordham University has organized a series of international extension courses in medicine of a character and scope not heretofore attempted. According to arrangements made only one branch will be dealt with each year, in a course which will last three weeks, with nine working hours each day. During this time the subject studied will be thoroughly presented from its anatomical foundation to its therapeutical climax. Didactic lecturing will be avoided, and all teaching will consist of demonstrations of specimens, cases, lantern slides, cinematograph pictures, etc. Renowned European teachers are being brought to America for the special purpose of conducting this course. Americans who have not been able to seek foreign study will thus have it brought to them, and in an organized form which would take months to glean in Europe. The first course will begin at Fordham University, New York city, on September 6, 1912. The subject of this course will be Nervous and Mental Diseases. Dr. Henry Head, of London; Dr. Gordon Holmes, of London; Doctor Jung, of Zurich; Doctor Knauer, of Munich; Doctor Achucarro, of Madrid; Dr. Colin K. Russell, of Montreal; Dr. F. V. May, of Albany; Dr. H. H. Goddard, of New Jersey; Dr. C. Alsberg, and Dr. William A. White, of Washington, will assist the Fordham faculty.

Hospital Provision for Consumptives.—Nearly 4,000 additional hospital beds for consumptives in twenty-nine States were provided during the year ending June 1st according to a statement from the records of the National Association for the Study and Prevention of Tuberculosis. This makes a total of over 30,000 beds, but only about one for every ten indigent tuberculosis patients in this country. In the last five years, the hospital provision for consumptives has increased from 14,428 in 1907 to over 30,000 in 1912, or over 100 per cent. New York State leads in the number of beds, having 8,350 on June 1st; Massachusetts comes next with 2,800, and Pennsylvania, a close third with 2,700. Alabama showed the greatest percentage of increase in the last year by adding 57 new beds to its 42 a year ago. Georgia comes next with 100 beds added to 240 a year ago. New York has the greatest numerical increase, having provided over 1,800 additional beds in the year. Only four States, Mississippi, Nevada, Utah, and Wyoming, have no beds in special hospitals or wards for consumptives. Eight years ago, when the National Association was organized, there were 26 States in which no hospital or sanatorium provision for consumptives existed, and the entire number of beds in the United States was only 10,000.

Sixth PanAmerican Congress.—The Sixth PanAmerican Congress will convene in Lima, August 3 to 10, 1913, in connection with the Latin American Medical Congress and the Congress of Hygiene, under the patronage of the President of the Republic of Peru. There will be eight sections: 1, Anatomy and physiology—normal and pathological; 2, bacteriology and parasitology; 3, medicine; a, clinical medicine, therapeutics, and symptomatology; b, diseases of infants; children's diseases; c, mental and nervous diseases, criminology, and legal medicine; d, tropical medicine and epidemiology; 4, surgery and associated troubles; a, clinical surgery, surgery of children; b, eye, ear, nose, and throat; c, venereal and urinary diseases; dermatology; d, obstetrics and gynecology; 5, hygiene; a, military and naval; b, tuberculosis; c, children's d, alimentation; e, city and rural, professional, school; f, social and statistical demography, sanitary legislation; g, sanitary technology; 6, physics, chemistry, natural history, pharmacology; 7, veterinary medicine; 8, odontology. Special trips will be made to the ruins of the Incas, and endeavors will be made to have the boat carrying the party go through the Panama Canal. Round trips may be made by persons attending the congress. Some will go from New York or New Orleans directly to Panama; others by way of Mexico and Central America to Panama and down the coast to Peru. From Peru there be a number taking the trip to Chile by the transAndean railroad through the tunnel to Buenos Ayres and back by the same route, whereas others will continue up the east coast to Brazil and will cross from Rio Janeiro to Lisbon, returning by way of Madrid, Barcelona, Paris, London, and New York.

Pith of Progressive Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

June 27, 1912.

1. W. T. COUNCILMAN: Experiences of Medical Teacher.
2. EDWARD H. RISLEY and FRITZ C. IRVING: Technique of Transfusion.
3. GEORGE L. WALTON and JOHN HOMANS: Operability of Cerebral Endothelium; Report of Successful Case.
4. ANNIE LES HAMILTON and MARY ELIZABETH MORSE: Erythrocythemia; Report of Case with Autopsy.
5. PHILIP HAMMOND: New Mastoid Retractor.

2. Technique of Transfusion.—Risley and Irving say that practically all the instruments and devices advocated for transfusion of blood are either too complicated, or require too much skill in manipulation or manufacture and are not suited alike to all cases. They consider the use of paraffin coated glass tubes, as advocated by Brewer and Leggett, and later by Vincent, to be the method which is the easiest, simplest, and most likely to succeed. They also hold the glass bulb of David and Curtis to be very simple and safe, and to afford accurate measurement of the blood transfused. It is possible to do transfusion without cannulae or clamps, or any mechanical aids, provided enough length of artery and vein is dissected out.

4. Erythrocythemia.—Hamilton and Morse report a case of this disease, the points of special interest in which are: 1. The improvement under x ray treatment; 2, the decrease of the liver from very great size to about normal, apparently due to improvement, but really to degeneration; 3, varicosities of the esophageal veins common in alcoholic cirrhosis of the liver, but not expected in this case; 4, the extraordinary and fatal hemorrhage due to, 5, rupture of the esophageal vein.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

June 20, 1912.

1. L. L. MCARTHUR: Antiseptic Surgical Access to Pituitary Body and Neighborhood.
2. J. F. BINNIE: Symptoms of Colonic Intoxication.
3. H. S. PLUMMER: Diffuse Dilatation of Esophagus without Anatomical Stenosis.
4. T. H. WEISENBURG: Nervous Symptoms Following Sunstroke.
5. RALPH O. CLOCK: Intestinal Implantation of Bacillus lactis bulgaricus in Certain Intestinal Conditions of Infants.
6. G. L. ORTON: Procreative Regulation of Defectives and Delinquents.
7. W. W. PETER: Health Problems of Changing China.
8. JOSEPH ZEISLER: Some Uncommon and Often Unrecognized Forms of Toxic Dermatitis.
9. ARTHUR G. SULLIVAN: Reconstruction of Bile Ducts.
10. JOHN M. LITTLE: Beriberi Caused by Fine White Flour.
11. EVERETT J. BROWN: Therapeutic Literature.
12. ARTHUR A. EISENBERG: Use of Hexamethylenamine in Affections of Upper Respiratory Tract.

2. Symptoms of Colonic Intoxication.—See this JOURNAL for June 8th, page 1220.

4. Nervous Symptoms Following Sunstroke.—Weisenburg reports two cases of sunstroke followed by nervous symptoms of unusual character. In the first case reported a severe sunstroke was followed by multiple nervous lesions producing acute cerebellar ataxia, loss of speech, and spastic symptoms. The second case was that of a cook in whom because of overheating there occurred muscular spasms. This patient had an old poliomyelitis of one leg, but in spite of this the muscular spasms were just as marked in the palsied limb as elsewhere, which phenomenon seems to prove the theory that the spasms are produced by a degenerative process in the muscles and not by a lesion of the nervous system. In the literature of the subject accessi-

ble to the author a great variety of symptoms have been described. In addition to the usual rise of temperature, cephalalgia, and occasionally coma, there have been a number of cases of motor lesions, either hemiplegic or paraplegic, and more rarely acute ataxia and disturbance of speech. The author has not found a single instance of such lesions producing sensory disturbances, although there is no reason for their nonoccurrence. There must be something inherent in the physical condition of the individual which predisposes to the effects of heat. In the Philippines sunstroke hardly ever occurred among the natives, and among the soldiers in those who either foolishly exposed themselves or who drank. No matter how much liquor a man drank, it was not until he exposed himself to the heat that he became affected, and then very suddenly.

5. **Intestinal Implantation of *Bacillus lactis vulgaricus* in Infants.**—See editorial article, page 83.

6. **The Procreative Regulation of Defectives and Delinquents.**—Orton calls attention to the large percentage of defectives in the reformatories and prisons, and from his investigations and those of Goddard, finds that heredity plays no small part in their production. In the cases examined forty-eight per cent. were found to be mentally defective and of these forty per cent. suffered from defective eyesight, thirty-five per cent. had flat feet, thirty-two per cent. had extremely bad teeth, seventeen per cent. had throat difficulties, and forty-seven per cent. some form of nasal obstruction. Many had all the defects named. In view of the appalling facts of the transmission of crime, epilepsy, and feeble-mindedness from generation to generation, the New Jersey legislature at the session of 1910-11 passed a bill which empowered the governor to appoint a commission to act in all cases recommended by the heads of the various institutions, the persons having the right of appeal to the court to show why the operation should not be performed. The law permits and specifies the operation—orchidectomy in rapists, and vasectomy in all other defectives. In the Indiana State Reformatory vasectomy has been performed in several hundred cases, and while it prevents procreation it does not destroy sexual desire or the ability for coition. The sterilization of defectives and delinquents is one of the newer questions coming before the profession and it deserves careful study and earnest consideration.

10. **Beriberi Caused by Fine White Flour.**—Little writes from observations made during five years in a wheat eating country where beriberi is fairly common (Newfoundland and Labrador), and found that when from any cause the people have been on a diet of overmilled wheat (ordinary fine white wheat flour), beriberi developed. A patient has advanced into complete helplessness, who began with symptoms of night blindness with paresthesias, anesthesias, and paralysis. This same patient, put on a diet of whole wheat flour, beans, and peas, was perfectly well in two months. Others advancing from the functional stage of symptoms into the paralyzed have been made well in two weeks by getting a full diet with whole wheat bread, beans, potatoes, macaroni, and fresh meat. These facts must not blind us to the possibilities of other causes. The

fact that beriberi is caused by eating to the exclusion of other foods, grain, whether rice or wheat, which has had its outer coat removed by polishing or milling, does not prove that this form of peripheral neuritis is not caused in other ways. It may be that unmilled grain has the neuritis preventing elements in its peripheral layers removed, changed, or dissolved out by dampness, or decomposed and removed by heat, or that in certain states the body may not cause the metabolism of the proteins of other diets in the way necessary to produce the particular substance which insures the normal preservation of nervous tissue. With a larger knowledge of the causes of the disease the wanting ingredient of the diet may be isolated and marketed in available form. This would simplify our work in the prevention and treatment of this disease.

12. **Hexamethylenamine in Affections of the Upper Respiratory Tract.**—Eisenberg has used this drug in forty-three cases, of which twenty-two were cases of acute bronchitis, twelve of acute rhinitis, eight of influenza, and one of chronic sinusitis. His method of treatment was similar in all cases, although in some it was slightly more prolonged. Every patient observed was kept indoors for a day or two, received one grain of calomel and soda (in quarter grain doses, every fifteen minutes), and six hours later had two teaspoonfuls of magnesium sulphate. Hexamethylenamine was given as follows: Children ten years old received four grains (0.3 gramme) dissolved in a half glass of water, three times a day during the first day, and twice a day during the following day or two. Children of fifteen years and over received six grains (0.4 gramme) dissolved in a full glass of water, while adults received ten grains (0.7 gramme) in the same way. Cases of rhinitis were cured in three or four days. In acute bronchitis every patient was well in four or five days, while influenza patients recovered in from five to seven days. No untoward symptoms were observed, even when used up to thirty grains daily. This treatment seemed to prevent possible complications of acute rhinitis, such as bronchitis and sinusitis.

MEDICAL RECORD.

June 29, 1912.

1. M. ALLEN STARR: Neuroses Dependent upon Errors of Internal Secretion of the Ductless Glands.
2. HEINRICH STERN: Rice in Diet of Diabetic.
3. EMIL MAYER: Ozena Investigation in the United States.
4. T. D. CROFTERS: Medical Studies of Alcoholic Problem.
5. BRAYN DE F. SNEYD: Pharyngeal Abscess.
6. GEORGE B. LAKE: Use of Cultures of *Staphylococcus pyogenes aureus* in Curious Outbreak of Diptheria.
7. DOWLING BENJAMIN: Elimination of Lockjaw.
8. ARCHIBALD E. ISAACS: Traumatic Cyst of Pancreas.

1. **Neuroses Dependent upon Errors of Internal Secretion of the Ductless Glands.**—Starr has studied during the past twenty years many cases of myxedema and of Basedow's disease, and has observed the effect of thyroid extract in the former, and of the removal of the thyroids in the latter. In both these conditions there are numerous well marked nervous symptoms in addition to the characteristic features. The appearance of similar nervous symptoms in a lesser degree, without the characteristic symptoms of either myxedema or Graves's disease, or combined with slight evidences of either, suggested the possibility that in various neuroses there may be an element of functional insufficiency

or of oversecretion of the thyroid gland. Certain neurosthenics display symptoms suggestive of myxedema, such as sensations of cold, nervous chills, cold hands and feet, dry skin and hair, irregular muscular pains in the muscles and bones, a great sense of physical exhaustion and mental inertia. The symptoms of exhaustion are not accompanied, however, by any objective sign of heart weakness, though tests demonstrate the rapid onset of fatigue if measured by the dynamometer or the ergograph. In these patients the addition of one grain of thyroid extract, two or three times a day, to the ordinary treatment aids the latter materially. Certain neurosthenics present the neurotic symptoms of Basedow's disease, which is alleged to be due to an excessive secretion of the thyroid gland, though not the subjects of exophthalmos or goitre. These patients cannot keep quiet, and are unable to lie down or to rest. Mental activity as well as physical is present. While unable to keep their minds long upon any one subject for any length of time, they are sufficiently active mentally to keep them busy on many subjects. They are usually anxious about their own condition and fear insanity. The physical symptoms are usually a sense of heat, a desire for cool, fresh air. A burning sensation leads them to sleep with exceedingly light bed clothing and very frequently leads to excessive perspiration. Their eyes are bright, their skin and hair shiny and moist, and they are usually thin. A tremor about the hands and an exaggeration of the knee jerks are often present. They have abnormal hunger even two hours after a meal and are subject to diarrhea. In women the menses are excessive. They sleep badly, wake easily are oversensitive to sounds, and very often complain of sudden hot flashes. The pulse is increased in rapidity (80 to 90). These symptoms suggest an excess of thyroid secretion, and are benefited by the use of belladonna, hydrastin, or in extreme cases by rodagren or thyrodoctin. In like manner there are neurosthenics presenting neurotic symptoms dependent upon errors in the pituitary and of the ovarian secretions, which are benefited in a similar manner by use of the appropriate animal extract, increasing or diminishing, as indicated, the natural supply.

2. **Rice in the Dietary of the Diabetic.**—Stern observes that every diabetic sooner or later requires some starchy food which must be metabolizable to a certain degree and not unduly activate a dormant, or intensify an existing glycosuria, and should exhibit antiacetonegenic properties. These characteristics are possessed by the polished rice of commerce. Practically all the rice is absorbed and a certain amount is assimilated by the diabetic, while material rich in cellulose (wheat and oat grits), no matter how much albumin and fat may have been added to it, furnishes little more than a starvation diet. Moreover, pronounced cases of acidosis are frequently cured by the ingestion of 100 grammes (3.33 ounces) of rice.

7. **The Elimination of Lockjaw.**—Benjamin avers that in an experience of thirty-three years, he has treated about 10,000 injuries of all kinds, among them rusty nail and other punctures of feet and hands, in private and hospital practice without having a single case of lockjaw. In his neighborhood

lockjaw is endemic—twenty cases in one year. He sterilizes the field of injury, especially the deep edges of the wound, irrigating those which are large and open. In punctured wounds he inserts a few drops of an alcoholic cocaine solution. Then with a long, handled screw dipped into an antiseptic solution (lysol two or three per cent.) he penetrates the wound by a spiral motion, holding the screw back while it is kept turning, so that when it has reached the bottom of the wound, it has been turned far enough to carry it as far again. A few more turns are now given. This will remove all foreign substances and microbes. The instrument is then pulled out, washed in an antiseptic solution, dipped in tincture of iodine, and then forced down to the bottom of the wound and given a few turns backward. The screw is then dipped into carbolic oil, one to fourteen, and pushed gradually to the bottom of the wound, turning backward, then unscrewed out. The wound is then dressed antiseptically. Even in cases immunized with antitoxine this local treatment should be used on all punctured and Fourth of July wounds, as it kills not only tetanus bacilli, but streptococci (blood poison and erysipelas) and staphylococci (abscess and inflammation).

LANCET-CLINIC

May 4, 1912.

1. GEORGE DOEK: General and Dietetic Treatment of Typhoid Fever.
2. ROBERT W. LOVETT: Relation of Scoliosis to School Life.
3. ELIZABETH CAMPBELL: Feeding Children from Bottle to Puberty.
4. LEOPOLD HEIMANN: Typhoid.

May 11, 1912.

5. ERNEST GALLANT: Mechanical (Nonsurgical) Treatment of Splanchnoptosis.
6. KENNEDY DUNHAM: Pulmonary Tuberculosis as Studied by Stereotomogram.
7. J. LOUIS KANSCHOFF: Suture of Bullet Wound of Lung with New Method of Closing Pleural Defects.
8. A. H. BARKLEY: Inguinal Hernia under Local Anesthesia.
9. TOM A. WILLIAMS: Care of Inebriates at Home.

May 18, 1912.

10. GORDON F. MCKIM: Obstructive Prostatitis.
11. CAREY CULBERTSON: Etiology of Viscerospasms with Special Reference to Pregnancy Factor.
12. WILLIAM MACL. THOMPSON: Principles Underlying Treatment of Viscerospasms.
13. W. P. FRANSCH: Diagnostic Aids in Surgery of Renal Pelvis and Ureter with Special Reference to Pyelography.
14. CHRISTIAN R. HOLMES: Studying Manner of Housing and Treating Tuberculous Patients in Europe—Summer of 1911.

May 25, 1912.

15. WILLIAM BILLINGTON: Treatment of Movable Kidney.
16. DUDLEY S. REYNOLDS: Welding Glasses.
17. J. W. MILLER: Present Day Methods to Determine Cure of Gonorrhea.

2. **Relation of Scoliosis to School Life.**—Lovett has made extensive study of the lateral curvature found among school children, "school scoliosis." Children of school age are, of all classes in the community, most likely to be permanently affected by unfavorable environment, such as bad air, overwork, and twisted writing positions. Such unfavorable conditions are more likely to cause serious deviations in the anteroposterior plane, round shoulders of marked degree rather than side deviations (scoliosis). It is fair to assume that the unfavorable conditions in school are potent factors in causing postural or false scoliosis and also mild structural scoliosis. There is, however, no evidence that moderate and severe cases of real scoliosis are caused by such school conditions, but our best knowledge makes it seem unlikely that unfavorable school conditions can cause these grades, and one must assume either one of the well defined causes mentioned (congenital anomalies of the spine and its appendages, rickets, empyema, infantile paralysis,

and diminished individual resistance of bone) or an inherent weakness of bone.

5. Mechanical (Nonsurgical) Treatment of Splachnoptosis.—Gallant emphasizes the importance of the following principles in the treatment of Glenard's disease or splachnoptosis: 1. Replacement and relief by diagnostic posture and manipulation. 2. Retention and support of the replaced organs by a specially designed corset, made from measurements in the nude, taken while the patient is on the back; laced with two strings; put on and adjusted while in the semiopisthotonos posture. 3. Reparation, by local treatment and operative measures, applied to the genital tract, eyes, nose, throat, etc. 4. Recuperation, by rest cure, massage, and exercise. 5. Prevention, by use of the corset for girls at puberty; in women during and after pregnancy and after operation, for the prevention or relief of ventral hernia, etc. 6. Persistent wearing of this corset throughout life, as the only means of avoiding recurrence, and a return to the wearing of harmful and injurious styles of corsets.

8. Inguinal Hernia under Local Anesthesia.—Barkley reports twenty cases of inguinal hernia. The skin about the seat of operation is thoroughly infiltrated, just beneath the first layer, and not into the subcuticular fat, care being taken not only to block the nerves but to avoid cutting them, as they sometimes adhere to the under side of the external oblique, and that the neck of the sac be injected before excision. All manipulations should be made with thumb forceps, and all dissection made with scissors; blunt dissection does not conduce to primary healing. The wound should not be touched by the fingers of the operator or assistant. The amount of cocaine received by any patient should not exceed one grain. In some cases a few (ten or fifteen) drops of adrenalin solution may be added to the solution of cocaine. The benefits arising from this mode of operation are obvious.

10. Obstructive Prostatitis.—McKim observes that this disease is one of the sequelae of chronic gonorrheal infection, either of hematogenous origin or by continuity from the rectum with other micro-organisms as causative factors, and frequently associated with inflammation in other parts of the prostate gland. It is characterized, pathologically, by the formation of a fibrous bar at the vesical orifice, often involving the sphincter with a contracture at the vesical neck. The symptoms are not constant. In some cases we have only a frequency, hesitancy, and a burning sensation, in others difficulty in urination and perhaps retention simulating hypertrophy. Diagnosis is made from cystoscopic findings. The treatment usually found successful consisted of massage, high dilatation, and endoscopic applications. In cases of definite bar formation the use of Young's urethroscopic median bar excisor is advised, with which to remove a couple of sections of the gland, thus opening up the channel and relieving the obstruction.

15. Treatment of Movable Kidney.—Billington contends that the permanent restoration of a loose kidney to its normal position by prolonged recumbency and forced feeding is unsound in principle and impossible of performance. In many cases immediate good results succeeded, but quick

relapse followed a return to ordinary life. The reasons are that the kidney is not retained in position by the perirenal fat, and that absorption of the fat of the capsula adiposa appears in most cases to be a result and not a cause of the abnormal motility; again, that nephroptosis is followed by the formation of more or less dense adhesions between the true capsule of the kidney and the perirenal fascial capsule and structures immediately contiguous. These adhesions, dragging upon the kidney, must be severed before the kidney can be made to retain its normal position without support. The process of rapid fattening can hardly cause the disappearance of these adhesions. A strong, elastic belt or corset with elastic pads of moderate tension may be useful when movable kidney is associated with prolapse of other abdominal organs (visceroptosis), while operation fixation of the kidney alone will give only partial relief, and an elastic abdominal support will still be needed. Congenital general visceroptosis is not amenable to operation. Operation does not make the patient well; it only makes it possible for her to get well. Improvement is often slow, and many months must elapse before perfect restoration to health can be looked for.

BRITISH MEDICAL JOURNAL

June 22, 1912.

1. GUTHRIE RANKIN: Colic.
2. JAMES SWAIN: Enterospasm and Colic from Surgical Point of View.
3. BYRON BRAMWELL: Salvarsan Treatment of Pernicious Anemia.
4. D'ARCY POWER: Treatment of Syphilis.
5. THOMAS LEWIS: Electrocardiography. Importance in the Clinical Examination of Heart Affections (*Part I*).
6. LEONARD ROGERS: Rapid Cure of Amebic Dysentery and Hepatitis by Hypodermic Injections of Soluble Salts in Emetine.

3. Salvarsan in Pernicious Anemia.—Bramwell reports the results obtained in seven cases of pernicious anemia which he treated by injections of salvarsan. The second case is the most striking. Prior to the administration of the drug there were 1,760,000 red cells and fifty-two per cent. of hemoglobin, giving an index of 1.48. Between December 24, 1910, and February 9, 1911, four injections of 0.3 gramme of salvarsan were given into the buttocks. There was a steady rise in the number of red cells and a proportionately smaller rise in the percentage of hemoglobin, so that on the day of the last injection the figures were 3,350,000 reds, seventy-eight per cent. hemoglobin, and an index of only 1.16. Following the last injection examinations of the blood at intervals showed a steady and very marked approach to the normal, so that about one year from the time of the last injection the blood picture was normal, 6,210,000 red cells, 120 per cent. of hemoglobin, and 0.97 index. Five of the remaining six patients showed more or less marked improvement, though none approached the one already cited. In only one of the seven was there no improvement whatever. In general Bramwell believes that the improvement was definitely dependent upon the salvarsan and not a coincident spontaneous development. He believes that the use of the drug by the intramuscular route is to be preferred on account of the prolonged action which results from its slow absorption. He is so greatly encouraged by the results in this brief series as to hazard the prediction that, "salvarsan will probably be found to be a more efficient remedy than arsenic

given by the mouth, and indeed than any other form of treatment which has as yet been employed."

5. **Electrocardiography.**—Lewis initiates his communication with an excellent clear description of the principles of the galvanometer, the several "leads" and their objects, and an analysis of some of the typical curves obtained. Briefly the galvanometer consists of a fine platinum thread stretched in the field between the two poles of an electromagnet. The passage of an electrical current through this filament causes it to deflect from its position. The direction of this deflection depends upon the direction in which the current is passing; the extent of the deflection upon the strength of the current. The degree of deflection in response to a given current strength is the same in all instruments, thus rendering the readings quite comparable even when they come from different sources. The two poles of the magnet are exactly opposite one another and are bored to admit of the passage of light through one and the insertion of a microscope into the other. By this means the vibration of the "string" can be photographed upon a moving plate, and so magnified as to render the instrument extremely delicate. The "leads" are the ways in which the human body may be brought into circuit with the instrument. They are three, 1, horizontal, from the right to the left arm; 2, oblique, from the right arm to the left leg, and, 3, vertical, from the left arm to the left leg. The curve depends in part upon the lead, and in a normal person should be the same and constant for any one lead. No adequate account of the meaning of the curves can be given in an abstract because of the necessity of their reproduction and the great detail essential to their understanding. Upon the variations in the forms of the curves, and the directions of the apices of the waves, depends the determination of the abnormality of the heart's action in a given case.

6. **Emetine in Dysentery.**—Rogers has employed the soluble hydrochloride of emetine by hypodermic administration in the treatment of amebic dysentery with most phenomenal results. He gives the case records of two of his patients who were practically moribund when the treatment was instituted and who recovered as a result. He injects one sixth grain at the first dose and rapidly increases this to one third grain, twice daily. There is no nausea nor emesis. He was led to try this drug through some experiments in which he found that this alkaloid in one to 10,000 in saline solution was rapidly fatal to the ameba in a freshly passed stool, and that in a few minutes the amebas were rendered inactive and apparently killed by as weak a solution as one to 100,000 of emetine. A great advantage in the hypodermic use of the salt of the alkaloid is the ability to introduce an extremely large amount into the body without the production of vomiting.

LANCET.

June 22, 1912.

1. PERCY KIDD: Moot Points in Pathology and Clinical History of Pneumonia (*Lecture II*).
2. L. S. DUNSTON: Pathology of Immunity (*Lecture II*).
3. H. M. JONES: Ganglion Neuroma of Mesentery.
4. HENRY DAVY: Dilatation of Heart.
5. F. W. EDRIE-GREEN: Case of Color Blindness.
6. H. CHAPPLE: Pneumococcal Vulvovaginitis in Children.

1. **Moot Points in Pneumonia.**—Kidd continues his lectures on pneumonia with remarks on respiration. He cites Sutherland as saying that the dilatation of the *alae nasi* occurs at the end of expiration and says he can confirm this fact, though he can offer no satisfactory explanation of its mechanism. Kidd believes that Jackson's view that the toxins of pneumonia act upon the respiratory centres to produce effects analogous to those caused by stimulation of the central end of the cut vagus, will explain the early development of tachypnea with a small lesion in the lung, and also the want of relation between the area of lung involved and the frequency of respiration. Further, automatic breathing being of medullary origin and mainly abdominal, whereas voluntary respiration is cortical and of the upper thoracic type, serves to explain why the medullary stimulation of the respiration by the toxins produces rapid abdominal breathing without any consciousness of dyspnea, and why thoracic breathing is not in any way altered. Of the effects of pneumonia upon the heart, he mentions the fact that it is very uncommon to find signs of cardiac dilatation in the fatal cases. This absence of dilatation suggests that the fatal circulatory failure cannot be attributed to the heart's muscular insufficiency alone, but must depend chiefly upon exhaustion of the vasomotor centre. In speaking of the relation of pneumonia to tuberculosis, Kidd says that he is unable to recall a single case seen during life, and only two or three at autopsy, in which true lobar pneumonia occurred in tuberculous patients. Obsolete tuberculous nodules are not infrequently found in the lungs of those who die of pneumonia, but lobar pneumonia complicating active tuberculosis of the lungs is exceedingly rare. True lobar pneumonia following influenza occurs usually as a sequel. Here it is to be noted that not infrequently pneumonia begins with general toxic symptoms and is erroneously diagnosed as influenza; real influenzal pneumonia is a rare condition.

3. **Ganglion Neuroma.**—Jones reports the details of a case of a girl of eighteen years who had had an abdominal mass since the age of five. This had grown slowly until some months prior to operation, when it took on rapid growth. The only symptoms were constipation and nausea. On operation the tumor was found lying between the two layers of the mesentery; it was some nine inches in length. The patient made a slow but complete recovery. The pathological examination of the mass revealed its nature. It was composed of a mass of bundles of myelinated nerve fibres and of encapsulated, degenerated ganglion cells.

6. **Pneumococcal Vulvovaginitis.**—Chapple reports two cases of this form of infection occurring in girls of thirteen years. The symptoms were the same in both cases, a greenish yellow, offensive, thick discharge, of rather sudden onset. The inflammation involved the vulva chiefly, though there was definite infection of the lower portion of the vagina. The surrounding parts were much excoriated. There was no burning on micturition, and no evidence of urethritis. Minute red points were present on the mucosa of the much congested vulva, at the orifices of the glands. Smears and cul-

tures from the discharge showed the pneumococcus. Local antiseptic douching combined with the systematic use of an autogenous vaccine promptly cured the one patient, who returned for treatment. Chapple suggests that the importance of recognizing the etiological factor in vaginitis has been sorely neglected. Recent studies have shown the occurrence of pneumococcal peritonitis to be not uncommon in women, and he thinks that the presence of the organism in the vagina is by no means rare and may lead to an ascending infection, particularly if there has been an untreated vaginitis of similar origin.

AUSTRALASIAN MEDICAL GAZETTE.

May 19, 1912.

1. A. STEWART: Importance of Scintillons in Diagnosis of Phthisis.
 2. R. B. WARD: Appendicitis in Childhood.
 3. A. A. LEBRON: Congenital Hypertrophic Pyloric Stenosis.
 4. P. L. LITTLE: Congenital Pyloric Stenosis.
- May 25, 1912.
5. J. W. B. BEAN: Romance of Medicine.
 6. H. S. STACEY: Interesting Tumor of Kidney.
 7. WILLIAM T. CHENHALL: Still's Disease.
- June 1, 1912.
8. R. B. WARD: Osteogenesis Imperfecta.
 9. WALTER HULL: Unusual Complication of Pregnancy.
 10. J. P. HASTINGS: Ectopic Gestation and Transplantation of Human Embryo.
 11. J. K. COOPER: Cesarean Section Following Suspension of Uterus.
 12. W. F. QUARLES: Method of Treating Congenital Clubfoot.

6. **Interesting Tumor of the Kidney.**—Stacey's case was one of nephroma or hypernephroma of the kidney. He cites the studies made by Doctor Wilson, of Rochester, United States, who classifies them as nephromata.

7. **Still's Disease.**—Chanhall describes under this title a case in which the chief clinical characteristics were the slow, insidious, almost painless onset, the symmetrical nonfebrile attack upon the joints, the absence of enlargement or roughening of the articular ends of the bones and of eburnation of the articular cartilages, the peculiar creaking of extracapsular tissues on movement, the absence of effusion, of pain, and of tenderness, the muscular wasting and limitation of movement from contraction of flexor tendons, the enlargement of the spleen and of the cervical and other glands. The pathology of the disease is unknown. Autopsy has not yet revealed more than increased vascularity of the synovial membranes and ligaments, slight effusion, and some thickening of the capsule. A negative Calmette and von Pirquet reaction was obtained.

9. **Unusual Complication of Pregnancy.**—Hull reports a case in which delivery of a healthy child was followed by symptoms indicative of a thrombosis of the cavernous sinus, from which the patient recovered with great impairment of the vision of her right eye. She became pregnant again and after confinement had another attack of the same nature which rendered her right eye blind. The prominent symptoms in each attack were venous obstruction and ophthalmoplegia.

BULLETIN DE L'ACADÉMIE DE MÉDECINE

June 4, 1912.

1. GEORGES ROSENTHAL and MOSNY: Dangers of Simplified Methods Compared with Clinical Method of Physiological Respiratory Exercise.
2. FELIX LAGRANGE: Surgical Procedures Having as Aim Modification of Intraocular Tension.

1. **Therapeutic Respiratory Exercises.**—Rosenthal, in a communication summarized before the academy by Mosny, criticises certain methods

of respiratory exercise recently advocated in the treatment of convalescents in general and of hospital patients with pleurisy, or with incipient disease of bacillary origin. Such methods include the intranasal insufflation of air, the breathing of series of perfumes, active thoracic respiration, and the diaphragmatic or abdominal method, which limits the respiratory "education" to the diaphragm. None of these methods is suitable for all cases. Intranasal insufflations are useful in the physiological treatment of nasal disorders; active thoracic gymnastics, excellent in the healthy adolescent, would be dangerous in the debilitated or those suspected of tuberculosis, while diaphragmatic exercises are especially suited for cases where the functional activity of this muscle is diminished. By adhering strictly, on the other hand, to the complex phenomena of normal respiration, such as nasal breathing, inhalation of a normal amount of air, expansion of both lungs in their entirety, and regularity of rhythm, both as to frequency and proper relationship of inspiration to expiration, Rosenthal has obtained satisfactory results with breathing exercises in the classes of cases already referred to.

2. **Operations for Modifying Intraocular Tension.**—Lagrange calls attention to the absolute necessity of normal intraocular pressure for proper functioning of the eyes, and discusses the surgical procedures best adapted for raising or lowering the tension, as required. In detachment of the retina, which is generally associated with lowered intraocular tension, in particular when due to choroiditis or present in combination with myopia, Lagrange has been making use in the past year of the following procedure: A circular, equatorial incision is made in the ocular conjunctiva, which is reflected over the cornea. In the dissection the sclera is closely followed, and the region of the canal of Schlemm carefully exposed. With a light, flat galvanocautery tip the entire limbic region is then cauterized, and numerous punctate applications of the cautery made over the whole of the space intervening between the equator and the limbus. By this procedure, which the author designates as *colmatage*, an attempt is made to provoke the formation of dense, relatively impermeable scar tissue in the anterior segment of the eye. To this are added, in the posterior hemisphere, injections of ten per cent. salt solution, which appear to act by inducing irritation around the eyeball with the result of thickening and decreasing the permeability of the sclera. With these measures the author has always obtained a pronounced rise in the intraocular tension and, while no definite conclusion can as yet be stated concerning a certain cure of retinal detachment, it has become clear that such a cure is facilitated thereby. In myopic detachments, the procedures described, coupled with the application of pressure, often constitute the sum of therapeutic measures available. In detachment of inflammatory or congestive origin, however, venesection, mercurial inunctions, and general mercurial treatment are also indicated. Where the intraocular pressure is excessive, Lagrange recommends the performance of anterior perforating sclerectomy (Lagrange's operation). Of all other operations hitherto advocated

for the lowering of intraocular tension, iridectomy, through a broad scleral incision, has alone given a modicum of good results. Lagrange agrees with de Wecker that the effects of the last named procedure are due to permeability of the scleral scar tissue, but this permeability is so slight that in simple chronic glaucoma, in which there is but little hypertension and the margins of the incision made in the sclera do not gape, benefit is very uncertain. In order to lower the intraocular tension permanently a fistula must be established in the eye at the angle of filtration, and this is the end sought in the author's operation of subconjunctival fistulization through anterior sclerectomy. This procedure is indicated in chronic glaucoma, whether the intraocular hypertension is present intermittently or constantly. In irritative glaucoma the operation may also be performed and has yielded completely successful results in the author's hands in several cases; this variety of glaucoma, however, is more closely related to acute glaucoma, in which iridectomy is sufficient. That fistulization actually is produced by Lagrange's operation has been shown by experiment and anatomical study. In chronic glaucoma the author has performed the operation about two hundred times. In almost every case the tension was brought back to normal, and the author's operative statistics were reversed, success becoming the rule, instead of the exception as under older methods of intervention.

JOURNAL DE MÉDECINE DE PARIS.

June 15, 1912.

1. SAVARIAUD: Inguinal Hernia in the Nursing.
2. MILHET: Treatment of Typhoid Fever. (Continued).
3. M. R. HEURE: Preparation and Use of Sulphurated Oils.

BERLINER KLINISCHE WOCHENSCHRIFT.

May 13, 1912.

1. K. BOMHOEFFER: Importance of Methodical Psychiatric Examination for General Medical Education.
2. D. VON HANSEMAN: Changes in Pancreas in Diabetes.
3. J. PLESCH: Pernicious Anemia and Leukemia Treated with Thorium X.
4. F. GUDZEN: Poisoning with Thorium X.
5. W. HIS: Remarks on Doctor Gudzen's Communication.
6. A. PINKUSS: Mesothorium Therapeutics in Cancer.
7. A. WETZEL: New Narcotic, Luminal, with Special Reference to Its Use in Subcutaneous Injection.
8. GRAEFFNER: Luminal, a New Narcotic.
9. OTTO JULIUSBURGER: Luminal, a New Hypnotic and Sedative.
10. W. MARCKWALD: Technique of Demonstration of Storing Radium Emanation in Blood by Respiration.
11. ALEXANDER ZWIG: Diagnostic and Prognostic Progress in Psychiatrics (To be continued).

May 20, 1912.

12. OTFRIED FOERSTER: Histological Examination of Cortex of Brain *intra vitam* through Function of Brain in Diffused Sickness of Central Nervous System.
13. F. FROMME: Specific Treatment of Gonorrhea in Women.
14. CARL HELBIG: Experience in 100 Operations for Palatine Cleft.
15. M. RUTHMANN: Is Experimental Reversion of Blood Circulation Possible.
16. RICHARD FABIAN: Malignant Tumor with Wrong Diagnosis.
17. EMIL ENGEL: Is Ovarian Transplantation Successful Treatment for Too Early Clacterium in Castrated Women.
18. ALFRED LEWANDOWSKI: Hygiene of Children Graduated from School.
19. ALEXANDER ZWIG: Diagnostic and Prognostic Progress in Psychiatrics (Concluded).

2. Changes in the Pancreas in Diabetes.—

Von Hansemann finds from his experience and from the literature that there appear regularly changes in the pancreas in diabetes, that is, that real diabetes, not every form of glycosuria, is a disease which depends upon the internal secretion of the pancreas. He believes that the islands of Langerhans are of no importance to this action, as

they are changeable formations and only represent a certain variation of the parenchyma.

6. Mesothorium Therapeutics in Cancer Patients.—Pinkuss states that his experiments with mesothorium emanation introduced in beverages and in local and intravenous injections showed him that in this form the emanation has absolutely no influence upon carcinoma, but he believes that mesothorium rays constitute an effective after treatment in cancer following operations.

7, 8, and 9. Luminal.—Wetzel observes that luminal, phenylethylbarbituric acid, can become an effective narcotic in psychiatry, using from 1.5 to two c.c. in aqueous solution for hypodermic injection.—Graeffner remarks that luminal is an important sedative. He advises small doses, 0.2 to 0.5 gramme in a warm draught, when it produces in half an hour deep sleep, but it may be given not only per os, but also as a suppository. He emphasizes the fact that luminal is not a narcotic, but a sedative, and therefore has no effect upon pain.—Juliusburger states that we have in luminal an important addition to our drugs, which, as sodium luminal, may be given by mouth or subcutaneously.

13. Specific Treatment of Gonorrhea in Women.—Fromme remarks that the specific treatment of gonorrheal pyosalpinx is not a cure-all. A cure is produced only in about fifty per cent. of the patients and will be ineffectual in old, chronic cases, but subjective symptoms, such as pain, etc., are relieved.

MEDIZINISCHE KLINIK.

May 26, 1912.

1. WALTER HANNES: Waiting for Birth in Pelvic Presentation.
2. MAX HERZ: Neurosis of the Heart and Arteriosclerosis.
3. GROEDER: Balneotherapeutics of Chronic Diseases of Heart and Vessels (Concluded).
4. G. P. NICOLAI: Influence of Certain Baths upon Heart.
5. ARTHUR W. MEYER: Results of Surgical Treatment in Basedow's Disease.
6. RAECKE: Luminal, a New Narcotic.
7. HOFFMANN and MARTIN: Preparation of Sputum Salt Solution for Treatment of Phthisis.
8. FELIX MEYER: Does G-Strophanthine Influence Coronary Circulation?
9. HOFFENDAH: Diseases of Pulp of Tooth.

June 2, 1912.

10. GUSTAV SINGER: Rare Cases of Gastrointestinal Hemorrhages.
11. P. BOCKENHEIMER: Meniscus Injuries.
12. HEINRICH WICHERN: Oxalic Acid Poisoning.
13. STEPHAN STRAUSS: Post-traumatic, Isolated, Late Ruptures of Spleen.
14. ISERLIN: Balneological After Treatment of Inflammation of Pleura.
15. S. C. BECK: Treatment with Local Immunization of Skin, after von Wassermann.
16. H. CRAMER: Treatment of Skin Diseases in Childhood.
17. H. H. WUNDSCH: New Zoological System of Berthold Hatschek and Its Prehistory.
18. FRANZ KOBRAK: Nosebleed.

June 9, 1912.

19. D. VON HANSEMAN: Constitution as Basis of Disease.
20. J. SCHNITZLER: Protected Stomach Perforation and Etiology of Penetrating Stomach Ulcers.
21. OSCAR FEHR: Syphilitic Recurrence in Eye after Treatment with Salvarsan.
22. M. SAENGER: Acceleration of Effect of Drugs in Treatment of Disease.
23. FELIX MEYER: Influence of Increased Power in Walking upon Development of Body in Children Weak at Puberty.
24. R. RONNITSCHER: Examination of Liver Function.
25. E. KOHLER: Corrective Nose Operation.
26. PAUL DITTRICH: Active and Passive Immunity in Diphtheria.
27. P. G. UNNA: Production of Oxygen Foci in Animal Tissue.

4. Influence of Certain Baths upon the Heart.

—Nicolai remarks that cold baths have a better influence upon the heart than warm, and this favorable effect of the cold application may be increased through the addition of carbon dioxide and brine to the bath.

6. **Luminal, a New Narcotic.**—Raecke states that luminal in small doses of 0.2 to 0.4 gramme is an agreeable, safe, and effective remedy which seems to produce sleep for which otherwise double the dose of veronal would be necessary. But our hopes of having in luminal a remedy which will take the place of scopolamine as a narcotic in the delirious insane have not been entirely fulfilled, but in larger doses, from 0.6 to 0.8, given internally or subcutaneously, it is a very effective remedy for procuring sleep in excessively excited patients.

18. **Nosebleed.**—Kobrak gives a few hints for the treatment of nosebleed. Beside the well known position with ice upon the nape of the neck, he advises internally forty grammes of ten per cent. gelatin (calf's foot), which also can be given intramuscularly; furthermore, internally, one tablespoonful in milk, to be given every half hour of the following: Calcium chloride, four grammes; syrup of mint, fifty grammes; water, up to 250 grammes. A hypodermic injection of a rather strong dose of morphine has often good effects. Instead of morphine, sodium chloride up to twenty or thirty grammes may also be given, and sodium bromide up to fifteen or twenty grammes.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT

May 14, 1912.

1. DÖDERLEIN: Artificial Fecundation.
2. MARIE IMCHANTZKY-RIES and JULIUS RIES: Function of Uterine Glands of Storing up Arsenic as Cause of Menstruation.
3. SPIETHOFF: Salvarsan and Nervous System (*To be concluded*).
4. SCHITTENHELM and WEICHARDT: Role of Oversusceptibility in Infection and Immunity.
5. ASCOLI and IZAR: Formation of Toxine through Action of Blood Serum upon Organic Extracts from Same Body or Body Belonging to Same Genus.
6. DUNGER: Serum Diagnosis of Tumors with Complement Deviating Reaction.
7. BERGEL: Experimental Additions to Etiology of Wassermann-Neisser-Bruck Reaction.
8. HEDINGER: Action of Kidney and Heart Remedies in Patients with Diseased Kidney.
9. JESS: Round Scotoma from Blinding while Observing Eclipse of Sun.
10. WUNDER: Experiments Elucidating Exact Limitation of Galvanometric Measurement of Electrolytes and Uric Acid in Human Urine.
11. THEODORIN: Individual Sensibility of Skin to Röntgen Rays.
12. LANGENSTRASS: Diphtheria with Suffocation from Foreign Bodies through Condensed Secretion.
13. MESDLER: What Can We Produce by Operation in Congenital Coxa Vara?
14. WOLFF: Undesirable By Effects of Hormonal Therapeutics.
15. FISCHER: How to Prescribe Solutions of Hydrogen Peroxide.
16. SCHIFFELMANN: Adolf Seeligmüller.

May 21, 1912.

17. VON ROHRING: Clinical Importance of Theory of Protein Super-sensibility.
18. WOLFF-EISSNER and VERLES: Neutralization of Phenomena of Hypersensibility through Albuminous Substances Produced by the Same Body; Clinical Importance.
19. FRANKEL: So Called Pseudomyxoma Peritonei (*To be concluded*).
20. KLATZ: Etiology of Rachitis Based upon Therapeutics with Hypophysis.
21. KANNENGIESSER: Results with Salvarsan (*To be concluded*).
22. HOFFMANN: Potassium Salts in Bronchial Asthma and Hay Fever.
23. MICHAEL: Severe Bony Traumatism in Use of Nail Extension According to Steinhann.
24. SCHMITT: Perforation of Rectum in Rectoscopy.
25. BIRKENBACH: Effect of Hormonal.
26. BOPE: Stenosis of Both Ureters through Foreign Body in Vagina.
27. FRANKENSTEIN: Instrumental Dilatation of Vulva.
28. VON MENZ: New Artificial Ear Drum.
29. HASSE: Sound Pleximeter.
30. SPIETHOFF: Salvarsan and Nervous System (*Concluded*).

May 28, 1912.

31. ROLLY: Reaction of Blood Serum under Normal and Pathological Conditions (*To be concluded*).
32. RITTER: Surgical Treatment of Unesided, Acute, Septic Nephritis.
33. GUGGISBERG: Vaccine Therapeutics and Vaccine Diagnosis of Gonorrhea.
34. HOFBAUER: Use of Hypophysis Extracts in Practical Obstetrics.
35. UFFENBODER: Ocular Muscle Reactions in Irritation of Labyrinth and Reaction in Electrical Irritation in Cerebellum after Examinations of Monkeys.

36. KONJETZNY: Pathogenesis and Mechanism of Meniscus Injuries.
37. HIRSCHMEL: Anesthesia of Brachial Plexus in Axilla for Operation in Upper Extremities.
38. FLATAU: Series of 100 Abdominal Total Extirpations in Uterus Myoma without Death.
39. PAYR: Technique of Arteriovenous Transfusion.
40. SCHARFF: Exostoses on Upper Surface of Calcaneus.
41. FRANKEL: So Called Pseudomyxoma Peritonei (*Concluded*).
42. KANNENGIESSER: Results with Salvarsan (*Concluded*).

1. **Artificial Fecundation.**—Döderlein gives a review of the literature on artificial fecundation, practical in animals and theoretical in man. He reports a case in which he produced artificial fecundation in a woman, twenty-four years of age, who had been married six years without results. She had undergone several minor operations to cure sterility. On the day before the appearance of the menses he injected into the uterus a small amount of semen. The following day the menses appeared and for over a month she had no intercourse. Then the menses did not appear, and four months later pregnancy in the fourth month was diagnosed. The author remarks that this is his sixth trial; the other five so far being unsuccessful. He then describes his methods as follows: The semen was received through coitus condomatosus. The ejaculation was transferred from the condom into a sterilized dish, thence drawn into a sterilized Braun syringe, then injected into the uterus. All was done under absolute asepsis.

2. **Function of the Uterine Glands of Storing up Arsenic as Cause of Menstruation.**—See editorial article in the JOURNAL for June 22d.

3 and 30. **Salvarsan and the Nervous System.**—Spiethoff states as his opinion that salvarsan should be used in large doses in the beginning of an attack of syphilis. He admits that the conclusions of Finger, Ravaut, and Lévy-Bing, who speak against the use of salvarsan in early syphilis or of very small doses, carry a good deal of weight. If there should occur in the treatment with salvarsan cerebral or spinal irritation he has found that lumbar puncture is the best remedy which, when correctly done, will be without bad after effects.

21 and 42. **Results with Salvarsan.**—Kannengieser gives a statistical as well as a case review of his results obtained with salvarsan. He finds intravenous injection best. Salvarsan should be used in combination with mercury, so that about three to four grammes salvarsan, with 180 grammes mercury given in inunction, should produce a permanent cure in a patient. If recurrence appeared it would indicate that the drugs were not far enough pushed. He concludes, therefore, that salvarsan with or without mercury and potassium iodide would give splendid results in syphilis.

33. **Vaccine Therapeutics and Vaccine Diagnosis in Gonorrhea.**—Guggisberg believes in autovaccines, and thinks that under certain circumstances vaccine therapeutics may be successfully carried out, but this treatment should not be taken as a cureall.

34. **Use of Hypophysis Extracts in Practical Obstetrics.**—Hofbauer observes that he can only repeat his first statement about the benefit of pituitrin in obstetrics. He quotes Vogt, of Dresden, who has used the drug in 600 deliveries which included a great number of cases of narrow pelvis, without forceps, and Hamm, who in 300 labors, with pituitrin, had to use the forceps only twice.

37. **Anesthesia of the Brachial Plexus in the Axilla for Operation in the Upper Extremities.**—Hirschel uses from twenty to thirty c.c. of a two per cent. solution of novocain injected as near as possible to the artery in the axilla. He then applies a *Stauungs* bandage somewhat above the injections to prevent too quick resorption. Perfect anesthetization of the arm will occur after ten to thirty minutes for about an hour and a half. He sometimes has added from four to five drops of suprarenal extract, one to 1,000, to the novocain solution. He has used this method in about twenty-five cases and thinks it is the best technique for local anesthetization for operations on the upper extremity.

ZENTRALBLATT FÜR CHIRURGIE.

June 22, 1912.

1. L. V. MAYERSBACH: Experiments with Noviform.
2. E. BIRCHER: Duodenjejunal Occlusion of Intestine, Independent Clinical Picture.
3. B. PRZEWALSKI: Maximal Stretching of Rectum as Very Early Symptom in Acute Septic Appendicitis.

ROUSSKY VRATCH.

March 17, 1912.

1. A. N. RUBEL: Treatment of Pulmonary Tuberculosis with Kummess (*To be continued*).
2. S. G. ZARETSKY: Present Status of X Ray Therapy in Diseases of Women.
3. A. V. KOLMAKOFF: Irregularities of Valve of Inferior Vena Cava.
4. S. I. DOBROSKLONSKY: Microscopical and Chemical Examination of Three Samples of "Famine Bread" during Winter of 1911-1912.
5. I. P. MICHAÏLOVSKY: Preservation of Rubber Articles.
6. P. I. KOZLOVSKY: Malignant Granuloma of Bend.
7. A. A. ALEXANDROFF: Bilateral Traumatic Dislocation of Hip.

March 24, 1912.

8. A. PH. KAKOVSKY: Treatment of Nephritis.
9. A. N. RUBEL: Treatment of Pulmonary Tuberculosis with Kummess (*Continued*).
10. N. M. ARCHANGELSKY: Comparative Action of Inorganic and Organic Combinations of Arsenic on Isolated Heart.
11. Z. I. PONOMAREFF: Intestinal Polypus Causing Manifestations of Gastric Stenosis and Subsequent Invagination of Small Intestines.
12. P. I. KOZLOVSKY: Malignant Granuloma of Bend.

2. **X Rays in Gynecology.**—Zaretsky presents the following conclusions, based on the literature and his own observations: A. Diseased conditions in which röntgenization is distinctly indicated: 1. Simple hemorrhages during the climacteric. In these cases röntgenization of the ovaries acts specifically. The menopause is readily established. 2. Hemorrhagic conditions of the uterus. The curative effect of röntgenization of the ovaries is greater the older the patient. It is advisable to curette the uterus before instituting treatment. In all these cases malignant disease of the uterus should be excluded before treatment is undertaken. 3. Benign tumors of the uterus (fibromyoma), with or without hemorrhage. Röntgenotherapy is here indicated, if an operation is refused; in mild cases in patients who are approaching the menopause; in the presence of contraindications to operation (disease of the heart and kidneys). Here the rays should be applied to the ovaries as well as the tumor. The presence of submucous myoma should be excluded. B. Pathological conditions in which röntgenotherapy may be proposed: 1. Chronic oophoritis and sexual hysteroneurasthenia. 2. Dysmenorrhea; röntgenization with a mild current. 3. The production of sterility to meet clinical indications. The younger the patient the more difficult the sterilization. In these cases röntgenization is indicated when an operation for the induction of sterility is refused or contraindicated. 4. In cases of cancer of the

uterus and annexa, following operation, to prevent return of the growth, or in inoperable cases as a palliative to stop pain and hemorrhage. 5. Pruritus vulvæ of neurotic origin or without definite cause. 6. In tuberculosis of the external genitals, mainly, when operation is refused or the case is inoperable.

4. **"Famine Bread."**—Dobroskloonsky investigated several samples of bread which the peasants ate during the periodical famines in certain parts of central Russia. He found that this famine bread is not sufficient to sustain life in man and must lead to exhaustion, disease, and premature death. In conclusion he quotes Spencer's dictum that the future belongs to the best nourished nation.

5. **Preservation of Rubber Goods.**—Michailovsky discovered that rubber articles may be preserved for long periods by covering them with powdered naphthalin. He sprinkled naphthalin on rubber tubing and placed it in a glass jar. Three years later he found the tubing in perfect condition.

8. **Nephritis.**—Kakovsky points out the comparative futility of drug treatment of chronic nephritis. In the clinical observations he has made he found that even diuretin is rarely of any value, and frequently even harmful on account of the irritation of the already diseased kidneys. The same is true of the other diuretics. This being the case, all we can do is to assist nature by measures other than drugs, and of these proper diet is of prime importance. It is necessary to adjust it, not only to the anatomical and physiological conditions of the kidneys, but to the state of digestion, nutrition, idiosyncrasies, taste, and other individual peculiarities. The following regimen is suggested by the author:

1. In acute nephritis the patient receives during the first two days mildly alkaline water, then boiled milk in gradually increased amounts, but not more than two quarts in the twenty-four hours. From the tenth day, cream, butter, and milk sugar are added. From the twentieth day, sugar, rice, farina, white bread, and tea may be added. 2. In subacute nephritis, vegetables, fruit, and two or three scrambled eggs may be added to the milk, carbohydrates, and fats. 3. In chronic parenchymatous nephritis it is necessary to take into consideration the state of general nutrition, and arrange the mixed diet accordingly, individualizing each case. Generally, carbohydrates, fats, and albumin, not exceeding seventy grammes daily, may be given. The patient may be safely allowed wholesome vegetables, fruit, tea, fruit juices, milk, almond milk, butter, fresh bacon, and eggs. If it becomes necessary to allow meat, it should be given with great care. Spring chicken should be allowed first, and if no bad results follow, other meats may be permitted; veal, pork, mutton, and beef, also fresh fish. Preserved meats, cheese, fish, pastry and alcohol should be forbidden. 4. In interstitial nephritis, the amount of water taken daily should be restricted to about 1,050 c.c., and stimulating liquids, condiments, mushrooms, and any canned or preserved food should be forbidden. 5. In nephritis with azotemia it is necessary to limit the amount of albumin. 6. In nephritis with chloride retention, the amount of chlorides allowed should not exceed five grammes daily. The assertion that a vegetarian diet is not sufficiently nutritious is offset by the fact that most

Eastern nations are vegetarian and even in Russia, millions of peasants live largely on a vegetable and milk diet, taking meat only twice a year.

10. Arsenic and the Heart.—Archangelsky found as a result of experimenting on the isolated rabbit's heart that inorganic arsenical combinations are more poisonous than the organic. The former cause considerable depression of cardiac action in dilution of one to 10,000 to one to 100,000, while the latter cause no appreciable depression, even in strong solutions. It appears that the inorganic salts of arsenic, like the salts of the heavy metals, produce permanent changes in the neuromuscular mechanism of the heart. Of the organic combinations, cacodylic acid and hectine are the more toxic, producing depression and arrhythmia in dilutions of one to 1,000 to one to 2,500. Salvarsan and its oxidation products do not show any appreciable effect on the heart, even in dilutions of one to 5,000.

RIFORMA MEDICA.

June 8, 1912.

1. J. LHERMITTE and P. BOVERI: Cavity in Medulla Following Compression of Bulb; Cavities of the Spine Caused by Compression.
 2. A. PICAVATTE: Traumatic Experimental Aneurysm.
 3. M. DARDANELLI: Contusion of Abdomen with Subcutaneous Rupture of Wall (Concluded).
- June 15, 1912.
4. P. MARFORIO: Union of Basic Hydrochloride of Quinine with Urethran.
 5. F. LUNA: Mediterranean Fever in Infants.
 6. M. FERRETTI: Artificial Pneumothorax in Treatment of Pulmonary Tuberculosis.

1. Cavity in Medulla.—Lhermitte and Boveri had occasion to study a case in which at the autopsy the medulla was found to be transformed into an empty tube, with very fine walls, from the first cervical to the tenth dorsal vertebra; the bulb was deformed and flattened by a bony tumor originating from the basilar process of the occiput. They tried to reproduce in dogs the same lesions observed in the case reported; and, although not very successful, their experiments led them to believe that, in certain cases, in human beings, a compression of the bulb is sufficient to cause the formation of a cavity extending from the cervical to the dorsal portions of the medulla; that the formation of this cavity, in all probability, is due to a deep modification of the circulation in the gray substance.

3. Contusion of Abdomen.—Dardanelli makes a complete and thorough study of the etiology, pathology, diagnosis, prognosis, treatment, and literature of contusion of the abdomen with subcutaneous rupture of the wall, without important lesion of the skin, reporting some very interesting cases. He insists on the importance of early diagnosis of such cases, because their condition becomes extremely serious in a short time and the chances of final recovery depend on early intervention. He warns the surgeon that these patients are the most difficult to handle, because they are in such low condition that any improper procedure will cause death. Only surgeons who are absolutely masters of every detail of abdominal surgery should handle these cases, because on opening the abdomen the surgeon has to expect and be able to meet the most complicated conditions requiring the greatest skill in order to do thorough work without causing unnecessary trauma. It is impossible to give any special indication, because all the cases are so different, but as a

general principle, it is necessary to do the work as thoroughly as possible. The surgeon must see if there are any lesions of the intestine and repair them; he must be sure that he has not left any bleeding point unchecked. When there is a great quantity of blood clots he must remove all. If fecal matter is present in the abdominal cavity he must expect a peritonitis which will be very serious on account of the very low condition of the patient; in such cases it is necessary to establish good drainage, and Dardanelli recommends using tubes in preference to gauze, the drainage being more complete, and avoiding adhesions of the gut to the gauze. Any method to prevent postoperative shock should be used and left to the judgment of the surgeon. The greatest danger comes from a general peritonitis which kills the patients even before any local manifestation indicates danger. Therefore it is necessary to help the patient to fight the absorption of poisonous products; proctocolysis and hypodermoclysis are the two best means at our disposal. If there is any sign of a collection of pus or blood, this should be evacuated immediately, if possible under local anesthesia. If intestinal paresis is present enterotomy and flushing of the intestine with large quantities of warm saline solution are necessary; in favorable cases appendicostomy. Temporary gastrotomy performed in order to suppress vomiting and distention of the stomach is inferior to repeated washing with the stomach pump.

6. Artificial Pneumothorax.—Ferretti states that the technique for the production of artificial pneumothorax, as recommended by Forlanini, is very simple and safe, especially when a manometer is attached to the Forlanini apparatus. As for the clinical indications and the results to be expected, Ferretti comes to the following conclusions: 1. The indications for artificial pneumothorax appear to be limited to cases of unilateral pulmonary tuberculosis. 2. It is very important, for the prophylaxis, that there is a very marked decrease and sometimes disappearance of expectoration. 3. The pneumothorax does not exercise a constant and durable action on the lesions of the other lung. 4. At times the pneumothorax controls hemoptysis rapidly and completely. 5. Adhesions of the pleura are a contraindication. 6. The technique is easy and the possible complications are of no importance.

AMERICAN JOURNAL OF SURGERY.

May, 1912.

1. O. VON HERFF: Operative Castration versus Sterilization by X Ray.
2. J. D. BARNEY: Tuberculous Epididymitis.
3. VIGUARD: Renal Tuberculosis in Child.
4. J. DUNLOP: Adolescent Tibial Tubercle.
5. H. NEUBOF: Nonpurulent Peritonitis Complicating Appendicitis.
6. E. MILOSLAVICH: Aplasia of Appendix.
7. I. I. GREEKAW: Motor Insufficiency of Stomach on Basis of Gonorrheal Perigastritis.
8. W. KAUSCH: Anastomoses between Bile Passages and Intestines.
9. PAVA: Incision of Iodine Disinfection on Opened Stomach and Intestinal Tract.
10. B. KILVINGTON: Regeneration of Nerves, with Regard to Surgical Treatment of Certain Paralysis.
11. C. J. MACLISTER: New Cell Proliferation; Clinical Application in Treatment of Ulcers.
12. R. V. HOESSLIN: New Symptom of Aneurysm of Aorta.

1. Operative Castration or Sterilization by Means of the X Ray.—Von Herff says that surgical castration for myomata accomplishes a positive cure in ninety-five per cent. of cases; the growth ceases to develop, and often shrinks altogether,

while hemorrhages are entirely controlled. The excision is in submucous myomata or polypoid or degenerated subserous myomata. Surgical castration for myomata still has its justification as a technical procedure on account of its comparatively slight mortality and is therefore to be preferred to radical hysterectomy, also to x ray sterilization, because of its surer and quicker results. The sequelæ attending a protracted x ray treatment for the purpose of castration, are often dangerous to life. Laparotomy, moreover, offers the further advantage of exploration in those cases in which malignant degeneration of the myomata is suspected.

2. **Tuberculous Epididymitis.**—Barney asserts that after the removal of one or both epididymes, the large majority of patients are found to be in good condition, and gain in weight. In two thirds of the cases there is no demonstrable evidence of tuberculosis elsewhere than in the genitourinary tract. In postoperative sinuses, which are found in about twenty-five per cent. of these cases, the use of tuberculin after operation hastens convalescence and closure of the sinuses more than any other method. No case in which epididymectomy was performed is known to have had a recurrence in the corresponding testicle, but tuberculosis of the prostate and vesicles is found in more than half, and it is probable that this number would be greater were the methods of detecting early and centrally located lesions more accurate. In a very large majority the sexual function is undisturbed, but the semen is found to be sterile in eighty-five per cent. of cases.

4. **The Adolescent Tibial Tubercle.**—Dunlop calls attention to the significance of the tibial tubercle in the adolescent, because little has been printed in American literature on the subject. It is the result of the downward growth of the upper epiphysis of the tibia, overlies the shaft, and is neither completely ossified nor solidified nor solidly united to the shaft until the eighteenth or twentieth year. Owing to the fact that the ligamentum patellæ is directly inserted into the tibial tubercle, it can readily be seen that the tubercle is subjected to constant strain before firmly attached. Avulsion of the tubercle is thus a not infrequent result of sudden contractions of the quadriceps. These patients tire very quickly, and complain of pain in the region of the tubercle; sometimes the pain is brought on only by exertion. Some of the cases termed growing pains are affections of the tibial tubercle. There may be subpatellar bursitis, effusion into the knee joint, etc.; but the diagnosis is simple, since the condition does not resemble anything else. X ray examinations, if carefully made, will reveal this condition.

7. **Motor Insufficiency of the Stomach on the Basis of Gonorrheal Perigastritis.**—Grekaw believes that many cases of perigastritis of obscure origin found at operation are due to a gonorrheal peritonitis of low grade. Clinically, he has seen a number of cases of acute gonorrheal peritonitis in which the symptoms were referable to the upper right quadrant of the abdomen. In fact, sometimes the diagnosis of cholecystitis or perforated gastric or duodenal ulcer was made.

9. **Tincture of Iodine Disinfection on the Opened Stomach.**—Payr is very enthusiastic as to the value of tincture of iodine to the incised mucosa when operating upon the stomach or intestine.

He employed the procedure for three years and believes it diminishes materially the chances of infection from those sources. He formerly used ten per cent., but now he uses five per cent. solutions.

11. **A New Cell Proliferant.**—MacLister refers to a new cell proliferant, derived from the common comfrey, *Symphytum officinale*. After experimenting with this and a thorough analysis, he found it useful in indolent ulcers. He found that the most important active ingredient is allantoin. Solutions of this substance were applied to many forms of chronic ulcers and they healed rapidly. He tried it on a gastric ulcer and had beneficial results; he also advises its use in skin grafts. The solution is applied in a strength of three or four per cent.

12. **New Symptom of Aneurysm of the Aorta.**—Hoesslin draws attention to a curious phenomenon in a case of compression of the left bronchus by a thoracic aneurysm. There was a loud, stridulous, somewhat prolonged inspiration, while the expiration consisted of single rhythmical, expulsive efforts with a short pause, which was soon followed by rhythmic sounds audible at some distance. The simple explanation is that the trachea was compressed to that degree in which inspiration still could take place. Expiration was possible only when the aneurysmal sac emptied itself during diastole; during systole, however, expiration was entirely suspended.

ARCHIVES OF PEDIATRICS.

May, 1912.

1. MAYNARD LADD: Studies in Nutrition and Digestion of Infants.
2. MATTHIAS NICOLL, JR., and ANNA W. WILLIAMS: Inclusion Bodies in Blood of Scarlet Fever.
3. HENRY LING TAYLOR: Surgery of Rhachitis.
4. ALEXANDER MCALLISTER: Some Newer Aspects of Infant Hygiene.
5. EMERY MARVELL: Appendicitis in Childhood.
6. ALFRED F. HESS: Cool Bed for Infants.
7. FRANK VAN DER BOGERT: Throat Infection with Glandular Enlargement.

2. **Inclusion Bodies in the Blood of Scarlet Fever.**—Nicoll and Williams confirm the findings of Kretschmar and Dohle of certain inclusion bodies in the polymorphonuclear leucocytes in fifty-one cases of scarlet fever. Of these, forty-five showed the inclusion bodies, and of the six negative cases all had existed more than eight days. They also studied twenty-five control cases, and of these three only showed inclusions. Their control cases were of measles, diphtheria, erysipelas, or pneumonia. They believe that the blood examination in the first week of the disease will serve to differentiate scarlet fever from measles, German measles, and probably toxic eruptions. Whether a similar differentiation may be made in the case of rashes due to sepsis, influenza, and tonsillitis must be left to be determined by further study.

3. **Surgery of Rhachitis.**—Taylor, after discussing the cause, symptoms, various deformities, and dietetic treatment of rickets, takes up the surgical treatment. The surgical management should consist, in the mild cases, in restricting sitting, standing, and walking. Many of the mild cases of bowlegs and some of the other deformities in young children improve or disappear. In severe cases of bowlegs, knockknees, and anterior curves, a corrective operation should be performed. The bones may be broken at the point of election by the hands over a block (manual osteoclasia), or by a machine (instrumental osteoclasia), or the bone may be di-

vided by an osteotome pushed through the skin (subcutaneous osteotomy), or through an open cut (open osteotomy). The deformity should be slightly overcorrected and put up in a plaster splint, which may be left on six or eight weeks and reapplied if necessary. In unstable cases, braces should be worn for some time. The author has never seen delayed union after an osteotomy or osteoclasis. In anterior curves of the tibia the bone is broken sidewise, and afterward the posterior angle is thoroughly opened up. The rachitic spine may require recumbency for some months, as sitting aggravates the trouble.

5. **Appendicitis in Childhood.**—Marvel says that from thirty-five to forty per cent. of the patients with appendicitis treated are under fifteen years of age. Of the author's private patients operated upon during the past five years, forty-six per cent. were children. In children the histological, anatomical, and physiological conditions invite, and the habits incite appendicitis. The solitary glands and follicles of Lieberkühn furnish abundant lymphoid structure, more susceptible to morbid processes in the development of childhood than in maturity. The proportionate size of the appendix to the colon in the child is greater than in the adult. Its position, with the colon high and the appendix hanging, favors more its becoming a receptacle for the contents of the colon. Violence of action, the infant in crying, the child in rope jumping, and other sudden impulsive movements, serve as additional injury, or force the contents of the colon into the appendix lumen. Localization of the tenderness in a distressed baby may be quite difficult, but one need not consider ectopic rupture, renal calculi, or obstruction from malignancy. The acute attack exhibits distress, restlessness, vomiting, crying, and abdominal soreness. So do acute digestive disturbances; but in the sleeping or restful moments, slight, and then greater, pressure over the abdominal surface, comparing the respective positions, forms the crucial test. The cardinal symptom is local tenderness over the appendix. Rectal examination aids the determination. Chronic appendicitis is insidious and protracted in its course. It is less frequently suspected, but claims a greater number of victims. Violent acute attacks are too often the outcome of the chronic insidious preparation.

JOURNAL OF NERVOUS AND MENTAL DISEASE.

May, 1912.

1. HORACE CARNCROSS: Bilateral Supranuclear Palsy of Upper Facial Distribution.
2. EDWARD MEEVER WILLIAMS: Intermittent Claudication in Upper Extremities.
3. EDWARD L. HANES: Acute Delirium in Psychiatric Practice with Special Reference to So Called Acute Delirious Mania (Col-lapse Delirium).
June, 1912.
4. JOSEPH FRAENKEL: Dysbasia Lordotica Progressiva, Dystonia Musculorum Deformans—Tortipelvis.
5. W. J. SWEASLEY POWERS: Interesting Emotional Dream States from Royal Charité Hospital in Berlin.
6. ROBERT T. EDES: Tumor of Frontal Lobe.

1. **Bilateral Supranuclear Palsy of the Upper Facial Distribution.**—Carncross presents two cases, one with pathological studies, in support of the contention that palsy in the distribution of the upper branches of the facial nerves may be caused by supranuclear lesions, at the same time discrediting the view that some of the fibres of the seventh nerve are derived from the oculomotor nucleus via the posterior longitudinal bundle. Clinically the

two cases were similar, showing evidence of bilateral brain lesions, particularly bilateral facial palsy, involving upper as well as lower distributions without changes in the electrical reactions of muscles. Post mortem, areas of softening were found, involving both pyramidal tracts in the brain stem, and the nuclei of the seventh nerves were intact, as well as their roots external to the pons.

2. **Intermittent Claudication in Upper Extremities.**—Williams reports the case of a man of fifty-eight years in whom the symptoms of claudication developed suddenly in the left arm during an attack of influenza, and suggests that the cause may have been an infectious endarteritis as reported by Erb. The continuous pain, absence of radial pulse, and the gradual subsidence of all symptoms seem to support this view.

4. **Dysbasia Lordotica Progressiva, Dystonia Musculorum Deformans—Tortipelvis.**—Fraenkel briefly reviews Oppenheim's contribution in which this condition was first described and named, and reports four cases of a similar nature. According to Oppenheim the characteristics of the condition are deformity about the pelvis and tonic and clonic myospasms of the musculature of the pelvic girdle, sometimes associated with involvement of other muscles. Attempts to stand or walk excite the spasms, while most of the symptoms disappear when the patient is in the recumbent position. The gait is grotesque, and is described as "monkey" or "dromedary gait." Permanent deformity develops, consisting of a marked lordosis of the lower dorsal and upper lumbar vertebrae, with inclination of the pelvis and prominence of the buttocks. Signs of organic disease of the nervous system are absent, though variations in the tendon reflexes are noted. Oppenheim is convinced that the condition has an anatomical basis, though it greatly resembles a neurosis. The four cases which Fraenkel reports correspond with those of Oppenheim. The course is chronic and progressive, though remissions occur. Transient benefit was obtained in one case by psychotherapy and muscle education, and in another by intraspinal injections of magnesium sulphate. Fraenkel is inclined to classify the condition among the tics and spasmophilias, and to individualize it by the name "tortipelvis" from its analogy to essential torticollis.

5. **Interesting Cases of Emotional Dream State.**—Powers believes that emotional shock as the chief and active cause of dream states has not received sufficient prominence, and sides with those who contend that a dream state can develop on a basis of emotional shock without predisposing etiological factors, although this is denied. In three of his cases the dream states were precipitated by emotional causes in patients predisposed by alcoholism, hysterical stigmata, or epileptic history; but in the other case no predisposing factors were present. The patient's heredity and personal history were free from neurotic taint. He was an operator of an electric crane in a foundry and accidentally caused the death of a fellow workman. On discovering the fact by seeing the man's body he passed immediately into a dream state which lasted for many hours. He eventually returned to the same work and there has been no recurrence of the attack. Powers lays emphasis on the suddenness of the

psychic shock in relation to its effects, and states that in all probability emotional dream states are brought about by vasomotor disturbances.

JOURNAL OF LARYNGOLOGY, RHINOLOGY, AND OTOLOGY

May, 1912.

1. PERRY G. GOLDSMITH: Thrombosis of Lateral Sinus, Resection of Internal Jugular, Spontaneous Evacuation of Abscess of Posterior Fossa through Foramen Jugulare; Recovery.
2. J. H. H. PEARSON: Results of Enucleation of Fauical Tonsils.
3. J. BERT-HAMILTON: Results Obtained in Fifty Cases of Submucous Resection of Nasal Septum.

2. **Enucleation of Fauical Tonsils.**—Pearson states that in cases in which the tonsils were enucleated, there appeared no detrimental change in the singing voice, but in the majority a decided improvement. His observations further led him to note that healing generally takes place in three ways, viz., by flattening out both faucial pillars against the lateral pharyngeal wall, with more or less complete obliteration of the tonsillar fossa; by obliteration of the tonsillar fossa as the result of the fusion of the two pillars; and by retention of both pillars and fossa during the healing process.

Proceedings of Societies.

AMERICAN THERAPEUTIC SOCIETY.

Thirtieth Annual Meeting, Held under the Auspices of McGill University, at Montreal, Canada, May 31 and June 1, 1912.

The President, Dr. ALEXANDER D. BLACKADER, in the Chair.

Annual Address of the President.—Dr. ALEXANDER D. BLACKADER, of Montreal, on behalf of the university, the medical profession, and the citizens generally, welcomed the society to the largest and most prosperous city of the Dominion. He then gave a historical sketch of Montreal. Mr. James McGill, who died in 1813, left all his property, valued at the time at thirty thousand pounds sterling, for the foundation of an institution of learning to be called by his name. It was under the auspices of the university founded by him that the American Therapeutic Society met to-day.

Therapeutics, the cure of disease, he went on to say, was the end of all medical study, and the term used in this broad sense embraced all means which had to do with the saving of life, the relief of suffering, and the conservation of human energy. It might also include surgery itself. Under such a definition the scope of the society embraced all medicine. Employing the term in the more limited meaning under which it was commonly understood, he had asked himself whether to-day therapeutics took the place it surely ought to hold in medical teaching and in advanced medical thought. To many it appeared to fail in doing so, and there were few of our great physicians who had not for many decades been more or less permeated with "Osler's black, helpless, hopeless, therapeutic pessimism." Personally, he could recall the comparatively numerous instances in which bleeding was recommended, the frequency with which mercury was pushed in many inflammatory conditions, until the gums were touched, and the confidence with which tartar emetic was given in the early treatment of pneumonia, when he was a student of medicine in

the sixties. He had a vivid recollection some years later of poring over the pages of his Ziemssen by night, reading the enthusiastic Liebermeister, and on the following day dosing his toxic typhoids with 20 or 30 grains of quinine, given two and three times daily, in the vain hope of lowering temperature and antagonizing the infection. Often he had sat up all night, at the crisis of a pneumonia, administering brandy with a free hand, and it was but yesterday that, to quote Osler, he had "plunged his sizzling hot typhoid patients into a bath of iced water for a quarter of an hour at a time, and watched them, all cyanosed, shiver and chatter in a vain attempt to regain at least comfort." Among the hundreds of drugs in our pharmacopoeias and dispensaries, those which cured (our specific remedies) might be counted on the fingers—some would even say, on the fingers of one hand. All the others assisted us only in the relief of symptoms, and too often, in this symptomatic treatment, the physician trusted to Nature and played to the gallery. And, intrusting to this *vis medicatrix nature*, what a wonderful revelation of her powers in combating disease had been made to us by the studies of Metchnikoff, Ehrlich, Morgenroth, Wassermann, Wright, and many others. How dimly had we, up to the present, appreciated the fact that there resided within the animal body a set of potential forces capable, when aroused and stimulated, of exercising a highly effective control over almost all forms of disease. In the elucidation of these mysteries of Nature the general practitioner had but a small place, for, as a rule, such investigations could be carried on only in institutions endowed by government, as in Germany, or by private individuals, of whom America afforded so many notable examples. Our belief was that in the strengthening of this wonderful mechanism of Nature lay the therapy of the future, but there was still an infinity to be learned; for the mysteries of the antibodies had as yet scarcely been fringed. In connection with these thoughts we might recall that no advance in therapeutics had been of greater value to the world than the modern appreciation of the advantages arising from the breathing of fresh air; of sleeping in it, working in it, and, as far as possible, of living in the open. It was undoubtedly one of the greatest stimulants to the activities of the phagocytes and to the development of the various forms of antibodies which to-day we possessed. Doubtless, also, the great value of climatotherapy, hydrotherapy, psychotherapy, and possibly of electrotherapy depended upon a similar stimulation of this defensive mechanism of Nature. Bier's method of inducing local hyperemia, too, afforded the means for the reinforcement of these natural forces at any desired spot. Much valuable thought along these lines had likewise been given to the profession by our revered confrère, Dr. Sajous, who in his philosophic presentation of the adrenal, thyroid, and pituitary glands had told us of the active part which he believed they took in the development of antibodies. The profession all over the world placed a high estimate on the researches which his enthusiasm and unflinching energy had carried out in connection with the various activities of these internal secretions.

Dr. Blackader was, however, by no means willing to be classed as a hopeless pessimist regarding the value of drug therapy. On the contrary, he had a strong belief in the limited value of the great majority of our pharmacopoeial drugs when used with a definite knowledge of their action. Only when we knew the exact physiological action of a drug, both in health and under pathological conditions, were we able to use it in a useful, purposeful way, and to avoid its undesired and too often toxic side effects. The outlook in therapeutics had been dark because hitherto therapeutics had been taught as a mere empiricism. The future was bright because in all our best medical schools the students to-day were taught practically, as well as theoretically, the action of each drug; and it was his belief that if the many brilliant men who were therapeutic pessimists had had the advantage of a practical training in a modern pharmacological laboratory during their student days, they would now be more optimistic, as well as clearer, in their therapeutics. During the past year the cause of therapeutics had been greatly encouraged by the success attending Ehrlich's persevering investigations into the modifications of therapeutic action by variations in chemical structure. A similar investigation was now being carried on by Flexner, who was endeavoring to elaborate some modification of hexamethylenamine which, while retaining its central formation possessing an effective germicidal action, might develop a specific affinity for and a toxic action on the microorganisms of poliomyelitis. Owing to the growing demand of the profession for new agents, there had been forced upon its notice an enormous number of new drugs of whose action we had no knowledge except the statements of the commercial houses introducing them. He desired to say how highly the profession in Canada appreciated the proposition of the council of the American Medical Association to institute a critical study of many of the more urgent problems in therapeutics demanding investigation, involving the compilation of all available data and the supplying of such to all members of the profession willing to assist with clinical research work. Later on, digests and monographs would furnish the profession with facts upon which dependence could be placed. Such an effort should have not only our best wishes, but our active co-operation, and, in his opinion, this society should lead the way.

Report of the Committee on Therapeutic Research. A Prize of \$500 Offered.—The Committee on Therapeutic Research reported that no report on a subject of therapeutic research had been received in the competition offered by the society; and recommended that the competition, instead of being confined to members of the American Therapeutic Society, should be thrown open to the profession at large; also that the amount of the prize offered should be increased from \$200 to \$300, or more. This report having been referred to the council, the council recommended that the prize should be \$500 and that the competition should be open to the medical profession of the United States and Canada, and these recommendations were afterward approved by the society.

Some Common Types of Hyposecretion of the Thyroid.—Dr. OLIVER T. OSBORNE, of New

Haven, said that many of the conditions which he considered to be due to this cause were not recognized, and patients suffering from disturbed physiology of the thyroid drifted from physician to physician, and were improved only after the correct diagnosis had been made and the proper treatment instituted. Unquestionably, many of these patients were psychopathic, and might improve under mental treatment. The thyroid was peculiarly susceptible to mental stimulation and to mental depression, and anything which quieted mental excitation would diminish a hypersecretion of the gland, while anything which removed mental depression would increase a subnormal secretion of the gland. Some cases of disturbed thyroid secretion looked like pure hysteria, and hence many would be inclined to ascribe the favorable results obtained by treatment directed to the thyroid as simple instances of mental impression. As this gland had a good deal to do with the condition of the blood, when it was sub-secreting it would sometimes allow a condition of this to occur which was not dissimilar to that of hemophilia; in other words, a very aplastic condition, perhaps with a diminished calcium content. When we recognized the very important part the thyroid played in the life of woman, it was not to be wondered at that the gland was apt to become overworked and that its function should finally be retarded. The conditions for which, in his opinion, thyroid subsecretion might be responsible were, cretinism, some forms of eczema, some forms of asthma, infantile obesity, adiposis dolorosa, lipomatosis, some digestive disturbances, some forms of melancholia, chlorosis, amenorrhea, myxedema, senility, and perhaps Raynaud's disease. The stimulants to thyroid secretion were, great sorrow, great joy, nervous tension, sexual excitement, genital disturbances (especially uterine), pregnancy, cerebral stimulants, such as coffee, tea, and alcohol, and such drugs as arsenic, iodides, phosphorus, salicylic acid, pilocarpine, and thyroid extract. He urged that, when thyroid was needed, but small doses be used, as it was an agent potent for harm. When given to patients who ought not to receive it, it would make their symptoms worse, and sometimes but a little of it would push a wavering thyroid gland to over-secretion and Graves's disease. Much of the thyroid substance on the market was inactive, but a small amount of coincidentally administered iodine, as an iodide, would render it active.

(To be continued.)

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Sex Hygiene for the Male and What to Say to the Boy. By G. FRANK LYDSTON, M.D., Professor of the Surgical Diseases of the Genitourinary Organs and Syphilology, Medical Department of the State University of Illinois, etc. Illustrated with 24 Engravings. Chicago: The Riverton Press, 1912. Pp. 304. (Price, \$2.25.)

Doctor Lydston has done something more than issue one of the little pamphlets that have been so numerous of late for the sexual instruction of the young, and has directed his scientific attainments largely to the education of the physician, teacher, and parent, who will, in their turn, impart the information acquired to the children under their

charge. He has thus laudably avoided laying down too broad generalizations and has left the important detail of personal idiosyncrasy to each individual teacher. There is nothing in the book, however, that renders it unsuitable to the boy of fifteen years, say, and many a perplexed parent will prefer to hand over the book to him and take flight, which he may safely do. There is a full exposition of the methods of quacks which should save many a youth from worry and loss of money, and an ample description of the symptoms and ravages of gonorrhea and syphilis. There is an admirable absence of cant in the book, and its tone is excellent in its simplicity and straightforwardness.

Surgery and Society. A Tribute to Listerism. By C. W. SALEEBY, M.D., F.R.S.E., Fellow of the Obstetrical Society of Edinburgh, Formerly Resident Physician to the Royal Infirmary, and Resident Surgeon to the Maternity Hospital of Edinburgh. New York: Moffat, Yard & Co., 1912. Pp. vii-395. (Price, \$2.50.)

The defensive tone of this work is likely to lead the medical reader to inquire whence came the attack upon modern surgery. Perusal will show that the animadversions upon surgical practice were those of Mr. Saleeby himself; he has now changed his mind and believes surgery to be a useful institution. There may be in Great Britain a large audience for a book of this kind, in fact, the recent lawsuit over the statements of a surgeon regarding the uselessness of operation in malignant disease, proves that there is such an audience. In the United States, however, although an individual may object strenuously to a needed operation, we do not think there is any organized opposition to surgery, or any classified list of objections to what surgeons believe to be indications for operation. Doctor Saleeby has a wonderful fluency of diction and roams through the usual oratorical commonplaces with a practiced pen. Throughout, modern surgical practice is referred to as Listerism, although Longism or Wellism might be considered to have equal claims on recognition. The naughty overcharging surgeon is sternly scolded and the insurance act, almost universally condemned by the profession in Great Britain, is cordially approved. The lay reader of this book will, we fear, be suffused with the dangerous "little learning," and will sorely bedevil any surgeon who attends him with a series of half digested pathological theories. We have rarely seen so large a work issued in response to no demand whatsoever.

The New Pocket Medical Formulary. With an Appendix Containing Formule and Doses for Hypodermic Medication: Posological Table; Obstetrical Table; Poisons and Antidotes, etc. By WILLIAM EDWARD FITCH, M.D., Adjunct Attending Gynecologist to Philanthropin Hospital, Assistant Attending Gynecologist to the Presbyterian Hospital, etc. Philadelphia: F. A. Davis Company, 1912. Pp. viii-474. (Price, \$2.)

The prescriptions are to be found under the name of the diseases arranged alphabetically under their Latin or, mostly, English names, with cross references. Thus, for example, we find *peritussis*, see whooping cough; *parotitis* (why not parotiditis?), see mumps; *Bright's disease*, see albuminuria, etc.; nosebleed is treated under epistaxis, without cross reference under nosebleed; etc. The dose of each formula is given in the metric system and apothecaries' weights, the grammes and decigrammes being divided by a vertical line. In many of the prescriptions the source or author is given. Beside prescriptions we also find a short review of treatment with references to similar diseases, thus referring the reader to other sections having a corresponding relation to the malady under consideration. The drugs are given with their Latin names, conforming with the eighth revision of the *Pharmacopœia of the United States*. Another feature of the work is an extensive table of differential diagnoses. In the appendix we find formule and doses for hypodermic medication, diet lists, a dose table, and other items found in similar books, such as weights and measures, comparison of thermometers, table for calculating the period of uterogestation, ligation of arteries, etc. The formulæ seem to be carefully selected and the formulary is thus a valuable addition to our pocketbook literature. Would it be possible, in a future edition, to add between every two printed pages a blank page? Such pages have been inserted, but not uniformly.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, yellow fever, plague, and smallpox were reported to the surgeon general of the United States Public Health and Marine Hospital Service during the week ending July 5, 1912:

CHOLERA—FOREIGN: Ceylon, May 19-25, 1 case; India, May 5, 48 cases, 43 deaths; Japan (Formosa), July 1, present.

YELLOW FEVER—FOREIGN: Chile (Tocopilla), June 8, improving, Ecuador, May 1-31, 48 cases, 26 deaths; Mexico (San Juan Bautista), June 23-30, 4 cases; Venezuela (La Guayra), May 1, 1 case.

PLAGUE—INSULAR: Philippine Islands, April 30-May 7, 1 case, 1 death; Porto Rico, June 14-July 2, 21 cases, 13 deaths.

PLAGUE—FOREIGN: Ecuador, May 1-31, 4 cases, 2 deaths; Egypt, May 1-June 6, 23 cases, 5 deaths; India, May 19-25, 113 cases, 104 deaths; Java, March 31-April 6, 5 cases, 5 deaths; Straits Settlements, May 5-11, 1 case, 1 death.

SMALLPOX—UNITED STATES: California, May 1-31, 93 cases; Florida, June 9-23, 47 cases; Maine, April 1-30, additional, 6 cases; May 1-31, 47 cases; Minnesota, April 2-20, 213 cases; May 1-27, 146 cases; North Carolina, May 1-31, 81 cases; North Dakota, May 1-31 (corrected), 12 cases; Oregon, April 1-30, 14 cases; May 1-31, 33 cases; Washington, April 1-30, 63 cases.

SMALLPOX—FOREIGN: Australia, April 19, 1 case; Canada, June 12-22, 5 cases; Chile, May 26-June 1, 7 cases; Egypt, May 14-20, 4 cases, 1 death; France (Paris), June 2-8, 2 cases, 1 death; Germany, June 2-8, 7 cases; Great Britain (Liverpool), June 2-8, 1 case (corrected), 12 cases; Italy, May 26-June 9, 7 cases, 1 death; Mexico, June 9-22, 1 case, 4 deaths; Portugal (Lisbon), May 27-June 2, 3 cases; Russia (Warsaw), April 1-27, 3 cases, 4 deaths; South Africa, April 28-May 4, 4 cases, 1 death; Spain (Valencia), June 2-13, 13 cases; Straits Settlements, May 5-11, 3 cases; Turkey (Istanbul), May 26-June 1, 15 cases; Constantinople, May 27-June 9, 26 deaths.

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending July 3, 1912:

Bell, Charles, Acting Assistant Surgeon. Granted seven days' leave of absence from June 28, 1912, under paragraph 210, Service Regulations. **Brooks, S. P.**, Acting Assistant Surgeon. Granted twenty-seven days' leave of absence, from June 30, 1912. **Burkhalter, J. T.**, Passed Assistant Surgeon. Leave of absence for one month from July 12, 1912, amended to read "one month's leave of absence from July 5, 1912." **Carter, H. R.**, Surgeon. Granted fifteen days' leave of absence from July 4, 1912. **Foster, M. H.**, Passed Assistant Surgeon. Granted one month's leave of absence from August 1, 1912. **Frost, W. H.**, Passed Assistant Surgeon. Granted six days' leave of absence from June 24, 1912, under paragraph 191, Service Regulations. **Holt, E. M.**, Pharmacist. Granted seven days' leave of absence from July 1, 1912. **Hotchkiss, S. O.**, Assistant Surgeon. Granted one day's leave of absence, June 29, 1912, under paragraph 191, Service Regulations. **Keen, W. H.**, Pharmacist. Granted twenty-seven and a half days' leave of absence, to begin between July 5 and 15, 1912. **Kolb, L.**, Assistant Surgeon. Granted four days' leave of absence from June 28, 1912, under paragraph 191, Service Regulations. **McIntosh, W. P.**, Surgeon. Granted seven days' leave of absence from July 2, 1912. **McLaughlin, A. J.**, Passed Assistant Surgeon. Granted one month's leave of absence from July 15, 1912. **Moore, Dunlop**, Passed Assistant Surgeon. Granted one month's leave of absence from July 15, 1912. **Porter, J. Y.**, Quarantine Inspector. Directed to make the usual annual inspections of the quarantine stations of the State of Florida, when necessary during the close quarantine season. **Rodman, J. C.**, Acting Assistant Surgeon. Leave of absence, without pay, for fourteen days from June 9, 1912, amended to read "eleven days' leave, without pay, from June 9, 1912"; granted four days' leave of absence, without pay, from June 25, 1912. **Rush, J. O.**, Acting Assistant Surgeon. Granted three months' leave of absence, without pay, from July 1, 1912. **Stimson, A. M.**, Passed Assistant Surgeon. Granted one day's leave of absence, June 24, 1912, under paragraph 191, Service Regulations. **Warren, B. S.**, Passed Assistant Surgeon. Granted two days' leave of absence, June 25 and 26, 1912.

Boards Convened.

Board of medical officers convened to meet at the Marine Hospital Office, City National Bank Building, Galveston, Tex., at 11 o'clock a. m., July 8, 1912, for the examination of an officer of the Revenue Cutter Service, to determine his physical fitness for promotion. Detail for the board: Surgeon G. M. Guiteras, chairman; Passed Assistant Surgeon L. P. H. Bahrenburg, recorder.

Board of medical officers convened to meet at the Marine Hospital, Port Townsend, Wash., July 5, 1912, for the examination of an officer of the Revenue Cutter Service, to ascertain his physical condition and report upon treatment of his disability, if necessary. Detail for the board: Passed Assistant Surgeon B. H. Earle, chairman; Acting Assistant Surgeon P. I. Carter, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending July 6, 1912:

Ballard, James C., First Lieutenant, Medical Reserve Corps. Reported for temporary duty at Fort Winfield Scott, Cal. **Brownlee**, Charles Y., Major, Medical Corps. Left Fort Des Moines, Iowa, with 6th Cavalry, en route to Camp Sparta, Wis. **Clark**, John A., Captain, Medical Corps. Left Plattsburg Barracks, N. Y., en route to Mount Gretna, Pa. **Collins**, C. C., Major, Medical Corps. Left Fort Robinson, Neb., on ten days' leave of absence. **Dailey**, Michael A., Lieutenant, Medical Corps. Left Fort Sheridan, Ill., en route with 15th Cavalry to Camp Sparta, Wis. **Halliday**, Charles H., First Lieutenant, Medical Reserve Corps. Reported for temporary duty at Fort Des Moines, Iowa. **Hess**, Louis T., Major, Medical Corps. Ordered to Camp of Instruction, Mount Gretna, Pa., July 3, 1912. **Hutton**, Paul C., Major, Medical Corps. Ordered to Camp of Instruction at Anniston, Ala., July 5 to August 4, 1912. **McKinney**, C. L., Captain, Medical Corps. Ordered to Camp of Instruction at Anniston, Ala., July 5 to August 4, 1912. **Morse**, Arthur W., Major, Medical Corps. Detailed for duty as inspector of Camp Florida Militia, July 6 to 14, 1912. State Camp Grounds, Jacksonville, Fla., instead of Major E. R. Whitmore, Medical Corps. **Purviance**, William E., Major, Medical Corps. Will proceed to his home preparatory to his retirement from active service. **Reynolds**, Charles R., Major, Medical Corps. Ordered to Camp of Instruction at Anniston, Ala., July 3, 1912. **Straub**, Paul F., Major, Medical Corps. Relieved from duty as a member of the General Staff Corps, to take effect July 31, 1912. **Whaley**, A. M., Captain, Medical Corps. Reports for temporary duty at Washington Barracks. D. C. **Whitham**, Jay D., Lieutenant, Medical Corps. Granted one month's leave of absence. **Whitmore**, E. R., Major, Medical Corps. Left Fort Barrancas, Fla., en route to Camp Anniston, Ala. **Willis**, John M., Lieutenant, Medical Corps. Leave of absence extended one month. **Wilson**, James S., Major, Medical Corps. Ordered to Camp of Instruction, Mt. Gretna, Pa. **Winter**, Francis A., Lieutenant Colonel, Medical Corps. Reported on ten days' leave of absence.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the two weeks ending July 6, 1912:

Braisted, W. C., Surgeon. Detached from the Bureau of Medicine and Surgery, Navy Department, and ordered to duty as fleet surgeon, Atlantic Fleet. **Curtis**, E. E., Passed Assistant Surgeon. Detached from the Naval Training Station, San Francisco, Cal., and ordered to the *Supply*. **Halton**, E. P., Assistant Surgeon. Ordered to the Naval Hospital, Puget Sound, Wash. **Henry**, Hubert, Pharmacist. Ordered to the Naval Training Station, San Francisco, Cal. **Ideen**, J. H., Surgeon. Detached from the *Washington* and ordered to the *Connecticut*. **Kerr**, W. M., Passed Assistant Surgeon. Detached from the *Supply* and ordered home to await orders. **Lung**, G. A., Surgeon. Detached as fleet surgeon to the Atlantic Fleet, and or-

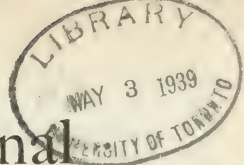
dered home to await orders. **Riker**, G. A., Assistant Surgeon. Ordered to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C. **Sinclair**, J. A. B., Assistant Surgeon. Orders of June 18th revoked; directed to await orders. **Taylor**, E. G., Acting Assistant Surgeon. Appointed an acting assistant surgeon in the United States Navy, from June 27, 1912. **Turner**, H. W. B., Passed Assistant Surgeon. Ordered to the Naval Training Station, San Francisco, Cal.

Births, Marriages, and Deaths.*Married.*

Allaben—**Jackson**.—In Margaretville, N. Y., on Saturday, June 22, Dr. C. M. Allaben, of Roscoe, and Miss Fannie Jackson. **Baker**—**Dieckhoerner**.—In Clayton, Mo., on Thursday, June 27th, Dr. Albert Baker and Miss Mathilda Dieckhoerner. **Divers**—**Martin**.—In Roanoke, Va., on Wednesday, June 26th, Dr. George Thomas Divers and Miss Evelyn Martin. **Epeneter**—**Shuplin**.—In Vinton, Ia., on Wednesday, June 26th, Dr. Franz Joseph Epeneter, of Wadena, and Miss Elsie Shuplin. **Ehrenfried**—**Waterman**.—In Bangor, Me., on Wednesday, July 3d, Dr. Albert Ehrenfried and Miss Grace Waterman. **McCall**—**De Witt**.—In Hallstead, Pa., on Thursday, June 27th, Dr. Frederick W. McCall and Miss Georgia Amelia De Witt. **McGinnis**—**St. Clare**.—In Clarendon, Pa., on Tuesday, July 2d, Dr. George F. McGinnis and Miss Mabel St. Clare. **Neilson**—**Downs**.—In Philadelphia, on Tuesday, July 2d, Dr. Clarence James Neilson and Miss Pearl Emma Downs. **Ross**—**Forcey**.—In Clearfield, Pa., on Tuesday, July 2d, Dr. D. Curley Ross and Miss Anna C. Forcey. **Taylor**—**Markham**.—In Sault Ste. Marie, Mich., on Tuesday, June 25th, Dr. George Rood Taylor and Miss Zaidee Markham.

Died.

Buchanan.—In Reading, Pa., on Thursday, June 27th, Dr. Thomas Claire Buchanan, aged thirty-six years. **Davis**.—In Ellington, Conn., on Wednesday, June 26th, Dr. Edwin Taylor Davis, aged forty-eight years. **Davis**.—In St. Joseph, Mo., on Wednesday, June 19th, Dr. William H. C. Davis, aged sixty-seven years. **Dent**.—In Granville, W. Va., on Thursday, June 13th, Dr. George W. Dent, aged seventy-one years. **Donaldson**.—In Canonsburg, Pa., on Saturday, June 29th, Dr. John Boyce Donaldson, aged sixty-three years. **Gaus**.—In Albany, N. Y., on Saturday, June 29th, Dr. Edward L. Gaus, aged forty-four years. **Gordon**.—In Old Ripley, Ill., on Wednesday, June 19th, Dr. W. E. Gordon. **Gray**.—In Atlantic City, N. J., on Wednesday, June 26th, Dr. John P. Gray, aged fifty-six years. **Grugett**.—In Golo, Ky., on Friday, June 28th, Dr. A. G. Grugett, aged eighty years. **Henckell**.—In Rochester, N. Y., on Sunday, June 30th, Dr. Alfred W. Henckell, aged forty-six years. **Henry**.—In Camden, N. J., on Tuesday, July 2d, Dr. George W. Henry, aged fifty-three years. **Ivey**.—In Corning, N. Y., on Thursday, July 4th, Dr. Ellis Vanderslice Ivey, of New York, aged twenty-nine years. **Ivey**.—In Lenoir, S. C., on Friday, June 28th, Dr. W. P. Ivey, aged fifty-five years. **Keiser**.—In Tamaqua, Pa., on Saturday, June 29th, Dr. Peter J. Keiser, aged sixty-five years. **Lewis**.—In Oak Park, Ill., on Thursday, June 27th, Dr. William Russell Lewis, aged sixty-four years. **Patterson**.—In Iron River, Wis., on Sunday, June 23d, Dr. J. A. Patterson, aged forty-six years. **Richards**.—In Tarrytown, N. Y., on Sunday, June 30th, Dr. William Guy Richards, aged sixty-one years. **Shanahan**.—In Taunton, Mass., on Thursday, June 27th, Dr. Edward J. Shanahan. **Smith**.—In Westerville, Ohio, on Thursday, June 27th, Dr. Isaac Newton Smith, aged seventy years. **Smith**.—In Mount Washington, Pa., on Tuesday, June 25th, Dr. Joseph Henderson Smith, aged eighty-one years. **Spalding**.—In Hingham, Mass., on Thursday, July 4th, Dr. Henry E. Spalding, aged sixty-eight years. **Tobias**.—In New York, on Thursday, July 4th, Dr. George W. Tobias, aged seventy-one years. **Trotter**.—In Fort Des Moines, Iowa, on Saturday, June 29th, Dr. W. R. Trotter, aged sixty-one years.



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NEW YORK, JULY 20, 1912.

WHOLE No. 1755.

Original Communications.

TINCTURE OF IODINE THE BEST SURGICAL DISINFECTANT.

BY FRANK THOMAS WOODBURY, M. D.,
Fort Screven, Ga.,
Major, Medical Corps, United States Army.

It was not so long ago that when the surgeon looked for a reliable surgical disinfectant he was met by a host of substances, bearing the endorsement of physicians and manufacturing chemists, with reports of widely varying technique, ranging from plain soap and water to six different antiseptics in succession, for routine treatment of infected wounds.

He found one drug used for sore eyes, another for irrigation of the bladder, a third for tuberculous abscesses, a fourth as a uterine and vaginal douche, a fifth for gastric lavage, a sixth for skin affections, and a seventh for sterilizing the surgeon's hands. Turning from current magazines to textbooks he cannot yet find a complete list of germicidal substances scientifically compared with a standard table of efficiency.

If he searched the reports he found a host of substances, germicidal or antiseptic, few of which met surgical needs and these few varying among themselves in value and adaptability. This may be emphasized in a negative statement. Argyrol is not recommended for use in the abdominal cavity; boric acid is not useful in tuberculous abscesses; iodoform is not a good dusting powder for conjunctivitis; the cresols are not possible for gastric lavage; aluminum acetate is not efficacious as an injection in buboes; bichloride of mercury is harmful in germicidal strength in gonorrhea and useless in safe solutions; silver nitrate is not used to disinfect the skin of the patient nor the surgeon's hands.

It is not to be wondered at if many, bewildered by this haziness, decided that all disinfectants are good for something and drifted serenely out on a bottomless sea of empiric antiseptics, happy in the company of a large majority of the profession, and that finally they settled down, either through accident or habit, with bichloride of mercury, phenol hydrogen peroxide, boric acid, iodoform, and some organic silver salt each of which in process of time became endowed with specific virtues, thus settling quite satisfactorily, for them at least, the antiseptic question.

By this process a number of substances have been

permitted to parade their laboratory germicidal powers as antiseptic, whereby for a long time they have claimed the triumphs justly due the careful asepsis of the modern surgeon's technique.

The tendency to progress from the Listerian dictum that germs should be killed on the spot, to the aseptic idea that germs might be washed away, leaving uninfected fields, and a desire to bring order out of chaos caused these antiseptics to be subjected to new and more searching tests, whereby it presently appeared that some of our most respected antiseptics turned out to be frauds and some of humble station proved to be of royal rank.

Kinnaman (*Journal of the American Medical Association*, August 26, 1905) compared various antiseptics. The standardizing of commercial disinfectants was undertaken by S. Riddal and J. S. A. Walker, who published their method, based on carbolic acid in the *Journal of the Royal Sanitary Institute*, London, 1903, p. 424. Chick and Martin continued the investigation (*Journal of Hygiene*, 1908, pp. 103, 654, and 698), which was further extended by the Committee of Inquiry of the *Lancet* (*Lancet*, November, 1909).

Post and Nicoll (10) extended the investigation to other antiseptics used in surgery.

Seelig and Gould (54) report their results in testing the penetrative power of various germicidal solutions through animal and artificial membranes. They say: "Our germicide must possess, in addition to the inherent power of killing, the property of reaching the bacteria by penetrating the tissues in which they lie.

"This power to penetrate is none other than the physical and physiological process known as osmosis, and the task we set for ourselves was the determination of the relationship existing between osmotic power and germicidal efficiency."

By a series of ingenious and convincing experiments with bacterial emulsions in collodion capsules, immersed in watery solutions of various antiseptics used in surgery, they demonstrated that the germs were unaffected, even after twenty-four hours' immersion in all the solutions except one, a 12.5 per cent. solution of iodine and potassium iodide, which penetrated and sterilized in twenty-five minutes.

Testing the germs against grain alcohol, they discovered that the osmotic power, and therefore the sterilizing power, varied directly as the concentration alcohol below seventy per cent. being practically inert (requiring seven and a half hours to sterilize) while ninety-five per cent. was highly osmotic and bactericidal within from three to ten

minutes; ninety-nine per cent. being a shade more efficient yet. They tested the alcoholic solutions of antiseptics to ascertain whether the sterilizing power of alcohol would be intensified. They were astonished to find that with the one exception, *iodine*, the unadulterated alcohol acted as efficiently as the solutions, and the dilution, necessitated by making the solution, did not increase, but actually decreased the antiseptic power. To quote: "Harrington's solution, for example, represents a sixty per cent. dilution of alcohol, and it took the same time to kill the organisms, despite its percentage of hydrochloric acid and bichloride of mercury, as did plain sixty per cent. alcohol. *The alcoholic solution of iodine sterilized the organisms more rapidly than did the highest strength of plain alcohol.* This is a fact of striding reason for two reasons. 1. It confirms recent clinical experience regarding the efficiency of tincture of iodine, and, 2, it signifies possibly that by combining two substances with high osmotic power we secure a solution of higher osmotic power than that possessed by either substance acting alone. We found that by raising or lowering the percentage of alcohol, or by raising or lowering the percentage of iodine in the solution, we could proportionately heighten or diminish the germicidal power." This was very suggestive, but it remained to reproduce these results in animal tissues to establish the actual surgical value of these findings. To do this they used the skin, omentum, and mesentery of a live rabbit and the diaphragm recently removed. Their former findings were confirmed, except that the penetration of the tincture of iodine was astonishingly rapid and also a five per cent. phenol solution in water penetrated very rapidly, confirming clinical experience of the rapid appearance of phenol in the urine after extensive applications to the skin.

Since osmosis proceeds best when the fluid on one side of the membrane is thoroughly soluble in the membrane, and since alcohol is soluble in the fatty constituents of the skin and cells, it follows that, within limits, the more fat the greater penetration, a fact demonstrated by L'Hermite (*Annales de chimie et de physique*, 3me ser. xliii. p. 42, 1855), and confirmed by Seelig and Gould (54), by rubbing a rabbit's skin with oil which markedly hastened the subsequent passage of alcohol through it. The contrary to this—removing the oil or fat from the skin by washing with water or fat solvents such as ether and alcohol—retards osmosis and prevents the germicide reaching the deeper structures of the skin. This is the scientific explanation of the admonition not to wash the area of operation with anything before applying tincture of iodine. Further, alcohol, because of its known antiseptic and osmotic qualities, remains the vehicle of preference over all others, as methyl alcohol, carbon tetrachloride, benzene, glycerin, or ether with water, a very good substitute; the alcoholic solution being preferable to any other form of mixture, compound, or salt for the exhibition of iodine in surgical treatment unless we except the ionic treatment, of which more later.

My earliest reference to the antiseptic use of iodine in surgery is to be found in the fourth edition of *The Practice of Surgery*, by T. Bryant, pub-

lished in 1884. He says: "Those who disregard atmospheric germs and yet highly value means for purifying wound surfaces, will use antiseptic irrigation of the wound with a lotion of . . . or of iodine, made by adding ten drops of the liquor iodi to the ounce of water. I have employed iodine lotion for years and prefer it to any other . . . it has the advantage of not only cleansing the wound in the fullest sense of the term, for iodine is an antiseptic, but it has a marked tendency to arrest all capillary bleeding or oozing."

De Forest Willard (25) said: "I am each year more and more satisfied with the use of iodine, both locally and internally. Lugol's solution has been a favorite internal remedy for many years and it is still both clinically and theoretically useful. Locally, iodine has a marked inhibitive action upon the growth of bacilli and is most stimulating to the growth of healthy granulations."

Nicholas Senn (14) stated that in his opinion iodine was the safest and most potent of all antiseptics, and, in proper dilution to serve the purposes of an antiseptic, did not damage the tissues; on the contrary, it acted the part of a useful tissue stimulant, producing an active phagocytosis—a process so desirable in the treatment of acute and chronic inflammatory affections.

Turner and Catto (2) made a solution of thirty parts iodine, forty parts potassium iodide, 500 parts of distilled water, and 500 parts of pure methyl spirits (practically a three per cent. mixture). With this they attempted to sterilize the skin. Bacteriological tests of scrapings showed in no case contaminating organism from the air; primary union was invariable, except in three cases requiring drainage and where the skin was found infected the wounds were in the groin.

J. Wesley Bovee (3) proved that the "skin may be kept sterile indefinitely or at any rate for thirteen days," and that pubic hair kept sterile five days with an application of a fifty per cent. alcoholic dilution of the U. S. P. tincture or a 3.5 per cent. tincture of iodine. He also found that a five per cent. strength of the tincture will produce a bacteria free surface in from two to fifteen minutes and no growths from incubated scrapings. He insists that a three per cent. tincture of iodine is the weakest safe germicidal dilution and that it is efficacious and trustworthy as a routine preparation for laparotomies and operations on perineum, vagina, cervix, and endometrium. In obstetric cases he paints the parts at the beginning of labor (giving especial attention to the cervix, which he advocates as an efficacious prophylactic against ophthalmia neonatorum), and the perineum and vulva just before birth of the child.

His observations are confirmed by the laboratory findings in these cases made and reported by Neate (4).

Kinnaman (20) found that from 0.2 per cent. to one per cent. iodine is an antiseptic of marked potency and that it is far superior to bichloride of mercury. A two per cent. solution killed *Streptococcus pyogenes* in two minutes. He considered a solution of 0.5 per cent. strong enough for all purposes as an antiseptic. This antiseptic solution, he says, is easily prepared and is stable. It is one fourth as

toxic as bichloride of mercury, does not coagulate albumen, is very penetrating, and therefore effective in a very brief time.

Willmott Evans (47) used a 1.25 per cent. tincture to sterilize the skin and says: "I am sure this is amply strong for all ordinary cases." The Medical Department of the United States Army has added iodine and alcohol to its supplies for the field. The surgeon general in his Supply Letter No. 1, 1911, stated that "a two per cent. solution of iodine is adequate for sterilizing the skin and wound surfaces."

C. Decker (5) painted the skin twice before operation with a ten per cent. tincture and after the operation washed with alcohol, ninety-six per cent., and painted the sutures again with the tincture. As he obtained growths from some skin scrapings and not from other, he concluded that the tincture is not a germicide, but merely fixes germs to the epithelium, so preventing their entrance into the wound.

Tinker and Prince (60) state that, as a result of a series of experiments, they do not think iodine to be a good disinfectant and have therefore gone back to old methods. Their conclusions are so at variance with a greatly increasing number of laboratory and clinical observers that we must wait for further developments to reconcile the discrepancy.

As with all drugs so with iodine; it suffers variously at the hands of its friends. An early enthusiasm may plunge into errors which patience and time alone can correct. Possible idiosyncrasies, pathological contraindications, and definite limits of dose are to be expected for iodine as for any other drug.

So far, reports would lead us to believe that the untoward results obtained by some are due to a disregard of these facts, and may be ascribed to carelessness or ignorance in application—either using too much or spreading it over too great a surface, or injecting it into closed cavities, or applying it under coverings which prevent evaporation, or using too concentrated solutions, or using some other vehicle than ethyl alcohol or water, as, for example, chloroform, benzene, acetone, carbon tetrachloride, methyl alcohol, glycerin, phenol, etc., or the so called colorless iodine compounds, which, being stable chemical compounds of iodine and some base, will not liberate iodine in the tissues. Phenol will combine readily with iodine, so that a three per cent. solution is recommended for removing iodine stains and, *vice versa*, tincture of iodine is recommended as a chemical antidote for carbolic acid poisoning. The combination of the two, to obtain the virtues of both, results in a useless solution, more especially if alcohol (which also combines with carbolic acid) is added. *Vide* R. T. Hewlitt (58).

Many other chemical compounds containing a high atomic proportion of iodine have been known and are being introduced, whose claim to recognition as antiseptics is based on the amount of iodine liberated by them in the presence of body fluids or water.

Dannreuther (15) said: "Although iodoform contains ninety-six per cent. of iodine, the consensus

to-day seems to be that iodoform is practically valueless. . . . The only four cases of iodism I have seen (iodine being present in the urine) have occurred as a result of iodoform."

Iodine trichloride, iodine tribromide, iodized starch, iodoform, iodoform, aristol (thymol iodide), iodantifebrin, iodophenin, nosophen, iodipin, and ethyl iodide (which will give rapid saturation of the blood with iodine, as it can be inhaled), iodo-muth, iodomethane, iodonaphthol beta, iodoval, iodo-salicylic acid, iodozen, antiseptol, eigon, alpha eigon, beta eigon, eudoxin, iodo-gallicin, novoiiodine and iodone are some of the numerous compounds said to liberate iodine in the body fluids and alleging great efficacy as dusting powders for wounds or as solutions for irrigation. It remains for laboratory and clinic to clarify our knowledge of them, as some undoubtedly may be of sterling worth. For the present we may apply this remark of De Forest Willard (25): "The opinion of most surgeons in regard to the value of iodoform seems to be based upon the theory that it is the liberated iodine which is the advantageous element, and I see no reason why we should not use the original drug, which is certainly more pleasant than its substitute."

Why not, indeed? Yet the *Encyclopædia Britannica*, eleventh edition, in a very meagre article under the caption, Antiseptics, includes iodoform and omits iodine, nevertheless adding later that "its power depends on the fact that it is slowly decomposed by the tissues and free iodine given off."

We are safe in this dictum, that iodine must be free in the body and cell fluids to exert its alternative and bactericidal action. Iodine vapor would be the ideal form for local application, were it not for its irritant quality in such concentration.

Jungengel reports the direct application of sublimed vapor of iodine to wounds. Unfortunately, his method requires a special apparatus, combining an insufflation bulb, a vaporizing chamber with an incandescent wire, necessitating a battery and a special valve, all of which is quite complicated, delicate, and relatively expensive. How far the vapor of iodine can be made to penetrate tissue is problematical. It would at least form an antiseptic scab and, if highly diluted with oxygen or some inert gas to render it unirritating, might be inhaled for its local action in the respiratory passages.

Ionization, whereby positive and negative groups or elements are electrically torn apart in the very cells themselves, offers us our most ideal method of obtaining the alternative and bactericidal action of free iodine in the tissues.

Axel Reyn (8) reports his employment of this method in the treatment of lupus. The patient having received sodium iodide, an hour to an hour and a half previously, holds the negative pole of the battery in his hand while the positive pole in the form of a fine platinum-iridium needle is inserted into the diseased tissues with a current of three to four milliamperes for three minutes. This is said not to be painful. Nascent iodine separates out at the positive pole in the tissues. He demonstrated this clinically and in the laboratory with the serum,

of animal- and men. A confirming blue tint with starch was obtained at the positive pole.

This is certainly a new trail for the art of surgery to explore. If infected tissues can be sterilized by the insertion of a platinum needle attached to the positive pole of a battery, the negative being held in the hand, after a preliminary course of the iodides it will form a companion treatment to the serum and bacterin therapy in banishing the antiphlogistic knife where the presence of pus now demands mutilating incisions.

A year before Reyn, a variation on this treatment was demonstrated by Pfannenstiel who treated lupus successfully by giving sodium iodide by the mouth and spraying ozone on the ulcerated surface. The iodine thus set free in the tissue had a most powerful effect, combining the alterative with the germicidal property.

Nicholas Senn (17) said that in the treatment of simple hyperplastic goitre, actinomycosis, and blastomycosis, the local use of iodine is made more effective by cataphoresis.

Carrozani, A., and Spadoni, O. (65), as quoted in the *NEW YORK MEDICAL JOURNAL*, November 23, 1901, reported that it is possible by the administration of iodides and the subsequent inhalation of spirits of turpentine to liberate free iodine in the lung tissue and so affect pulmonary tuberculosis.

For ordinary practice and in emergency surgery the two per cent. tincture of iodine will be, however, the antiseptic method of choice.

The presence of five per cent. iodide of potassium in the U. S. P. tincture, says an editorial article in a recent medical journal, "is probably positively objectionable, as the salt would have an irritating effect on an open wound." The writer has not seen this suggested disadvantage reported in medical literature and he inclines to the belief that iodine and iodide of potassium are as active alteratives to cellular metabolism when applied directly as when carried to them in the blood stream.

J. L. Wolheim (39), considering the most important and latest uses of iodine, found but few reports in medical literature of idiosyncrasy or poisoning from iodine used as an antiseptic, and agrees with previous writers that such instances are extremely rare.

The Paris correspondent, S. (9) of the *Boston Medical and Surgical Journal*, in the issue for April 27, 1911, says: "Although it has proved to be one of the safest of all antiseptics, we all know that there are certain patients with a marked idiosyncrasy for iodine with whom small doses produce most alarming symptoms and in particular those of edema of the glottis." He also reports a persistent generalized eczema from a single application of the tincture and a death from acute iodism under similar circumstances. Remembering that the French tincture is ten per cent. strength, this report makes us think of the rash after strawberries or shellfish that some people display. A. A. Boinet, in his large treatise on iodotherapy, published in 1855, quotes a treatment of edema of the glottis by L. and R. Montauban with iodine (reported in the *Bulletin de therapeutique*, vol. 30, page 301).

Surgeon Major P. de Broe (60) reported a fatal case of iodism in an otherwise healthy soldier after sterilizing the skin for a herniotomy for a very large congenital, inguinal hernia. The patient received, the night before, a hot soap and water bath. Just before the operation the skin was painted with a ten per cent. tincture from the right to the left iliac spine, and from the commencement of the buttocks to just below the navel; local anesthesia (cocaine) was used. During the succeeding night a slight cough developed, but auscultation revealed nothing. The front of the chest from the root of the neck as far as the nipples was painted with the ten per cent. tincture. Iodism rapidly developed and the patient died on the third day. Autopsy revealed extremely congested lungs, two thirds of an ounce of serum in the pericardium, spleen slightly friable, kidneys edematous, skin the seat of a profuse dermatitis, no other pathological changes recorded; the blood and bile gave no reaction for iodine; no report of urinalysis.

Propping (61) says that he believes the use of iodine to sterilize the skin of the abdomen is the cause of a coincident increase of intestinal adhesions in his practice, and traces it to the contact of the intestines with the iodine on the skin. He supports his contention by the result of some experiments consisting of injecting small amounts of the ten per cent. tincture into the peritoneal cavity of rabbits and dogs. These results may be granted, as Uyeno (62) described the use of iodine in producing peritoneal adhesions experimentally. The question of dose is evidently the issue here. The thousand and one factors entering into the formation of peritoneal adhesion, as has been shown by E. H. Richardson (*Annals of Surgery*, December, 1911), make it exceedingly difficult to state the cause in most cases.

E. Payr (*Zentralblatt für Chirurgie*, March 23, 1912, as quoted in the *NEW YORK MEDICAL JOURNAL*, April 13, 1912) reports his habit of over three years of painting with tincture of iodine the mucosa of stomach and intestine (when exposed in laparotomy) after wiping it dry. He declares it to be a valuable aid in resection, that it has no ill effects, that it is a powerful stimulus to normal healing, and that cases so treated seemed to have a more favorable course and recover sooner than when iodine was not used.

The writer has used the U. S. P. tincture on the peritoneum deliberately without postoperative adhesions; and Eastman (*Indiana Medical Journal*, xxiv, p. 299, 1905-6), recommends the internal administration of hydriodic acid to prevent peritoneal adhesions.

Decker (5), in an article abstracted in the *Journal of the Royal Army Medical Corps*, September, 1911, said that a ten per cent. tincture caused eczema and burning sensations and catarrh of the upper air passages. He also noted an increase in post-operative pneumonias, his custom being to paint the skin twice before, and once after operation.

We recall the fact that iodine and its salts are not well borne, and are therefore contraindicated in arteriosclerosis with enlarged thyroid, in myxedema and exophthalmic goitre. Further, the more absorptive the surface, the less tincture, both in

quantity and surface to be covered should be applied. Concentrated tinctures (over five per cent.) and the use of any of the chemicals suggested as variants upon grain alcohol as a vehicle for iodine are to be looked at askance. We cannot use iodine recklessly unless we expect absorption of poisonous amounts or unless we expect to see the same constitutional results when a large area of skin is covered as if the same area was burned superficially.

The writer has used the U. S. P. tincture on the tonsils for acute and chronic tonsillitis; in the parturient uterus and on extensive lacerations of the perineum; in the cavity following the evacuation of an amebic liver abscess, on the intestine, the ovary, the bladder, and stomach; in the gallbladder, knee-joint, fistula in ano and tuberculous osteitis; on compound comminuted fractures from crushing and gunshot wounds, on depressed compound fractures of the skull and spine, on amputations, on corneal ulcers, and in various ophthalmic operations; and on his own hands as a disinfectant before operating.

A solution of one teaspoonful of the tincture to a quart of normal salt solution made with pure sodium chloride has been used as a wet dressing to suppurating wounds, burns, and gangrene from frost bite; as a bladder irrigation in acute cystitis, as a vaginal douche, a gastric lavage, a urethral injection, an injection into the spinal canal in a case of epidemic cerebrospinal meningitis, a nasal spray, a gargle, a collyrium, and as a cleansing solution for flushing out the abdominal cavity after suppurating, and for washing out tuberculous bone sinuses. It makes a good rinsing solution for the surgeon's hands during operations.

The writer has yet to see his first case of iodism from this use of the drug, although on one occasion a nervous patient with a duodenal ulcer was receiving gastric lavage and retained a quart of this solution, representing a teaspoonful of the tincture or four c.c., the maximum safe dose according to J. V. Shoemaker (*Therapeutics*, 6th edition), being 0.3 c.c. and failed to feel any symptoms save a sense of fullness.

As regards the erythema and dermatitis, it is interesting to note that a case of the writer of acute catarrhal eczema of face and scalp, due to Mrs. Potter's walnut juice hair dye, yielded to the use of the iodine ointment reduced one third strength by petrolatum.

(To be concluded.)

THE LATEST IN SKIAGRAPHY.*

By J. RUDIS-JICINSKY, M. D.,
Cedar Rapids, Ia.

"There are some discoveries of purely scientific nature that appeal only to a limited class, while others broadly affect the life and happiness of the human race and thus become of universal importance." That is especially true with the discovery of Röntgen rays, which are to-day the greatest help to us in diagnosis, therapy in certain lesions, and to a certain

extent with their photography, may replace both dissection and vivisection. In the living body the location, size, and some disorders of hollow organs, as for instance the stomach, bladder, etc., may be ascertained by causing the subject to drink a harm-

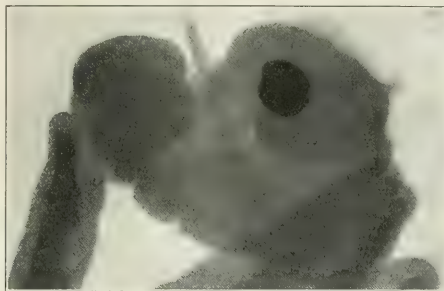


FIG. 1.—Operation in the kidney: I. Palpation for stone by the surgeon. Kidney out of the wound.

less fluid, or injecting the same, and a picture is taken. Tuberculous sinuses may be photographed in the same way, distention of urethra observed, calculi made out, foreign bodies located accurately, and, in soft tissues, especially in the brain, the x rays may determine what parts are the subjects of disease and the area over which the disease extends, just as well as in the lungs and other organs, which in negatives underexposed may give us delicate, ghostlike, yet clearly defined individual layers of muscles, tendons, and sometimes even veins and arteries in older people. The greatest field of usefulness of the x rays we have certainly in fractures, dislocations, diseases of the bones, deformities, and stiff joints. Let us state that especially in this branch of surgery we have made in the last fifteen years of our own experience many researches and



FIG. 2.—Operation in the kidney: II. Cutting down the stone.

*Read and demonstrated before Iowa Medical Union, December 12, 1911.

experiments of value, which change from day to day, bringing us nearly every hour new theories and new developments. Some of these new developments found in our work permit me to relate to you.



FIG. 3.—Operation in the kidney: III. Seizing of the stone.

I do this, not in the spirit of self laudation, and I have no other motive than to serve our profession. I have no ambition for fame, but I have the ambition to seek the truth in science and to do good, if possible.

Some of the "machine manipulators" and so called "experts" will tell you that they know all about this great x of ours, they will say that they have the largest and most powerful machines. Strange to say, we may to-day with a good coil, or even a static machine of a good make, produce pictures altogether different from the older ones and that with few seconds of actual exposure instead of minutes as years ago. In a case where a calculus was found in the kidney with the help of photographic film and the x rays, and the operation performed at once, we followed every detail of the operation step by step from the palpation of the kidney by the surgeon, to

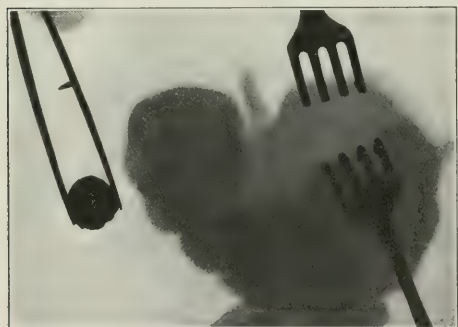


FIG. 4.—Operation in the kidney: IV. Removal of stone

the finding of the stone, cutting down upon it, its removal, and suturing the wound. The negatives were taken with a good Crookes's tube and small Victor portable coil under the operating table, the

coil being attached to the alternating current and the socket of the light in the room. Beside the dark and yellow envelopes, we had each plate in a perfect and white envelope, sterilized. Each exposure with the kidney taken out of the wound, certainly lasted only one second. Absolutely no delay was incurred.

In cases where there is a doubt in regard to a fracture, as there may be a crack only, we may make a positive plate from a negative and thus, when prints are made therefrom, obtain effects of the bones in their natural white color against a dark background. Such a proof is sometimes very interesting. The satisfaction of seeing the results grow under your hands is well worth the extra trouble. You may, with the help of a screen, increase the rapidity of the procedure and exclude the soft tissues, photograph the "living skeleton" of a living subject, and produce prints, which in detail, contrast, definition, substance of the bony tissues, and perspective are not only marvelous, but unique alto-

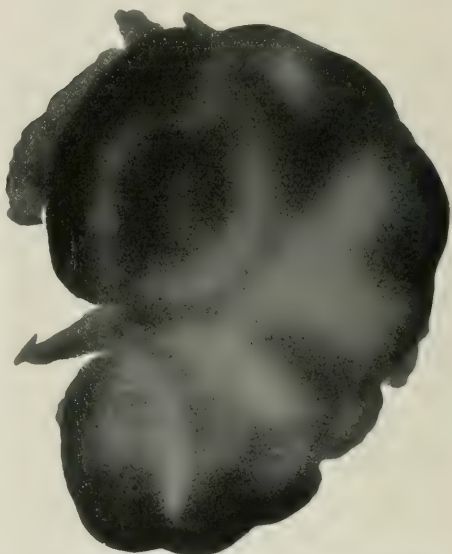


FIG. 5.—Operation in the kidney: V. Operation complete.

gether. Viewed stereoscopically they are still better and of more value. We may also use the latest and specially made paper and expose the same directly. Bromide paper will not do, the sensitiveness being about one fifth that of a regular plate. With our paper chloride, rapid, you simply make the exposure, lasting one or more seconds, and the picture will be grand. It gives us splendid opportunity in cases in which an x ray diagnosis is required immediately, or in medicolegal cases before the jury, etc., and on the spot. And all this is done with a good tube at its best and active, backed up by sufficient energy from our apparatus without the plate, dark room, without development and printing, without special compression diaphragm, and other accessories which we used to have, and, what is still more important, without any unnecessary loss of time.

The diagnosis and the picture are made upon the same identical piece of paper which is exposed to the x rays and while you wait. If we wish, we may place two or more sensitized plates, or our special rapid paper with film sides up, in our new plateholder, or within black and yellow paper envelopes. Using an x ray of moderate activity all the plates or papers will be affected, but in decreasing degree. While the first plate, for instance, is a full exposure for certain superficial parts of the body, the second is equally such an exposure as is best adapted to exhibit other parts, like the heart and internal organs, and the third gives us the interior of the bones and all the detail of the same.

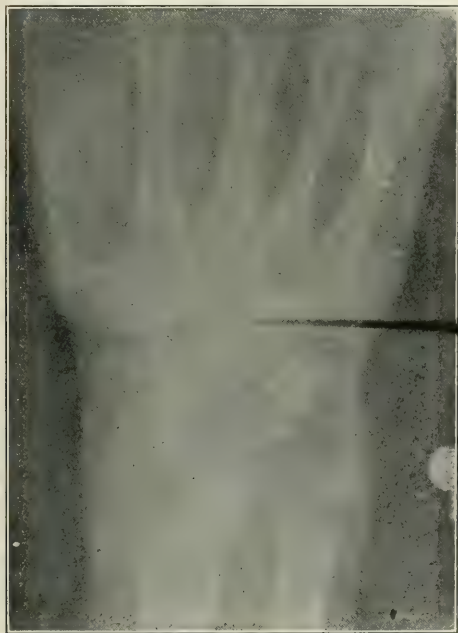


FIG. 6.—Photographed directly upon bromide paper (no good). Exposure, one second.

A great number of layers of films, or of layers of paper, may be arranged in this manner, and thus equally large number of varying revelations of the same interior be gained at one exposure to the x ray. But this is nothing new, when we know how. It is the same with the exclusion of the soft tissues or any part of the picture in printing. In such a case we simply use the screens and then the photographer's method of vignetting, lessening the time of exposure. The screen of calcium tungstate has to be placed inside of our plateholder, or envelopes, with the crystals of very fine grain down upon the film side of the sensitive plate or our special paper. Morton said years ago the reason for this is that the x ray excited the tungstate of calcium crystals to fluorescence and thus acted upon the plate or paper by ordinary light. Such a screen



FIG. 7.—Second experiment. Direct on special chloride paper, rapid. Exposure, one second.

is invaluable as a time saver, protector of tubes and apparatus, in taking pictures of dense structures such as the human trunk. In combination with vignetting, we get negatives or positives of such a



FIG. 8. Third experiment. Special chloride paper, rapid. No plate, no development, no dark room in printing. Exposure, one second.



FIG. 6.—Fourth experiment. Special chloride paper, rapid. Photographed directly. Note the detail, substance, perspective, and contrast. Exposure, one second.

striking beauty and detail and contrast that the surgeon seeing the picture may change his entire plan of procedure.

In such a picture, a fracture, which for some rea-

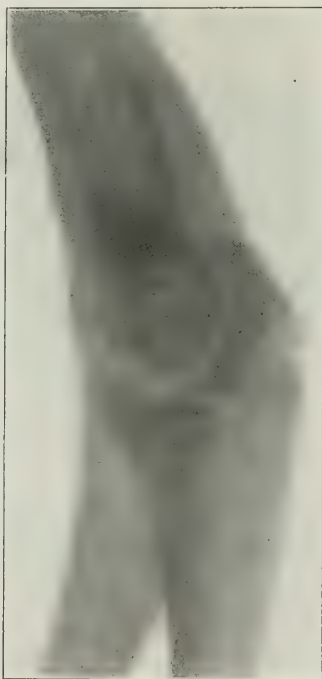


FIG. 7.—Fissure fracture of the olecranon. Soft tissues excluded to show the lesion more plainly.

son had for a long time failed to unite, we will see this way better, observe the actual line of fracture, the seat of the same, and soft callus will not cast a shadow, allowing us to study the apposition of fragments, spiculae, etc., and if the case is illuminated and exposed from different angles, it will give us the best information what to do. It is self evident that the accuracy of the pictures depends mostly on the proper illumination and posing of the subject, with good activity of the tube and the distance of the same from the sensitive plate, or the frame with the special paper, and the screen. Distortion is possible, but with the knowledge of the symptoms, history of the case, and all other necessary data the x rays, if more pictures in a given case are taken, will make a positive diagnosis. In disease of the stump after amputation, the bones and the joints, in pedi-

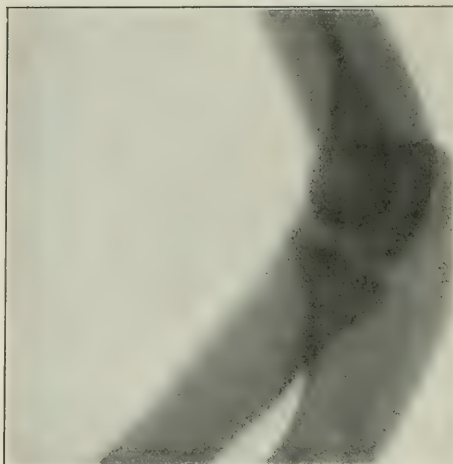


FIG. 11.—Demonstration of the value of the screen and exclusion of soft tissue. Plate and apparatus furnished by Doctor Haller, Davenport, Ia. Taken at his office and plate marked with bunch of keys and name of author. Subject, elbow. Doctor Littig's exposure, actual two seconds. Note the difference in screen method and the old way.

atrics, and even sometimes in obstetrics, and most assuredly in dentistry and medicolegal cases, and with the study of normal anatomy and development of the body, the surgical value of the x ray in proper hands is long established with all other familiar methods of exploration, such as the ophthalmoscope, stethoscope, cystoscope, pressure apparatus, akouophone, microscope, percussion hammer, probe, and others.

For stereoscopic skiagraphs, we have to use an automatic plate changer. It is absolutely light proof and accommodates two plates. By releasing a small catch, the second plate is brought into position immediately for second exposure. In this manner long films may be used also to exhibit some wonderful effects in connection with soft tissue, the movements of the individual organs and bones, and to photograph on the plan of a moving picture, the beating of the heart, the rise and fall of the ribs in respiration, the outlines of the diaphragm and move-

ment of the same, movement of the vertebrae and the greater or smaller bones, and finally the process of digestion in the stomach and intestines, the movements of one or more fetuses in *utero*, with more or less indistinctness.

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THE ANEMIC HABIT

*With Special Consideration of Its Treatment.**

By HARLOW BROOKS, M. D.,

New York,

Visiting Physician to the City Hospital and to the Montefiore Home.

I have no doubt but that every practitioner, while grappling with concrete cases of chronic anemia, has often felt impressed by the inadequate manner in which the apparently simple treatment of the anemias is laid down in the textbooks. In some of the very best the subject of treatment is summarized in but a paragraph or so and the impression is given the student that not only is treatment of these conditions simple and easy, but that it is uniformly successful. From these presentations, it is suggested that in the secondary anemias, remove the cause, give iron, and the trick is done. In chlorosis, give iron and send in your bill. Yet when we come to cope with these conditions in the clinic or in private practice, we frequently find it most difficult to get good results even after the expenditure of a very considerable amount of time and study. Real cure in the treatment of chronic anemia, I am sure every clinician is willing to confess is a hard won laurel, not only in the occasional but in the average case.

This is particularly true in those anemias which are of very long standing, although they may be of very simple and obvious origin. Take for example chlorosis, which if submitted in its very early and uncomplicated form responds quite promptly and well to iron medication with a few simple and sensible directions as to food and hygiene. Where it has persisted for a few months or years and has, as is the rule, become complicated by secondary anemic conditions, such as for example occur from menorrhagia or from purpura, there we have a very difficult problem laid out for us. I doubt if there is a man here to-night, be he physician or surgeon, who has not more than once taken these apparently simple cases under consideration to go down in defeat and eventually to decide that this "simple chlorosis" with all its irritat-

ing symptoms and its determined persistence is anything but simple in fact.

It has been my fortune to have a great many cases of this character under my observation; in most of them my therapeutic results and failures have been checked up by careful cell counts and hemoglobin determinations, so that I have been brought to a full and impressive realization of the difficulties which one meets in obtaining real results in conditions of this kind. I have therefore been led carefully to study this problem and I have attempted, to the very best of my ability, to solve the why and how, and largely as a result of these investigations I believe that I am now obtaining better though still far from brilliant results in the management of cases of chronic anemia.

The first riddle which I have attempted to solve has been, Why is it that in so very many cases of long standing anemia the removal of the causative factor is not followed by prompt and automatic recovery either with or without treatment? Perhaps I can advantageously illustrate by cases from my own experience. A lady in her late thirties had suffered for upward of ten years from almost constant uterine hemorrhages as the result of fibroids, the removal of which she resisted because it would prevent the possibility of child bearing. As a natural result she suffered from grave secondary anemia with an average hemoglobin of forty to fifty per cent., dyspnea on exertion, frequent catarrhal conditions, and the like. When the possibility of other children had become reduced to a minimum she consented to a hysterectomy which was most successfully performed with a good convalescence notwithstanding her anemia. Work as best I might I could not raise this woman's hemoglobin about fifty or sixty per cent. for nearly two years' time, during which every facility was offered me in the way of travel, rest, exercise, and all the methods of appropriate therapeutics; only recently has she joined the eighty per cent. class and while symptomatically well, there she sticks. In long standing chlorosis I have found it the same; with correct hygiene, correct medication, and every surrounding condition the most favorable possible still the hemoglobinometer reads in the neighborhood of fifty per cent. An uncomplicated case of this nature has been under my care for nearly three years and has but recently shown permanent and substantial gain. In a recent case of very persistent intestinal fermentation with chronic constipation, where since puberty the young woman has suffered from a resulting resistant anemia, very slow, but clearly evident improvement is being made. She came to me with a hemoglobin count of forty-three per cent., marked dyspnea, loss of appetite, emaciation, and the attitude and diagnosis of a late stage of tuberculosis. Fortunate treatment, ably assisted by an extremely intelligent patient, enabled us quickly to relieve the intestinal condition, but it was weeks before the hemoglobin could be brought up to fifty per cent., and then each menstruation, while not excessive, tumbled it again down to forty-three per cent. She is now in the sixty to seventy per cent. class, gaining weight and mental and physical buoyancy. These

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cases are not isolated examples, they are the truthful commonplace and all must realize it.

It is a general rule in physiology and pathology that when the tissues become exposed for a long time to any supernormal or subnormal condition, or to any pathological state, they adapt and readjust themselves, as it were, to this persistent condition, so that a certain degree of tolerance is established. Witness for example the resistance of the body to long standing tuberculous infection, the adaptation of the body, especially of the hematogenic centres, to continuous losses of blood as shown physiologically by the small difference exerted by menstruation on the hemoglobin curve, and even by the relatively slight drop in long standing menorrhagia or from constant losses of blood from intestinal hemorrhage due to hemorrhoids, etc. In short, the tissues become accustomed to get along with but a scant margin in the way of hemoglobin, and that at times with comparative comfort so that they are able to carry on the necessary functions of the body in a very tolerable sort of way. For comparison with this adapted state, cut down rapidly the hemoglobin percentage of any vigorous healthy man of us to fifty per cent. and we suffer from dyspnea, from palpitation, and from exhaustion of so marked a grade that normal, or anything near normal energy output is impossible, yet how frequently we find patients going about and working with the hemoglobin chronically at this approximate level.

On the one hand, if you raise the percentage of the hemoglobin in the acute instance, one, two, or five per cent., little change is experienced; but if you succeed in elevating it in the chronic instance to fifty-one, fifty-two, or fifty-five per cent., the patients feel immensely improved, they are comparatively plethoric. In other words, we find that these chronically anemic patients are able to get along fairly comfortably on less hemoglobin than the acutely anemic are, and that at the same time slight elevations above their mean percentage have an effect altogether out of proportion to the actual gain in hemoglobin or to that shown by acute cases with the same increase.

Nature is no exception to the very general law which influences all of us more or less, little as we may care to acknowledge it, namely, that we are very averse to doing that which we do not have to do. In these long standing cases of anemia the body has accustomed itself to existence with a low blood iron content. It is small wonder, then, that though the cause of this deficiency be eliminated the tissues do not demand of the blood and hemoglobin forming organs a response proportionate to that in the acute anemia, so that unless some extraordinary effort be put forth no proportionately satisfactory blood genesis is called forth. A habit of anemia, the "anemic habit," has been formed, and to displace it some extraordinary effort must be exerted to jog Nature out of her accustomed groove or habit of perhaps months' or years' standing. This is, I believe, the correct explanation of why we find so much difficulty in bringing the blood iron up to the approximate normal in long standing cases of anemia, even though

the primary exciting causes are completely eradicated.

The next question which naturally arises is, Is it necessary or advisable to attempt to bring the blood up to the natural in these patients if they are able to get on with such tolerable comfort at this low level? I believe that the answer to this query is almost axiomatic, the margin of hemic safety is so narrow that any acute hemorrhagic condition which may supervene, as for example the perforation of a peptic ulcer, a traumatism, or obligatory emergency operation may promptly cause death by lowering this narrow line; we are attempting to do too much business with too small a reserve capital. Furthermore, the anemic subject, be he chronic or acute, is particularly liable to all manner of infection, and simple infections which in the normal amount to very little become fatal terminal states in the anemic. Metabolic disorders of all sorts, diabetes, nephritis, and hepatic disturbances are almost to be looked upon as normal terminations for the anemic patient, while the possibilities in the way of work, mental or physical and even of pleasure are immensely diminished for the sufferer from the anemic habit.

But the bone marrow and the other hematogenic centres fail to regenerate the blood, because, in the first place due to long established habit the tissues do not demand a higher percentage, and further because the stimulus of constant losses being gone, the marrow, as it were, lies dormant and fails to regenerate, even at the level which was physiologically necessary when constant losses were occurring, for there is no stimulus to blood regeneration like loss of blood, a fact with which our predecessors in medicine of a couple of generations ago were perhaps more conversant with than we.

Our therapeutic problem then lies in an attempt to stimulate the bone marrow out of its habitual groove of customary cell production, and to induce the genesis of such cells as are capable of taking up blood iron and in providing this material for them. Again in this last respect we also come into antagonism with a tissue habit as a result of which it is doubtless difficult for ferruginous foods or medicines to be so metabolized that the red cells are inclined to take up and use them.

With this theory as a basis, let us now proceed to a discussion of the treatment of these conditions. and while in this paper I have refrained from considering the treatment of progressive pernicious anemia, I do include in it the management of chronic or recurrent chlorosis, as well as all instances of the anemic habit consequent upon secondary anemia. Throughout this discussion it is primarily assumed that the cause of the anemia has been discovered and eliminated, obviously a matter of prime importance.

In my elaboration of the theory of these conditions I have attempted to point out that a very necessary step in our treatment is to create on the part of the body a demand on the hematogenic centres for blood genesis. This is, I believe, from my clinical experience most effectively encompassed by hygienic measures. Where the hemoglobin margin is very narrow, especially after the

septic types of anemia, exercise, massage, bathing, and so on are not permissible, but absolute rest and quiet are obligatory, because of the likelihood of cardiac dilatation or of renal suppression. Such bed patients respond most happily to the open air and sunlight treatment and I have seen case after case go steadily up the hemoglobin scale by these two measures alone, combined naturally with an appropriate diet. Air and sunlight are fully as efficacious in the treatment of anemia as they are in tuberculosis, and I am strongly of the opinion that a good many cases of anemia are thus cured of a supposed incipient tuberculosis by, in this instance a most happy diagnostic error. Sunlight seems to have an almost alchemistic power in cases of grave anemia.

As the patient becomes stronger, or at the outset if the nature of the case permit, passive movements are to be soon succeeded by active movements, massage, and finally by as active physical exercise as is individually consistent. By such measures the circulation and interchange of the body fluids is facilitated, nutrition of the genetic centres is increased with multiplied cell output both qualitatively and quantitatively. This last statement is perhaps pure theory, but certainly patients get well under such measures.

Where cases are ambulatory from the outset, one must carefully go into the question of the effect of labor and exercise. In many cases this is not only beneficial but absolutely necessary, for most of our patients have before them the serious problem of earning a living for themselves or others, and at times this becomes of equal importance with life itself. The conditions surrounding work must then be made as favorable as possible and where practical, change to out of door occupations or to favorably lighted and ventilated rooms should be made.

Hydrotherapy must be briefly mentioned, both the external and the internal variety, for in some cases much may be achieved by the cold shower or spray which sends the blood actively coursing through the vessels more certainly and with less disturbance than from digitalis or under camphor. Where financial or social conditions favor, a visit to a watering place, still water and later surf bathing may be advised to very good advantage, or the domestic tub or spray may be called into use. In most cases water should be freely taken internally and the ferruginous waters are obviously most desirable.

Climatic changes play no unimportant part in the cure of some of these patients. Look at the miraculous change which a short sojourn at the sea side or a sea voyage produces in the anemic children of the tenements. Variation in climatic conditions is often very beneficial and alternation between sea level and the mountains, other conditions not contraindicating, are often desirable. I feel certain that the changes in the body fluids which occur as a result of change and particularly rapid ones in altitude often furnish just the bone marrow stimulant needed.

As regards temperature, I think that this is very largely to be determined by the individual; some of my patients have prospered in the bracing cold

of the Canadian Northwest or on the table lands of Mexico, others have done better in the hotter climates, especially in the dry heat of New Mexico, Arizona, Egypt, and the like. Most, given sunlight, fresh air, appropriate exercise, and diet, have done very well at home, especially if those best of physiological sauces, pleasure and content, were also present. Nearly all necessary measures may, by the generous physician or patient, be at least well simulated when the exigencies of the case demand that the patient is to remain at home and at his customary work. Out of door exercise and sleeping with the simple life, so recently rediscovered, may be practised by the worker as well as the person of leisure, varying only in degree and form.

After attention to general hygiene, I think that nothing goes more to uproot the anemic habit than a carefully studied and individualized diet list, and there are few diseases in which a detailed study in the arrangement of the diet is more richly rewarded than in anemia. Obviously, food is administered in anemia not only because of the iron which it contains, but also because of the general nutrition which is almost always abnormal in anemia and the type of this abnormality varies in result from actual obesity in some cases to great wasting of the tissues in others. Manifestly the anemia of a gout or nephritis demands quite a different diet from that best applied in diabetes or in gastric hyperacidity. Foods to be suitable in anemia must be procurable, more or less acceptable to the patient, easily digested, rich in iron, and not contraindicated by the special disease or complications which may be causative of, or associated with the anemia.

Of the most desirable fluid foods are soups and broths, usually those not thickened by the addition of starch, but which contain rich stock, green vegetables, meat, blood, bone marrow, and the like. In appropriate cases milk foods are to be used, but not particularly because of their special indication in anemia. Ferruginous waters are also to be included under this head. They are very many in number and a natural water rich in iron salts can be found in almost any mountainous locality, or the artificial iron waters may be purchased, mostly at very moderate figures. Of the fish, salmon, trout, halibut, cod, blue fish, and sword fish, with oysters and clams are among the best, but practically none of the fresh fish are interdicted.

Naturally the meats are of crucial importance for, as Voit and V. Hossin have shown, these albuminoid forms of iron seem to be most readily transformed into blood iron. Not infrequently in these days of "health food" fads one sees cases of even quite severe anemia which have apparently resulted from nothing else than the withdrawal of this important food group from the dietary. Beef, mutton, ham, chicken, duck, guinea fowl, goose, and turkey are most desirable. Hamburger steak, roasts, and grilled meats are among the best methods of preparation. Bone marrow used as a spread for toast, stock, or as timbales in soups is probably much more efficient than when given as an extractive and as a medicine. Bacon, when not otherwise contraindicated, is an excellent relish.

Eggs are among the most valuable of all our

medicaments in the anemias. They are most beneficial taken raw, and as many as from six to twelve daily may be taken in this form with but little disturbance of the appetite or digestion. They seem best taken between meals and as a medicine and are not to be considered by the patient as substitutes for other food. Of course, when it is impossible to induce the patient to take them in this most desirable form, they may be given in orange juice, in milk, or cooked as soft boiled, coddled, poached, and so on. It is the yolk of course which is most desirable in these cases, although except in nephritis the albumin is not particularly detrimental.

Nearly all the vegetables may be taken, but the green ones are especially beneficial. Peas and beans head the list in values, corn, asparagus, spinach, carrots, celery, lettuce, and cress follow, all selected more or less with consideration of the patient's digestive capabilities and of the complicating conditions present.

Fatty foods are commonly neither well borne nor beneficial, and such articles as olive oil, butter, cream, fat meats, and the like should be definitely limited, for I believe that they favor fatty infiltration, which often becomes a very serious factor in anemic states when all processes of oxidation are so diminished and fat deposition is therefore favored. In the way of farinaceous foods, whole wheat and brown bread, bran biscuit in constipated cases, oatmeal, corn foods, and so on are the more desirable.

In the way of desserts, the fruits, especially apples, grapes, oranges, strawberries, peaches, pears, and in short most of our native fruits lead in desirability, but such articles as pastries, ice cream, confections, and sweets of this character are to be avoided in favor of the jellies, simple custards, etc.

The question of stimulants is usually largely a matter of personal habit or individual taste. In some patients wine, or the more universally applicable grape juice, sweet cider, beers, especially the dark brands, are desirable, largely depending, however, on the patient's previous customs or habits. Alcohol should, however, never be indiscriminately prescribed in this class of diseases. Some foodstuffs are desirable in spite of the alcohol contained in them, beer and certain wines, particularly, but not because of their alcoholic content. Tea and coffee as well as cocoa and chocolate may, when not contraindicated, be used, but purely for their carminative and stimulant effects, not for any inherent food value.

Throughout the entire course of a case of anemia symptomatic treatment is constantly necessary. We have all seen grave cases of anemia completely cured from the simple administration of hydrochloric acid, from the use of the salicylates in rheumatic conditions and mercury or arsenic in syphilitic cases. The clinician must be continually alert to discover and correct each symptom or complication which arises, and each is to be studied and treated according to its just merits, but always bearing well in mind the dominant factor in these cases of anemia, hemic deficiency. The use of the carminative tonics is to be consid-

ered in this relation and quinine, nux vomica, gentian, and so on, often yield most pleasing surprises. Constipation may demand the frequent use of the laxatives and always in their selection one must consider whether the loss of fluid from the salines is preferable to the irritant effects of such drugs as aloes or elaterin.

This symptomatic treatment is especially important in regard to the gastrointestinal tract, for it must be realized that the iron and albuminous constituents of the blood must be introduced and first metabolized in this tube and by its glands. How very efficient this symptomatic treatment may be is well illustrated even in many instances of pernicious progressive anemia, where the simple administration of hydrochloric acid has produced, by no means rarely, striking improvement.

The bowel must be kept freely open and this is oftentimes by no means a simple matter when highly ferruginous foods and medicines must be so generously given, but proper attention to diet or the administration of such inert materials as agar-agar, bran biscuit, and the like often make it a relatively simple problem. Carthartics are, however, to be avoided when possible, but an occasional calomel purge or the use of the vegetable purgatives may be necessary.

It goes without saying that all local lesions such as genital, rectal, or nasal defects, especially those associated with loss of blood, or which by their irritation keep up a strain on the organism, should be eliminated, and here our specialist may often be of great assistance. It is especially important that all manner of respiratory obstructions be relieved whenever they tend to limit or impede oxygenation.

Although modern investigation is showing us more and more that deficiency in iron is by no means the only or perhaps not even the chief hemic defect in chronic anemia, I think that we may very safely say that iron is to-day quite as much of a specific in the anemias as is mercury or salvarsan in syphilis—not quite so widely advertised, perhaps, although quite as definite in effect, but the greatest problem in the anemic habit is to get absorption, transformation, and use of this iron. I have already intimated that I believe that this is favored by hygienic measures which we have mentioned, and I am further almost persuaded that in these persistent chronic anemias that the food iron is much more promptly taken up when in the form of medicine.

As might be inferred from the fact that I believe that foods act best in this respect, I am not over enthusiastic over the newer organic preparations of iron, but I do thoroughly believe in inorganic iron, especially such preparations as the tincture of the chloride, Bland's mass and Basham's mixture. I have quite thoroughly tried out the hypodermic administration of iron both of the French preparations of Doctor Gros, who, by the way, is an American and not a Frenchman, and those preparations of the citrate now put out by various American houses. I cannot see that better effects are obtained by this route than by administration per os, but when it is introduced hypodermically one can keep closer control of his pa-

tient, which is oftentimes a factor of decided importance. I cannot believe that the iron administered is more certainly absorbed in these cases of chronic anemia, though in some instances patients apparently do better when treated in this way. It has been my experience in these cases of the anemic habit that iron given ever so skillfully, alone and without the other measures which we have and are to suggest, is usually without the happy effect desired.

Recent drug lists are replete with preparations of organic iron. Their very number and the diversity of their character is in itself testimony as to their uncertainty, but one finds cases from time to time in which they act with excellent and rapid effect. The form most applicable in any special case can be determined only by experiment and, as a class, the organic preparations seem to me much less universal in result than the inorganic.

When the iron is combined with mercury, preferably with minute doses of the bichloride, it has been in my experience more certain in its action in this form of anemia, also at times when given with nuxvomica or its alkaloid, but best of all with arsenic.

I confess myself an earnest advocate of the use of arsenic in chronic anemia and especially where the anemic habit has become established. Whether its action is through direct stimulation of the hematogenic centres or not, I cannot pretend to say, but at least I have seen better effects in the anemias of this class when arsenic is vigorously pushed for a time, to be followed by a period of active iron medication, then again by the arsenic, then iron, and so on until cure is effected. The use of the cacodylates have not fulfilled my expectations in this direction when given either hypodermically or by mouth. Manganese given with iron, or alternating with iron, seems to act well in a good many cases, but I do not believe that it should be given in place of iron, nor do I feel that in any case results justify enthusiasm.

CONCLUSION.

I believe that long standing anemia leads to a condition of the blood forming centres characterized by an indisposition to the restitution of the blood to the normal level, even when the primary etiological factors of the anemia are eradicated. This constitutes an anemic habit.

Treatment of these cases is difficult because of this tendency, which must be wholly eliminated or lessened before success can follow.

Successful treatment in most cases demands closely detailed study, the direct application of the hygienic requirements in each individual case, and the direct attempt must be made to stimulate the blood forming centres by the development of a tissue demand.

Drug treatment or Nature alone in these cases of anemic habit is insufficient, but they must be combined for the successful management of the condition.

Treatment must in most instances be prolonged and persistent. Relapses are frequent.

44 WEST NINTH STREET.

DISCOVERY OF PNEUMOCOCCUS IN THE FECES; ROLE OF THE INTESTINE IN THE SYMPTOMATOLOGY AND TREATMENT OF ACUTE LOBAR PNEUMONIA.

By ANTHONY A. RUTZ, A. M., M. D.,
New York.

If, in every case of acute lobar pneumonia, we examine the abdomen as often and as carefully as the lungs and heart, we will be impressed with the constant presence of tympanites in this disease. It may not always be visible, yet palpation will in every case detect increased intraabdominal pressure. In no other disease, except typhoid fever, excluding peritoneal infections and intestinal obstructions, do we find this symptom so marked and constant. From the fact that this symptom is so constantly present in pneumonia and absent in other diseases, we might naturally infer that in pneumonia the intestine plays a special and important rôle. Careful clinical observation and bacteriological examinations of the feces during the last two years have shown this to be the case.

The large majority of cases of acute lobar pneumonia are due to the pneumococcus, either alone or associated with the streptococcus. In a few cases, the pneumobacillus of Friedlander is found, and occasionally other bacteria. If we examine the sputum in these cases we find a large number of pneumococci. These in the sputum, mingled with the saliva or food, find their way through the esophagus and stomach into the intestine, where, finding a suitable medium, they grow and generate their toxins. A large part of the intestine furnishes a culture medium favorable to the pneumococcus; ample moisture, proper temperature, slightly alkaline reaction, together with all the requisite nutritive ingredients. The objection might be advanced that the acid gastric juice would kill all such bacteria. We now no longer attribute to the gastric juice the high bactericidal power it was formerly supposed to possess. The mucus of the sputum and the food surrounds the organisms and protects them against the action of the acid. Moreover, during the presence of food most of the acid exists in combination and is thus rendered inert. It is possible, also, that some bacteria might find their way from the blood into the feces through the intestinal mucosa. Be all this as it may, by careful bacteriological examination I have found the pneumococcus present in the feces of patients suffering from acute lobar pneumonia. At first, on account of the large number and variety of bacteria in the intestine, this might seem a very difficult task. That only ten per cent. of intestinal bacteria grow on ordinary culture media, and that only very few of these are Gram positive simplifies the work considerably.

The method employed for the detection of the pneumococcus was rather simple. First, cultures of normal feces were made to determine whether pneumococci or Gram positive organisms resembling them were present. Examinations of such

cultures were negative in this respect. In the bacteriological examination in the pneumonia cases smears and cultures of the sputum were first made with the usual precautions, in order to ascertain the presence and variety of the pneumococcus. This was not always possible, especially in children who invariably swallow the sputum. For the examination of the feces a specimen was obtained on the second or third day of the disease with all possible precautions. When possible, a particle from the inner part of the solid feces was examined. Liquid broth and peptone cultures in one half of one per cent. salt solution, rendered slightly alkaline to litmus paper with a saturated solution of sodium bicarbonate, were used. These were kept at body temperature for twenty-four hours. Then cover-glass preparations were made and stained, some with water methylene blue, others by Gram's method with gentian violet. These examined microscopically showed Gram positive diplococci corresponding in morphology to some variety of the pneumococcus. On two occasions it was found associated with the streptococcus. In one specimen the pneumobacillus of Friedlander was found. Still further to prove the identity of these organisms, several drops of such cultures were injected subcutaneously into white mice. These injections, in most of the cases, produced the so called sputum septicemia, resulting in the death of the animal, usually within twenty-four hours. Smears and cultures from the blood of these mice showed the presence of typical pneumococci with capsules. This last procedure leaves no doubt as to the identity of these organisms. From these examinations I am convinced that, at least in the majority of cases of acute lobar pneumonia, there are living pneumococci in the feces, generating toxins which directly or indirectly influence the general toxemia of the disease. To this I shall again refer later.

I have before stated that tympanites is a marked and constant symptom in pneumonia. It is interesting to state that in this disease, just as in typhoid fever, meteorism is less marked in young children, although, apart from the reflex pain in the upper part of the abdomen, they have other evidence of intestinal disturbance, such as rectal tenesmus, pain in the lower part of the abdomen, and the expulsion of large amounts of gas from the rectum. This tympanites is not a mere occasional symptom, such as might occur temporarily during the course of any disease, but is as constant as the pleurisy accompanying the pneumonia, appearing at the end of the first or second day, continuing during the active stage of the disease, and disappearing from one to five days after defervescence. This symptom is of more than ordinary significance. No impaired digestion, increased putrefaction, or intestinal elimination of carbon dioxide from the blood will adequately explain such constant and marked tympanites. I believe, and clinical experience seems to support this theory, that this meteorism is mainly due to a paresis of the intestinal wall, produced by the action of the toxins during the process of their excretion by the intestine. To a less extent this symptom is due to the production of gas by the action of the acids generated by the pneumococci in the feces, on the sodium carbonate derived

from the pancreatic secretion. Proof of this latter cause I have seen in several of my cases. The recently evacuated semisolid feces of children were found, upon examination, to be full of bubbles of gas.

There are two methods by which the body protects itself against the toxins of microorganisms: One, by producing within the body substances which destroy or neutralize the toxins, and the other, by eliminating them from the blood by the organs of excretion. The presence of such marked and constant tympanites, and the result of the application of this principle in the treatment of the disease, make it appear highly probable that the intestine is the special organ of excretion in acute lobar pneumonia, just as the skin is in the first few days of scarlet fever and the kidneys are later in the disease. The eruption of scarlet fever, and the albuminuria later in the disease, are simply the result of the irritant action of the toxins on the organs excreting them. This excretory action of the intestinal mucosa is not fully appreciated. It has been definitely established that the intestine, the large intestine in particular, is not merely an organ of secretion and absorption, but that it plays an important rôle as an organ of excretion, eliminating from the body, just as the skin and kidneys, not only the waste products of ordinary body metabolism, but also the poisonous products of microorganisms. Substances thus excreted are mucin albumins, keratin, fatty acid, soaps, and various inorganic salts.

This excretory function, while not a mere physical process, is nevertheless largely governed by the laws of diffusion. Diffusion is a part of excretion. Circumstances which would favor the diffusion of substances from the blood into the intestine, will also favor their excretion. We have two chambers separated by a membrane. On the one side we have the lumen of the capillaries containing a liquid medium in motion and under pressure holding in solution substances for excretion, a condition favorable to diffusion. On the other we have the lumen of the intestine, containing, in the large intestine where this excretory function chiefly takes place, semisolid and solid feces, containing toxins and other proteid substances. Such a medium is not most favorable for the diffusion of substances from the blood into the intestine, because it is not in the liquid state, and for the reason that it already contains substances identical with, or similar to those to be excreted. Even under these unfavorable circumstances, experiments have shown that the intestine does excrete albuminous substances. Artificially, we can greatly aid this natural process by substituting for the feces water, containing one per cent. sodium chloride together with magnesium sulphate. The sodium chloride favors diffusion by its solvent power, while the magnesium sulphate stimulates the intestinal epithelium.

If there are living and active pneumococci in the feces generating toxins, and if the intestine is the special organ of excretion, then treatment based on these principles should materially reduce the toxemia and lower the mortality of the disease.

Clinical experience amply confirms these theories. Of twenty-seven cases of acute lobar pneumonia so

treated, all ended in recovery. Were the mere recovery the only result of treatment, then we might attribute such a favorable result to mere coincidence of favorable circumstances. There was other evidence to show that such treatment actually reduced the toxemia. Whereas a crisis on the third or fourth day is usually rare, in patients treated in this manner it was quite common, occurring in about thirty-three per cent. of the cases. A reduction of 1° to 2° F. usually occurred after twenty-four hours of such treatment and continued to the end of the disease. No antipyretics were used, except an ice cap. There was also produced a marked improvement in the pulse and mental condition under such treatment. Another peculiar effect of the treatment was the liability to a relapse, due either to an extension in the diseased lung, or to a new process in the healthy lung. This never proved very serious. This effect corresponds with the experience of some physicians with the use of antitoxic serums in the treatment of other diseases. These effects of treatment were most marked in the severe and toxic cases. This reduction in the toxemia was especially noticeable in one of my cases, a boy of fifteen years. He seemed at once to be overwhelmed with the toxemia. In twenty-four hours after three rectal injections there was a decided improvement in his condition. His attack began with a chill, pain in the side, temperature 105° F., pulse 156, small and feeble, and with alternating stupor and delirium. After treatment his pulse was reduced to 98 and became of good quality, his temperature fell to 102.6° F., and ranged from 100° to 102.6° F. during the rest of his disease, and his mind became and remained clear. In another patient, a woman of forty-five years, in rapid succession developed a pneumonic process in her left superior lobe, then in her right lower lobe, next an extensive pericarditis and endocarditis, then a polyarthrititis involving nearly all her joints, and finally a thrombosis of her left axillary vein. Notwithstanding all these lesions, she at no time suffered from any marked toxemia. Her temperature ranged between 100° and 101.4° F., except at the very onset of the disease, when it was 103° F. She made a good recovery. As might be expected, this treatment has no direct effect on the respirations, except such temporary improvement as is produced by the reduction of the tympanites. In both of these cases there was marked meteorism and in both pneumococci were present in the feces.

The method employed in the treatment of these cases was as follows: From the very onset of the disease these patients received a soap and enema with glycerin and the addition of turpentine if the tympanites was excessive. The object of this was to remove the feces from the intestine. This was given early in the morning. During the rest of the day they received from one to three rectal injections of one quart of hot one per cent. salt solution, containing one or two ounces of magnesium sulphate. Each was allowed to be retained for one half to one hour, a sufficient time to permit the diffusion of substances from the blood into the intestine. Even after being expelled, the magnesium sulphate would keep the contents of the large in-

testine liquid and produce further evacuations. If the bowels moved too often, the Epsom salt was diminished. If there was danger of general pulmonary edema, the water was much reduced and only small injections of this salt were given. This treatment was continued during the entire disease to the crisis. Beside this patients received an active purge at the onset of the disease. They were encouraged to drink water, and not to swallow the sputum. They also received an antiseptic mouth wash. All the other therapeutic measures ordinarily employed in pneumonia were used in these cases. Emphasis was placed on an adequate diet, not less than two thousand calories daily. The cutaneous excretion was stimulated by daily hot baths. In one respect the general treatment differed, in the use of digitalis early in the disease. This is contrary to the general usage, the objection being, that it leads to cardiac dilatation later in the disease. If it is used in moderate doses and its action is carefully watched, this danger is avoided. The purpose of its use is the raising of the blood pressure which aids the process of excretion. The evil effects of a sudden fall of blood pressure in this disease may be due not so much to its influence on the circulation as to the fact that it inhibits the excretion of the toxins. Moreover, if we do not administer digitalis until its use is indicated, it may then be too late, on account of the slow action of the drug.

The good effects of these rectal injections are: In the first place, the reduction of the general toxemia, by promoting excretion from the intestine and removing the intestinal pneumococci and their toxins. These, by their presence in the intestine, either inhibit the excretion of toxins from the blood, or, if generated in sufficient amount, may become absorbed and increase the general toxemia. This is the chief object of these injections. The second effect of this treatment is the reduction of the tympanites. This meteorism is injurious for two reasons. By increasing the intraintestinal pressure it retards intestinal excretion. By increasing the intraabdominal pressure it increases the resistance in the abdominal vessels and, by pushing up the diaphragm, it interferes with the action of the heart and lungs and predisposes to cardiac syncope. Another good effect of these injections is the elimination from the body of the waste products of body metabolism, which must be produced in an excessive amount in such an active disease as pneumonia.

CONCLUSION.

From these clinical observations and bacteriological examinations, I contend that:

1. There are living and active pneumococci in the feces in acute lobar pneumonia.
2. Tympanites is a constant and important symptom in the disease.
3. The intestine is the special organ of excretion of the toxins.
4. Routine injections from the onset of the disease, together with other accessory measures intended to reduce the toxemia and tympanites, materially influence the course and lower the mortality of the disease.

208 BERGEN STREET, BROOKLYN.

THE USE OF SPINAL FLUID (AUTOTHERAPY) IN THE TREATMENT OF CHRONIC NEUROSYPHILIDES.

By WILLIAM BROWNING, PH. B., M. D.,

AND WILLIAM LINTZ, M. D.,

Brooklyn, N. Y.

(Second Paper.)

In the first article (see this JOURNAL for April 20, 1912) consideration was directed to the principles on which the method is based. We can next take up observations with it as applied in practice.

The marked and relatively early benefit in some, and the failure in other and apparently promising cases, interfere with proper critical judgment. This can only be met by a closer differentiation of conditions. While an invaluable method in suitable cases, if figured as a cureall it will lead to disappointment and jeopardize its claim as an available procedure. Consequently we have sought its scope quite as much as its advantages.

To illustrate various points and some of the experience to date, a few cases of spastic type will be given. No anesthetic is used, unless ethyl chloride locally. For hospital notes in the first two cases we are largely indebted to the interne, Dr. R. M. Martin.

CASE I. J. G., male, thirty-six years old, born in New Jersey. Single. A cutter by trade. Admitted to Kings County Hospital, February 8, 1912, on a stretcher, though able with considerable support or with the aid of two sticks to walk a few steps slowly and very stiffly (extreme spasticity).

Family history. Father living. Mother died at sixty-seven years of nephritis.

Previous history. Patient had been a heavy drinker. Chancere at sixteen years of age. Treated in various hospitals for eighteen months, then discontinued. At the end of five years ulcers appeared on legs, and ulcerations in mouth and throat. Then treated for fifteen months. No other diseases of adult life.

Present trouble. Eight years ago patient noticed some unsteadiness of gait. In six months he lost control of rectum and bladder, and was confined to bed for three months. But slight improvement since that time, though treated for syphilis of the spinal cord. Had had to use two sticks in walking for the past two years. Had to give up work entirely some six months ago.

Present condition. Man of fair intelligence, excellent physique, six feet two inches tall, very muscular, and still well nourished; no atrophy anywhere. General health good.

Pupils react slowly to light direct or consensual. No nystagmus. Slight ptosis of both upper lids. Sensation over arms intact. Tendon reflexes moderately increased, all five present on each side.

Unable to hold urine; but could control rectum if no purge was taken. Systolic pressure 150 mm.

Lower extremities. Reflexes exaggerated. Steady ankle clonus and positive Babinski on each side. No marked loss of sensation; touch and pain may be a trifle dulled, and muscular a little. Gait typically and extremely spastic. Movements slow and dragging. Feet not raised clear in walking. Tendency to catch toes. Swayed a trifle on closing eyes. Legs jumped at night; sometimes stiffened out straight.

Skin over thighs showed numerous brown pigmented areas and scars. About hips and upper outer aspect of thighs many large and small patches of tertiary tubercular syphiloderm, said to be in part recent.

First puncture, February 10th at 4 p. m., patient reclining. Fluid under moderate pressure; a little over two ounces obtained without attempting to draw all; it showed a trace of haziness, but was clear of sediment. This fluid gave a strong Wassermann reaction.

He was up the rest of the afternoon, thus permitting

more fluid of the same quality to drain from the spinal sac into the general system. By next morning he began to feel amiss, and remained in bed four or five days, until his febrile reactions had subsided. His temperature gradually rose to 104.4° F. in twenty-six hours. No chill, focal sign, or sweating. In another twenty-four hours the temperature dropped to 101° F., remained thereabout for four days, and then returned to normal. At the height of the fever he experienced malaise, with pain and stiffness all along the spine, and general discomfort.

While a rise of temperature to 100° or 101° F. after puncture and injection is not unusual, the exceptional point reached in this case may have been in part due to his failure to keep reclining. After puncture, less important after reinjecting, the precaution should be insisted upon that the patient remain a day or two in bed.¹

For the first few days no change in the lower extremities was noticed, but, on getting about again, some objective and subjective improvement in walking was noted. He could even walk with one stick, and ankle clonus changed at times to the transient type.

February 20th. Second tapping. Fluid clear, and under less pressure. A scant ounce and a half withdrawn. No marked reaction after this tapping, just a rise of one degree in temperature twenty-four hours later. This fluid gave a distinctly positive Wassermann reaction, though less so than the first. The second puncture was made before reinjecting any of the first fluid, to get an idea of the rapidity of restocking with antibodies² when uninfluenced by any injection.

February 22d. Injection of six c.c. of the first fluid, subcutaneously into the right upper arm.

The next afternoon he was able to walk moderately, and even without a stick. He went a distance of several blocks around the grounds, somewhat stiffly, though at fair speed.

February 25th. A second injection, ten c. c., of the first fluid into the flank.

The remainder of this fluid was subsequently discarded because of contamination.

February 28th. The fluid from the second tap (of February 20th) reinjected.

After each injection a material gain was seen, to be followed by a slight dropping back, but no real retrogression.

Since this time he had been able to walk up and down stairs freely. Some spasticity still evident (April 8th). Generally used a cane in walking, though he could now walk far better with none than with two on admission. Still used a urinal, but by day he could control the bladder if near a closet.

The extensive syphilitic eruptions over hip and thigh regions, which he brought in with him, began healing after the first injection, and closed up completely after the third. Brown patches marked these areas, but no trace of any eruption. The blood found "practically negative" to Wassermann at this time; leucocytes 14,500, with eighty-three per cent. polymorphonuclears.

April 8th. Third puncture, patient now sitting. A little over two ounces withdrawn from third lumbar space. Some fine turbidity to the fluid. Immediately reinjected sixty-two c.c. intramuscularly into the left buttock. Remained in bed; reaction slight, except that his temperature that night rose to 101° F.

This fluid was moderately positive (after an interval of forty-four days since the last puncture), thus indicating, according to accepted views, that the specific process was not at the time fully ended.

April 12th. Further improvement. No trace of ptosis of either lid (which had partially persisted up to the last injection). Walked freely without stick or aid, though still a trifle stiffly. This and some lack of urinary control was all that remained of his trouble.

Arm jerks now very moderate, and only four on each side. Bowels now regular without laxative, and under control. Partial Babinski yet. Ankle clonus was variable, at times brief, or, after walking, in abeyance.

He left the hospital, without aid or attendant, on April

¹That is, if it is desired to keep this febrile reaction at a minimum. Inasmuch, however, as the man experienced a marked degree of improvement following this and before any reinjection of fluid, such a reaction may have its compensation.

²The term "antibodies" is intended in this paper to include possible immune and immunity producing bodies.

20th. Promptly did so much walking that he had to let up for a couple of days.

On April 26th he came to town alone by trolley and train the twenty miles from his home. Urinary control improved. Now only three slight arm jerks on either side. No jaw jerk. No contractions of extremities at night. Lifts toes well in walking. Both Achilles jerks present. Babinski test normal on left, partial on right.

While the outcome of this case may not yet be fully assured, the progress both as to rapidity and degree is a distinct advance on that afforded by any previous plan, and the duration of improvement is now sufficient to promise permanency.

CASE II. Mrs. L., thirty-eight years old, born in Germany. Admitted February 15, 1912. Diagnosis, spastic spinal paraplegia. Parents living and family history excellent, except as to pulmonary trouble. Married at twenty-two years. Had five children, four still living. No miscarriage. Menstruation regular. Dated present trouble from beginning of last pregnancy (confinement in May, 1908). Patient was able to walk for about a year after that. Had suffered from pain in both thighs, and jumping of lower extremities at night. Pain in left shoulder joint to insertion of deltoid for last two months. Chief complaint was loss of use of legs. Patient was bed ridden, helpless, and so excessively spastic that even in a reclining chair she could only lie straightened out like a log. Could not turn or lift herself. General increase of tendon reflexes. Ankle clonus present both sides, though usually the lower extremities were so firmly extended as to preclude testing. Edema of both feet. Impossible actively or passively to flex the knees at all. Involuntary urination, or again retention. Bowel movements involuntary.

The specific origin of a case of this kind is to be presumed, and was here verified by the strong Wassermann reaction of the spinal fluid later.

As the woman talked but little, and as her statements about herself or on other subjects were contradictory, confused, and unreliable, she was thought to be mentally defective.

First spinal puncture (with her all punctures were done reclining) on February 20th. Less than two drachms of fluid obtained, mixed with blood. This fluid was found strongly positive to Wassermann reaction. Just twenty-six hours later the temperature was 99.6° F., but from her condition otherwise little variations of temperature were common.

February 25th. Reinjected 4.3 c.c. into the left flank. No rise in temperature, or other reaction followed this, nor any after effect. Nor was it to be expected from the small quantity of fluid.

February 28th. Second puncture. About an ounce of fluid obtained. This also proved strongly positive. The temperature rose only to 99° F. a day later.

February 29th. Reinjected 28 c.c. into buttock. Maximum temperature 99.6° F., noted thirty-two hours later. But the pulse, which previously ranged from 80 to 96, rose the next morning to 120, and stayed at about that rate for several days.

March 1st. Fluid negative to Noguchi test.

March 5th (i. e., five days after second injection), the patient now talked freely, clearly, and with normal intelligence. The presumption that she was simple minded was no longer tenable. Now stated that at times she had been unable to talk clearly if at all.

There was now some improvement in the spasticity, so far as for the first time readily to permit testing. Steady clonus at each ankle.

March 15th. Could now sit in a chair all day, the knees and hips flexing and the legs dropping down naturally. Incontinence of urine, no longer retention. Moderate clonus right and left.

March 16th. Third puncture. About an ounce and a half of finely cloudy fluid obtained. Immediate reinjection of 39 c.c. into buttock. From the experience up to this time, and the fact that she had had tolerated the two previous injections so well, it seemed warranted to try reinjection without waiting. This fluid contained relatively less of the antibodies, though still positive.

The temperature kept up a little, often a degree. But from March 25th on, the temperature became more regular; and now for the first time in the hospital her temperature was normal or even a little subnormal.

The pulse went up after this tap and injection, at times to 120, but dropped to about 100 in twelve days and remained there.

Within a couple of days she was able to wag the toes of the right foot.

April 2d. Further improvement. Now able for last two weeks to read freely. Previously "all the words were double like," and she could not clearly comprehend what she read or saw. Now able to control bladder at times, and for the most part the bowel.

April 24th. Now had control of bowels; and for two to three hours, especially at night, the bladder. Could lift the feet a little, and move legs forward and backward, in fact kick actively, and even stand with aid. Left shoulder now comfortable, more mobile (really could use it without pain), and not tender; but was partially ankylosed. Edema of feet gone, even though sitting.

While this patient is not cured, and doubtless had suffered permanent damage of the cord before admission, her condition, previously intolerable to herself and her attendants, has changed to one of relative euphoria. In every respect she has improved, in some signally, and is still progressing. And the prospect of further benefit is clear.

CASE III (illustrative of the negative side). Mr. B., thirty-five years old. Specific infection twelve years before. Has had a variety of treatment in that time—inunctions, injections, Hot Springs, iodide to over an ounce a day, and in February, 1911, a double injection of "606" (the last to no benefit). In December, 1911, the blood was found negative to Wassermann test.

Necrosis of nasal bone in 1905. Convulsions in 1906, with hemiparesis and leaving a dysarthria. Partial recurrence in 1909. Great constipation. General spastic condition. Walked with a stick, slowly and stiffly. Crossed knee jerks. Brief clonus on each side. Jaw jerk. Slow improvement since December on other treatment.

Spinal puncture, March 2, 1912. Scant ounce of almost clear fluid obtained, under slight pressure. Patient sitting, and remained up and about. The fluid proved entirely negative.

Reinjected 27 c.c. of this fluid on March 5th. No reaction or result in any way, barring peristalsis (*vide infra*) and slight exhilaration after he was through with the puncture.

DIAGNOSTIC VALUE.

Partly by the direct information elicited, partly by the necessity for a closer scrutiny of cases the procedure leads to more exact diagnosis.

CASE IV. Man of thirty years, in the progressive stage of a spastic disorder. His fluid was perfectly clear, but gave a faintly positive reaction ("very, very slight—doubtful"). It was thought the quality might be made up for by the large quantity. Reinjected the 70 c.c. after an interval of two days. Although there was some improvement in minor respects, as in peristalsis, the net result as to the main condition after two weeks was nil, if not a slight acceleration.

Further examination and a careful revision of the case brought out evidence that it was one of multiple sclerosis. Moreover, there was no history of syphilis, and specific treatment had proven unavailing.

The last two cases are if anything the more instructive because of the negative result. They show that it is not the puncture, not the withdrawal of fluid even when ample, and not the reinjection, that is responsible for the good obtained, but something else, viz., the different quality of the fluid reinjected. The reason for failure, in at any rate Case III, was clearly the absence of antibodies, or antigens, or both, in the spinal fluid.

Furthermore, as these had much in common with the two previous cases, the fact that neither puncture nor reinjection gave any distinct reaction (either as to temperature or pulse, or subjective response, except the common effects of puncture) indicate that these manipulations are not *per se* the cause of such phenomena.

LIMITATIONS.

Three very material limitations to its use have become apparent:

1. The stock of antibodies in any given case is soon reduced or temporarily exhausted, and furthermore is not very rapidly renewed.

While the fluid itself is soon replaced, a second early tapping (where the first was a full withdrawal) shows regularly a less content of antibodies than the first; and two tapings at an interval of two weeks reduce the proportion to such an extent that a longer wait is then in order before it is profitable to make a third puncture.

2. Some apparently suitable cases fail to show any, or any important content of antibodies in the spinal fluid. In such, no improvement of the main trouble is obtained, nor do they show as much reaction to the procedure. To accomplish anything we must, in common parlance, "catch the chap with the goods on."

As the previous use of salvarsan may be one cause of the absence of antibodies in the fluid, the possibilities of autotherapy should be exhausted before subjecting such patients to that agent.

These two limitations find illustration in the cases cited.

3. The antibodies of the administered material disappear rapidly from the system.

This is a well recognized fact as regards these bodies in the circulation. Its significance here is that the direct beneficent action of such injected material may be expected to develop early, and to then rapidly reach its conclusion. The curative agent then presumably becomes combined, destroyed, or excreted, when the active curative process from that dose may be conceived as finished.

Secondary or indirect benefits might become more evident for some time.

Something closely analogous to, or identical with such a course is just what we observe.

Granting all this, there still remains the question of the stability or permanency of the improvement. While many factors may modify the subsequent course (if no further curative injections are made) the improvement will in the main be permanent unless the underlying specific process continues to produce new injurious material.

HOW SOON DOES IMPROVEMENT BEGIN?

In general, and if a full amount (say twenty-five to fifty c.c.) of fluid fairly rich in antibodies is injected, signs of improvement become evident towards the end of the first week following the injection, often in four to six days; and in some cases the main benefit appears to be completed in about a week after it begins. This we may call the primary gain, but a gradual secondary improvement may go on, for some weeks at least.

Where the circulation is much affected (pulse rate increased; arterial pressure low), the benefits do not fully appear until this has been corrected. And nuxvomica or its alkaloids, strophanthus, possibly sparteine, iron, etc., may be needed. Other adjuvants, as the ordinary specifics, may aid when applying the method in routine practice.

Other factors in the favorable course of such cases are: 1. The mechanical influence of the withdrawal of spinal fluid, on the local circulation and conditions of the cord. This is the more likely where, as in cases one and four, the fluid was in abundance. Sometimes there seems a little benefit therefrom. Yet in test cases (where reinjection is delayed a couple or more days, and where the patient is kept quiet to avoid any autoresorption from the puncture in the arachnoid) any marked or unmistakable improvement does not appear, i. e., not until some days after the subsequent reinjection.

2. The rest of a couple of days in bed. But only in case one was this rest anything unusual to the patient, and he always improves faster after getting up.

3. Suggestion (as mentioned in the first paper). Excluded by the delay in injection, and the failure of puncture to elicit it. Hence these factors do not suffice to explain more than a modicum of the result. Consequently there must be some other and major cause, and the conclusion is warranted that the material in the spinal fluid is the main active agent; practically for the patient which is unimportant.

STIMULATION OF PERISTALSIS.

An important side effect of these injections appears in the improvement of the bowel movements. This has been observed in all classes of cases thus treated, whether of specific character or not, though the degree of intestinal stimulation may vary considerably.

Constipation is known as a common complication of tabes for which there are a number of causes. In spastic spinal cases also it is often fully as troublesome. Spinal puncture itself has no influence on this, but after a reinjection of this kind the obstinately constipated require less of a laxative and get more satisfactory results; while the merely torpid bowel is quite relieved. And the effect is fairly permanent so far. As an example, a tabetic reinjected on March 8th, still has three bowel movements a day instead of the previous one movement.

In a few cases here the action is more vigorous. In these a sudden diarrheal outpouring is experienced some hours to a day after the injection (often the forenoon of the next day). This severe response is not the rule, and not apt to recur or not until another injection. At first it was thought to be merely a casual occurrence, as it was too transient and unwarranted for a crisis,—though one intelligent patient (case three) regarded it as too unusual in his experience to be other than a sequel.

This suggests something of the hormone order, though more uniform in the later benefit conferred than is always the case with available products of that kind.

The advantage of applying this principle more

widely in the treatment of bowel conditions may be commended to the consideration of confrères in that field of work.

Evidently the spinal fluid is a collector of more than one of the rarer circulating elements of the human system, and this function can be figured as another of the by effects of the assumption by man of the upright position.

IMMEDIATE VERSUS DELAYED REINJECTION.

Whether or not to reinject directly after tapping is largely a relative question.

After a *first* puncture it is well to defer any injection until all reaction from the puncture has passed; never less than two days.

But, after a given patient has been found to tolerate the procedure well, it may be a matter of option or to be decided on other grounds.

In cases for study, or where it is desired to differentiate the possible effects of puncture from those due exclusively to the fluid, it is necessary to delay reinjection correspondingly.

Advantages of the immediate course are: The possibly better solution of the antibodies, and especially the lessened chance of contamination or loss of fluid. Consequently the incentive to early action is greatest in hot weather, and perhaps also in threatening cases where it is hoped to forestall the morbid outcome.

Heeding these principles, we have several times made an immediate reinjection, of either part or all the fluid, and with no serious consequences.

Where this is done it is specially desirable to keep the patient quiet until past the reaction period.

THE QUESTION OF ENTIRE OR PARTIAL REINJECTION AT ONE TIME.

Theoretically two factors might guide us here: the proportion of antibodies in the fluid, and the amount of toxins in the patient, if we had any quantitative knowledge of either.

If there were some method of standardization, it could be used to settle all these questions of dose. Until then such approximate rules as those following must guide us.

The more the fluid is divided up, the greater is the risk of contamination.

Neither theoretically, nor from our experience is there any great risk, in tried cases, in injecting the whole amount at once.

Where the amount is small, ten to twenty c. c., it is better to reinject all at one time.

If the fluid is poor in antibodies, it may also be as well to put it all back at a single sitting.

Here likewise, if prompt action is thought to be imperative, it should all be returned at once.

The modern therapeutical way of massing effects favors the use of the entire amount at one time, but it is questionable from our work if any advantage follows the use of large quantities compared to the same amount given in divided doses.

Moreover, the sharp intestinal episodes have all occurred after a total reinjection, though only in a part of the cases. Consequently for the present, where the work is not for special study, the use of not more than twenty to thirty c. c. at one time is to be recommended.

HYPERTROPHIED THYMUS AND STATUS LYMPHATICUS.*

With Report of Cases.

By JULIUS H. TAYLOR, M. D.,

Columbia, S. C.

My intimate acquaintance with the status lymphaticus dates from an experience in July, 1902, that remains indelibly etched upon my memory.

CASE I. In the wards of the New York Orthopedic Hospital was a five and one half year old child with hip joint disease, with whom I had come in contact daily for four months. He was a well nourished boy, and nothing unusual in any way had been noted about him. With a negative family history, he gave a previous history of being breast fed for ten months, and measles, whooping cough, and diphtheria in infancy. A former attack of pneumonia had been followed a few months before admission by a second attack. The parents asserted the hip joint disease to date from a fall at six months of age, and on admission to the hospital the right hip was in spasm, with an abscess in the gluteal region.

At 9:15 a. m., July 10, 1902, the adhesive straps used in the application of a hip splint having excoriated the legs, he was lying on the table, crying from the application of a salicylic ointment by the nurse, when the house staff entered with Dr. R. A. Hibbs, through whose courtesy I report this case. A solution of carbolic acid was ordered, and we passed from the ward, leaving the child screaming, and we obtained no relief from this, morphine, one sixteenth grain, and atropine, one six-hundredth grain, was given hypodermically. Fifteen minutes later he vomited, had a slight convulsion, and lost consciousness, respiration ceasing at this time. The face assumed a very cyanotic hue, and the child was dead. In spite of stimulants and artificial respiration, no signs of life were ever again obtained, and we were left completely at a loss to account for his death.

Autopsy. Dr. David Bovaird, of the New York Foundling Hospital, was asked to do the autopsy, and found the following interesting abnormalities that flooded the situation with light, much to our relief:

1. The thymus was greatly and unusually enlarged and firm, weighing six drachms fifty-six grains, and extended upward above the episternal notch.
2. The glands in the cervical, submaxillary, and bronchial regions were enlarged.
3. The spleen, of adult size, was soft, with follicles very prominent.
4. The stomach and small intestines were engorged, with the lymph follicles and Peyer's patches very prominent. The mesenteric and retroperitoneal glands were all markedly enlarged.
5. The muscle walls of the right ventricle of the heart were thin and flabby.

Cause of death: Violent excitement in status lymphaticus.

In the face of much earnest work from various viewpoints since Friedleben's (1) wonderful monograph of 1858, to which he tells us were devoted eight years of his life, there still remains much that is problematical and contradictory regarding the physiology, pathology, and even the anatomy of the thymus gland. Particularly are we interested in the pathology of the gland as manifested in its enlargement both alone and associated with the syndrome known as the status lymphaticus.

Bovaird and Nicoll (2) appear to have shown that, under ordinary conditions, there is no growth of the thymus gland after birth, but that under special conditions growth may take place, and even an enormous amount of hypertrophy. It is well known

*Read before the meeting of the Tristate Medical Association of Virginia, North and South Carolina, held at Columbia, S. C., February 21 and 22, 1912.

that often this hyperplasia is met with in congenital syphilis and rachitis, tonsillar hyperplasia, adenoids, congenital struma, myxedema, cretinism, the acute infections, etc., and regularly in Addison's disease, and exophthalmic goitre. Furthermore, that the primary cause may be sought for in any condition accompanied by a lymphoid or myeloid exhaustion. Probably, therefore, it partakes of the nature of a compensatory process.

Between the two conditions of enlarged thymus and status lymphaticus there is often an apparent relationship that has as yet not been satisfactorily worked out. Whether it is a coincident lesion, stands in a causative relationship to, or is merely the effect of status lymphaticus, is not definitely known. However, in many cases of pronounced status, the thymus is found to be only slightly or not at all enlarged, while on the other hand, not a few of the cases of thymic death show an enlarged gland with no other characteristic lymphatic changes.

Here I may add that a particularly interesting phase of the question relates to the exact cause of this thymic death, for which there have been advanced three theories:

1. A direct mechanical pressure of the enlarged thymus on the trachea, producing a stenosis, together with secondary laryngeal spasm.

2. That death is due to the effect of the pressure of the enlarged thymus on the bloodvessels of the mediastinal space, and indirectly the heart.

3. That death is attributable to a true toxemia resulting from excessive internal secretion (Svehla's hyperthymization).

Supporting the tracheal pressure theory are presented the anatomy of the parts and numerous clinical and autopsy findings. Anatomically, the superior aperture of the thorax is a critical space, containing within the two cm. separating the spine from the sternum, the trachea, esophagus, great vessels, and the thymus, the latter applied directly to the anterior surface of the trachea. Even a slight change in the size of the thymus would be at the expense of the soft parts in this space and, moreover, the compression of the trachea has been demonstrated through relief afforded by intubation with a long tube, and removal of portions of the gland, by the tracheoscope, and, finally, by the demonstration at autopsy of flattening, atrophy, and anemia of the portion of the trachea lying in the superior strait.

However death may be caused, the one fact stands out prominently that we look to the thymus as the immediate cause, either through a temporary enlargement, or a permanent hypertrophy.

To the genius of Paltauf (3) are we due the first description of status lymphaticus as a pathological entity, and to his classical description in 1889 nothing has been added of importance.

SYMPTOMS.

The typical case of status lymphaticus shows a pale pasty or muddy complexion with usually abundant body fat. Thickening of the skin with edema or eczema may also be present. In older patients, the blood picture of chlorosis is constant. The salient feature of the condition is the extreme susceptibility of these patients to sudden death from

apparently insignificant trauma, or without assignable cause. Many of the cases of death under an anesthetic are due to this condition.

Pathologically, a perfect picture is found, which places the condition beyond question. The lymphoid groups in various parts of the body are enlarged, adenoids are present, and the tonsils are prominent. The follicles at the base of the tongue and the intestinal follicles are hypertrophied. There is enlargement of the spleen and its follicles. The thymus may or may not be abnormally large, but in older patients it is found present when normally it should have atrophied. Furthermore, in the arterial system are found characteristic changes in that the walls of the aorta and other arteries show a narrowing and thinning process. Together with this, the heart muscle may show degenerative changes with signs of acute dilatation.

The symptoms manifested during life from the enlarged thymus are, according to severity, known as thymic stridor, or thymic asthma, constituting merely a difference in degree, both resulting from the pressure of the enlarged gland on the trachea. The stridor develops soon after birth, or is congenital, and appears at both inspiration and expiration, though usually loudest at inspiration. An attack of bronchitis, or some one of the acute infections, may appear to be the exciting cause of the asthma, or the stridor. Warthin (4) states that the stridor is not accompanied by any modification of the voice, nor is there hoarseness in uncomplicated cases. Though usually weaker, the stridor persists during sleep, and is not affected by position. It may persist unchanged, or become progressively more severe, developing finally into distinct attacks of an asthmatic nature. On the other hand, the thymic asthma may suddenly appear without a previous stridor. While death is not necessarily the termination, yet the cases usually end fatally. Temporary or even permanent recovery may take place. In the severe cases, dysphagia is a prominent symptom.

Concerning the thymus gland itself, an examination may show evidences of enlargement by bulging of the sternum over this area, or the gland may be seen or palpated above the sternum. Percussion will often elicit an enlarged area of dullness, and an extension of this to more than one cm. beyond the sternal lines may be taken as indicative of a definite enlargement.

In the x ray, we find our most accurate means of diagnosis, but it must be remembered in this connection that there may be a thickening of the gland only, with no changes in either the length or the breadth. In reality it is the increase in the thickness rather than in the other dimensions that is most likely to produce pressure symptoms on the trachea.

As illustrating a case of enlarged thymus without status lymphaticus, but apparently complicating a case of cretinism, the following is presented:

CASE II. The child, a girl, was delivered September 4, 1911, normally but, according to calculations, three weeks over time. Though there were no symptoms pointing to a toxemia of pregnancy, yet, for a month before delivery, the mother at intervals showed considerable albumin in the urine, upon one occasion as much as fifteen per cent., which necessitated constant watching and a milk diet. Only the sudden clearing up of the urine prevented on two oc-

casions the forcible termination of pregnancy. In the family history of the child, there was nothing whatever suggestive. The parents were healthy, and had a girl of four and a boy of two years, both unusually well developed and strong.

With the exception of not crying at birth, the child was apparently normal in every way, but the mother soon noticed that progress was not being made, and that the child behaved differently from the two former babies. It never seemed to kick or cry, and for the first two months slept constantly, except when awakened for food. She soon noticed that the skin was beginning to lose its pink color, and to take on a yellowish cast and, at the end of the second month, it was decidedly muddy. Beginning with nine and one half pounds weight at birth on September 4th, the fluctuations up to the present have been as follows: October 4th, 9.5 pounds; November 15th, 12.5 pounds; December 10th, 12.5 pounds; January 1st, 11.5 pounds; January 15th, 12.5 pounds; January 30th, 11.5 pounds; February 14th, 11.75 pounds; February 20th, 13 pounds.

Beginning with breast feedings, the mother, on November 1st, felt that the child was not progressing, and reinforced the breast by malted milk three times a day. Progress still being unsatisfactory, modified cow's milk was resorted to on December 10th, and the bottle used entirely, as the child seemed unable to suckle the breast. Cow's milk has been continued up to the present.

Somewhere about the first of October the nose began to discharge, and the child to snuffle and cough. These symptoms were ascribed by the parent to the "catching of a cold," but about October 15th attacks of dyspnea with cough developed, coming on usually at night and necessitating the mother's getting up with the child frequently. These attacks were assumed to be croup by the parents, and nothing said about them.

On the night of November 4th, the respiratory symptoms became so marked and distressing that the mother became alarmed and reported the matter to me, which was my first introduction to the case.

On entering the room, the wheezing was very audible, and, as the child lay in its mother's arms, its distress was very evident. On auscultation of the chest, there was much rattling, as though of bronchitis, and a hoarse guttural cough with a wheezing cry was frequent. The temperature was normal, and I assumed the case to be one of bronchitis. Though I did not see the case again until December 28th, I am told that the excessive wheezing, cough, and dyspnea continued for about a week, and then gradually diminished.

Following shortly this attack, a marked difficulty in swallowing appeared, and the nursing of the breast by the child became impossible. From the bottle, it would take an hour for three ounces of milk to be swallowed, and much of this would trickle from the angles of the mouth.

Again, on December 28th, I saw the child, and then noted the following conditions: The skin was pale with a muddy hue. Cold extremities. The mouth was held continuously open while the tongue was decidedly thickened and filled completely, apparently, the mouth. The mucous membranes were pale, and the flesh was decidedly soft and flabby. The abdomen was prominent, and the neck very short and thick. The stridor was constant and severe on both inspiration and expiration, but there was noted no difference of intensity in the two. The child gave frequently a guttural cough, and engorgement of the superficial veins of the neck was decidedly pronounced when crying. At this time the voice was hoarse. Changes in the position of the child produced no change in the severity of the stridor, which persisted also during sleep. An examination of the lungs at that time revealed nothing that could account for the symptoms presented, and percussion over the thymus gland, I thought, gave a narrow area of dullness to the right of the manubrium, though later I have not been able to satisfy myself of its presence. In attempting to make an examination for adenoids, respiration ceased for a few moments, and the child became excessively cyanotic, especially about the mouth; in fact, I thought the child was dying. In a few moments, the respiration began again, the cyanosis gradually cleared up, and the child returned to the former condition. No lymphatic enlargement was found elsewhere about the body, the spleen was not palpable, and I assumed the condition to be one of enlarged thymus.

On January 5th, an examination of the blood revealed

14,300 leucocytes, and a differential count gave the following percentages: Large mononuclears 2.2 per cent., small mononuclears 52.6 per cent., polynuclear neutrophils 43 per cent., eosinophiles 1.5 per cent., and mast cells 0.7 per cent.

Later I had Dr. Robert Moore, of Columbia, see the child, but he was unable to examine satisfactorily for adenoids and tonsils, or any laryngeal conditions. It has only been on February 20th that he has been able to report to me the absence of adenoids and hypertrophied tonsils, and a digital examination of the glottis with negative findings. He was unable to use a laryngoscope. Dr. Robert W. Gibbs has, on several occasions, attempted to give me a satisfactory radiograph of the chest, but it was impossible to keep the child still long enough to get a clearly defined picture.

Having read articles on the x ray therapy of enlarged thymus by Friedlander (5, 6) and Lange (7) of Cincinnati, in which they reported remarkable results in cases of a similar condition, I referred the case to Doctor Gibbs for treatment on January 6th. From this date, up to February 12th, three exposures a week were given, and the results, together with that from other therapy, which I shall mention later, have been truly striking.

Immediately after seeing the child on December 28th, I began, at a venture, on one quarter grain doses of gray powder, three times a day, although the father denied any specific infection. Within ten days after the initial x ray exposure, the stridor began to diminish, and the child to become decidedly more comfortable.

The attacks of dyspnea steadily became more and more infrequent and progressively less severe until at the present time neither the stridor is present nor has there been an asthmatic attack for several days. The tongue, however, remained enlarged, and the dysphagia marked. This latter symptom was apparently due to a direct obstruction, for the child would seem to swallow and the milk then come back into the mouth and trickle from the lips.

On January 28th, suspecting the presence of cretinism, as indicated by the enlarged tongue, voice changes, and general history of the patient, I began the use of two and a half grain doses of thyroid extract, three times a day, and stopped the use of the gray powder.

Up to this time, while the respiratory symptoms had improved markedly, yet the child had never played nor shown any disposition to laugh or raise itself up. Within three days after the thyroid was begun a decided change began to take place, and a disposition to laugh and play was shown, while the skin began to take on a more healthy hue. Most striking of all, the tongue began to diminish in size and the swallowing of food to become more easy of accomplishment. At the present date the tongue has returned almost to the normal size, and where it took one hour for three ounces of milk to be swallowed, now six ounces are easily taken in fifteen minutes.

In analyzing this case I believe that we are justified in making a diagnosis of enlarged thymus complicating cretinism. The condition of the voice, tongue, and skin, and the truly remarkable response to thyroid therapy seem to stamp it in the first instance as cretinism, while the stridor, attacks of dyspnea with cyanosis, engorged superficial veins of the neck while crying, which Denecke (8) has reported as the only symptom of an enlarged thymus in a case of his, together with the results of the x ray exposures, seem to justify our assumption of the enlarged thymus gland.

July 1, 1912. There have been no further asthmatic attacks nor has there been a suggestion of a stridor.

Under the influence of the thyroid extract the child gained rapidly in weight and by April 1st was a splendid looking infant with a clear pink skin.

During May and June there have been bowel disturbances with frequent movements attributable to the season.

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GARBAGE DISPOSAL.*

By T. M. KOON, M.D.,

Grand Rapids, Mich.

No other problem so far encountered, has so troubled city officials and boards of health, as the collection and disposal of garbage. By garbage is meant kitchen refuse and table waste, or discarded material from the preparation and use of human food.

In Grand Rapids, a city ordinance describes garbage as "every refuse accumulation of animal, fruit, or vegetable matter, liquid or otherwise, that attends the preparation, use, cooking, dealing in, or storing of meat, fish, fowl, fruit or vegetables."

In communities where there is no proper collection of garbage, the thoughtless citizen throws it in the street, leaves it in his back yard, deposits it on vacant lots, and in low places, there to decompose and exert its deleterious effect in the health of the people, and act as an eyesore to those who are interested in the city beautiful. Protests are made to councilmen and boards of health; neighborhoods become aroused, families go to war, and injunction proceedings are started. The newspapers take up the question, and the city beautiful artist starts out with his camera so that the reading public may have presented a picture of the worst places. Usually the hot summer months force this question to the attention of the officials, and a commission is appointed to solve the problem. As the cold weather comes on, and the soft white snow spreads its mantle over the ground, the situation is not so acute, and the commission quietly seeks for information, while the people agitate the winter problems, like medical inspection of schools, prevention of contagious diseases, and the high cost of living. But with the coming of summer the garbage question becomes a live issue. The commission has failed to find a satisfactory plan because most other places have their garbage troubles also. Fortunate indeed is the community which has this question satisfactorily settled.

The entire time of this paper might be devoted to a résumé of the principles, systems, and apparatus developed by engineers for the scientific solution of this problem. But the result of their labors would not be of much practical value to most Michigan cities, for the principle of effective utilization has not been worked out satisfactorily for the larger cities, to say nothing of the smaller. Therefore, this paper will be confined to a brief report on what is being done in Grand Rapids.

Necessarily, the first move toward solving the garbage question, must be its proper collection. Prior to 1907, our city gave a license to a private company for the collection of garbage, allowing the company to charge the householder twenty-five cents a month, the householder furnishing his own can. During the summer months about 6,000 households took the service, but as colder weather came on, the number dwindled to about 2,000. During the summer months, less than one third of the households were receiving this service. Consequently, the city had its garbage problem, and we had an illustration of the fact, that many people would

rather steal out to a vacant lot at night and dispose of their garbage, than pay twenty-five cents a month to have it hauled away in a sanitary manner. So the city, in 1907, decided to purchase its own equipment and offer the householders free collection. During the past five years, the city has been operating the only system which will insure a thorough general collection. The householder furnishes the can which must be water tight with a closely fitting cover. Twice a week the city wagons call at the residences and haul away the garbage. In the down town district, at the hotels and restaurants, a daily collection is given. The city operates twelve wagons, each drawn by two horses, and operated by two men. The tanks are metal, water tight, and have closely fitting covers. During the past year 15,120 households have received free service at an expense to the city of \$26,320.00, or \$1.63 for each household a year. Under private collection, the cost was three dollars a year for each household, which was considerably cheaper than in any city I know of in Michigan which has private collection. A number of cities in Michigan now under private collection are paying as high as six dollars a family a year. So the city, owning and operating this utility, has given a cheaper, more sanitary, and more satisfactory service. Practically all the households in the city are now receiving the service. It is insisted that ashes and rubbish shall be kept out of the cans, the authorities feeling that the tax payers should not be taxed to haul away ashes and trash, any more than to rake up a man's lawn and haul away the leaves. Those having such service rendered, are charged for it. At the beginning there was some trouble educating people as to what constituted garbage, but now they understand the nature of garbage, and that nothing but garbage shall be placed in the cans. For hauling away ashes, rubbish, and dead animals, the city makes a charge. The city also does scavenger work. A good profit is made out of this class of work.

The problem of collecting garbage, therefore, is not very hard to solve. There is no question that the free collection by the city is the cheapest and most satisfactory. Reports from Michigan cities reveal the fact that there are only a few where any attempt is made toward a general collection of garbage. There is not a city in Michigan which could not afford to purchase the necessary equipment and establish free collection.

After a city has collected the garbage it becomes a difficult problem satisfactorily to dispose of it. Here is where inventors and promoters take advantage of the situation and propose to burn, or utilize the material at a huge profit. Corporations are formed, stock is sold, and plants are built for final disposal. The country is strewn with the wrecks of such plants, where the only ones who have profited have been the promoters. In some cases the city has gone into the reduction business, but ordinarily it has been an expensive undertaking. Even the simple plan of incinerating the garbage is expensive. Analysis of American city garbage shows from seventy to eighty per cent. of moisture, so that the cost for fuel is enormous. Even where the garbage is mixed with other city waste, it takes much additional fuel to burn it.

*Read at the State Health Officer's Conference, Ann Arbor, Mich.

Can a city be saved the enormous expense of burning its garbage? Is something being destroyed which has value and should be used? In Grand Rapids the garbage is taken off the hands of the city, free, thereby saving at least \$20,000 a year for burning. It is also put to use which gives employment to twenty men, makes a good sum of money yearly, and helps lessen the scarcity of human food.

After making a thorough investigation of the different methods of disposal, it was found that if the city bought an incinerating plant or reduction plant, the primary cost would be large, and the running expenses would be enormous.

Finally, one of our citizens came forward with a proposition to take the garbage off the city's hands, free. The garbage is collected by the city and delivered on tank cars where the expense to the city ends. The contractor, Alvah W. Brown, then ships the garbage to his farm about three miles out of the city, where it is fed to hogs. No doubt engineers will say that this is a primitive method of garbage disposal, but the fact remains that it is effective and can be carried on without creating a nuisance. It also serves to utilize in a profitable way that which is ordinarily destroyed at a great expense.

This piggery is situated three miles out of the city along the Père Marquette Railway. The first thought of such a place where the garbage from a city is fed to hogs does not appeal to the esthetic. But when you see a hundred acre farm, with sandy soil, well drained, where several thousand swine are housed, you become interested. Probably the largest piggery in the country is being operated at this place. As you ride by on the train and see the forty buildings and the thousands of hogs in the pens and on the ranges your interest is awakened. As you approach this farm the first building is a comfortable farm house where the superintendent lives. Nearby is the horse barn. Farther on is the office building. Then comes the boiler room, thirty-four by thirty-six feet, which adjoins the kitchen, sixty-four by forty feet in size. This is probably one of the largest kitchens in the country. There are three cooking pans in this kitchen twenty-four feet long, six feet wide, and three feet deep, and three cooking pans thirty feet long, six feet wide, and four feet deep. This kitchen is devoted to cooking garbage and meal for feeding the hogs. The garbage from the entire city is not sufficient to feed the 7,000 to 9,000 hogs kept here, so \$1,000 worth of corn is fed each week. The next building is the restaurant where the twenty employees are fed. There are three farrowing houses, each 336 feet long, by thirty feet wide. Here is where the pigs are born. These buildings have cement floors and troughs, water throughout, and are steam heated so that little pigs can be brought into the world any month of the year. These houses shelter 1,200 brood sows, each having a separate stall. Forty sows bring forth a litter of pigs each week, over 10,000 being born each year. There is another building, 234 feet long by fifty-six feet wide. Here are over 100 breeding pens with a yard for each. There are two buildings 100 feet long by twenty feet wide, with cement floors and troughs. These buildings are called the restaurants. Here the hogs

are fed cooked corn meal while being fattened for market. A small railroad runs throughout the grounds and buildings, to carry the garbage and corn meal to the swine. The granary, numerous yards, and ranges, and the reservoirs for storing water to supply the buildings, complete the piggery. Everything is well kept and orderly.

Here all the garbage from the city of Grand Rapids is disposed of. From this place 200 hogs are shipped to market each week. Over 10,000 fattened hogs are turned out each year. The value of this output is about \$135,000 a year.

It has been only a few years that so many hogs could be kept safely, on account of the liability of the herd becoming infected with cholera and destroyed. Therefore this method of garbage disposal was very hazardous as a money making undertaking. Now that it is possible to immunize against hog cholera, this danger is obviated. All of the pigs at this place are immunized while nursing, so there is no danger of the herd being destroyed by hog cholera.

In addition to the large number of hogs produced for the market, fertilizer is now being made out of the cleanings from pens and the bones which are in the garbage. About 2,400 tons of fertilizer are produced each year, which has a value of about \$36,000.

Therefore, the value of the output from the garbage of the city of Grand Rapids is about \$170,000 a year. If this kind of a plant can be run at a good profit without creating a nuisance, why is it not better for a city to dispose of its garbage in this way, than to invest in one of the expensive plants which is quite apt to prove a white elephant on the hands of the municipality. There is no doubt that as cities begin to understand the possibilities of this method of disposal, fewer of them will be investing in the expensive, incinerating and reduction plants.

Most of the Michigan cities make no attempt at garbage collection; the reason for this is generally the expense of disposal. To these cities Grand Rapids invites inspection of its piggery.

This city is not alone in disposing of garbage by feeding it to hogs. Kansas City, Omaha, Los Angeles, Colorado Springs, Worcester, Providence, Fall River, Springfield, Lowell, Arlington, and Denver, use this method. Part of the garbage of New York and Boston is also fed to hogs.

In addition to the garbage, it is necessary to have some way to dispose of rubbish and dead animals. The city operates an Angle crematory, where all of the combustible waste and dead animals are burned. Last year the expense of operating this was \$2,568.61, of which amount \$2,461.66 was paid out for labor. The cost for fuel, repairs, etc., was \$106.95.

Therefore, it seems that the city of Grand Rapids is disposing of its garbage and waste in an economical and satisfactory way. The cost of collection is \$1.63 each family a year. The garbage is taken off the hands of the city free, thereby saving at least \$20,000 for burning. The output of the piggery is \$170,000, and employment is given to twenty men at this institution. The remaining waste of the city is disposed of for \$22,568.61.

I will conclude by saying that the garbage of this city is disposed of cheaply, satisfactorily, and in a sanitary manner.

SYPHILITIC FACIAL PARALYSIS.

BY CHARLES O. FILES, M. D.,
Portland, Me.

On Thursday, November 24, 1910, a gentleman, sixty-eight years of age, came to my office with facial paralysis of the left side. The paralysis was complete and was undoubtedly of peripheral origin. He told me that on the previous Sunday morning he had noticed an ulcer in the roof of his mouth and in consequence he had stopped smoking. He was in the habit of having a cigar in his mouth nearly all day, and in the evening smoked a pipe. This Thursday morning, when he came to breakfast, his face felt strangely and he found he could not masticate his food properly or drink his coffee. In fact the paralysis became complete while he was at the breakfast table. The ulcer was in the soft palate, to the left of the median line, and about midway between the front teeth and the uvula. Its appearance suggested to me either epithelial cancer or syphilis. A question brought the unexpected answer that forty-five years ago, while living in a foreign country, he contracted syphilis and was treated for it by an experienced physician for the usual time. Since then there had never been anything to suggest that he had ever had the disease. He had married shortly after his return to this country, and had children and grandchildren. There had been no trace of hereditary taint in children or grandchildren.

It was possible there had been a mistake in the diagnosis of syphilis forty-five years ago, or that there had been a second infection from a cigar, and that this was a primary sore. These suppositions were negated by the iodide of potassium test. The dose was rapidly increased until, for a few days, he was taking one hundred grains, four times a day. Electrical fulguration was used while he was taking the iodide, and the ulcer disappeared in about three weeks.

The ulcer was undoubtedly the proximate cause of the paralysis. The seat of the lesion was probably just within or in the immediate vicinity of the stylomastoid foramen. The irritability of the nerve was practically lost within two weeks and was slowly recovered after many weeks. The treatment consisted of the negative constant current, about five milliamperes, ten minutes daily, at first, and later of the combined constant and interrupted current for fifteen or twenty minutes. Mechanical vibration massage and steaming the affected muscles at bedtime were employed at different times.

At the end of one year there was almost complete restoration of muscular power, except at the angle of the mouth. He cannot whistle, or spit naturally. The proper treatment for the delayed syphilitic condition has been difficult to determine. There is a wide difference of opinion among syphilographers as to whether the iodide alone, or combined with mercury, is best in these cases. "Mercury cures, the iodides relieve syphilis," is a statement that is

probably nearer the truth than we should have admitted a few years ago. However that may be, it is certain that the ulcer healed under the administration of the large doses of the iodide of potassium in about three weeks. When the dose of four hundred grains per diem was reached, the stomach began to rebel and the amount was reduced to twenty-five grains, four times a day, which was well borne. This was kept up about one month, and then was changed to five grains of the potassium iodide and the twentieth of a grain of the red iodide of mercury.

There have been a few, not more than a half dozen at any one time, syphilides that might be classed as syphilitic pityriasis. These seem to be very little affected by any constitutional or local treatment. They are now, however, the only manifestation of specific disease. The pathology of this case is very interesting. The ulcer in the roof of the mouth must have caused the neuritis which resulted in the facial paralysis. Yet this neuritis was practically without pain, if there can be a neuritis without pain. The loss of electrical irritability, and the long continuance of the paralysis indicate a serious and severe lesion. If the ulcer did not cause a neuritis, what was the connection between it and the facial paralysis?

195 HIGH STREET.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXXIII.—Under what circumstances do you find it advisable to prescribe the continuous use of alcohol? (Closed June 15th.)

CXXXIV.—How do you treat streptococcal sore throat, in view of the possible sequelae? (Closed July 15th.)

CXXXV.—How do you treat gonorrheal "rheumatism"? (Answers due not later than August 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to Question CXXII was awarded to Dr. Lionel C. Charbonneau, of Brooklyn, New York, whose article appeared on page 25.

PRIZE QUESTION CXXII.

A FAMILY MEDICINE CABINET.

(Concluded from page 78.)

Dr. A. S. McCormick, of Akron, Ohio, tabulates the requirements as follows:

Location.—The cabinet should occupy a handy, useful, well lighted, easily accessible position.

The Cabinet.—There should be three shelves.

each thirty to thirty-six inches wide, six to nine inches in depth and a space of twelve inches between any two shelves. Beneath the lowest shelf, which forms at the same time the floor of the cabinet and roof of the drawer, should be a drawer six inches deep. Below this is a partition and below that a cupboard three feet high. Allowing three or four inches for partitions these measurements place the height of the shelves from the floor at four, five, and six feet, respectively. The cupboard should have two wooden doors, the cabinet above two of glass, all of them to be kept locked. These dimensions permit uniform, neat, convenient arrangement of equipment.

Equipment.—Upon the front of the upper two shelves should be distinctly and neatly labeled the nature of the equipment upon them. The top shelf should be marked "*For Internal Use.*" Every bottle must be distinctly, neatly, uniformly labeled with, where required, directions. All liquids should be in glass stoppered bottles. From left to right should be: Ammonia, aromatic spirit. Anodyne, infant, fifty tablets, the composition to be chosen by the family physician. Cascara sagrada, dose one or two teaspoonfuls at night as required. Castor oil, dose one to four teaspoonfuls. Corrective, infant, fifty tablets, chosen by family physician. Digestive aromatic, twenty-five tablets; dose one after eating, as required. Mustard, emetic; teaspoonful to cup of water. Quinine sulphate, twenty-five two grain tablets; for fever, cold, malaria. Saline laxative, at the choice of the family physician. Whiskey, the best obtainable.

Upon the middle shelf should be: "*For External Use. With Care.*" Alcohol. Antiseptic alkaline, nose and throat, twenty-five tablets; one or two to glass of water. Mercury bichloride, twenty-five seven grain tablets; one to pint of water. Boric acid powder, for dry or wet dressings. Carbolic acid. Carron oil, for burns. Collodion. Boric acid, for eye wash, etc. The following gargle:

R	Glycerini acidi carbolic.	℥i;
	Acidi tannici,	℥xlvi;
	Tincturæ capsici,	℥xx;
	Infusi rosæ,	ad℥iv.

M. Dilute with water.

Hydrogen peroxide, cold cream for chapped hands, etc., and this useful liniment:

R	Chloroformi,	℥ii;
	Camphoræ,	℥ii;
	Tincturæ aconiti,	℥ii;
	Olei mentholi piperitæ,	℥xx;
	Alcoholis,	℥ii.

M.

Methyl guaiacol ointment, for pain.

Upon the *lowest shelf* should be: Forceps, small. Scissors for bandaging. Thermometers, clinical and house. Pipettes, two. Green soap, one jar. A small tumbler. A graduate. Safety pins, two inch and one and a half inch, five dozen of each. An icebag. A mouth gag.

In the drawer should be: Bandages, three three inch, six two inch, three one inch. Absorbent cotton, one pound. Sticking plaster. Sterile gauze. Oiled paper, for covering wet dressings. Pus basins, two nine inch. Towels, one dozen sterile, to be kept wrapped in another towel, and six washrags.

In the cupboard, hanging neatly upon the wall, should be: A hot water bag and a douche bag, which may be separate or a combination. A bed pan, preferably of white enamel; and a wash basin, of the same composition.

A hypodermic syringe and tablets and heroine 1/12 grain tablets would be useful, but are too dangerous to be intrusted to the laity. They are, therefore, not included.

No bottle must be permitted to remain empty or any article to be missing. The equipment and arrangement should be inspected and approved by the physician and the uses of each part explained to the adult members of the family. This instruction can profitably be repeated twice a year or more. The instruction should include the necessity for strict prohibition and prevention from any handling of the equipment on the part of any one unacquainted with its uses, especially children.

"A place for everything and everything in its place."

Dr. Neal D. Graham, of Washington, D. C., remarks:

The family medicine cabinet should be to the sick what the first aid packet is to the soldier, an emergency supply, ready at hand, to be used according to the directions of a physician. These directions having been issued previously to meet minor contingencies, or, as is more often the case in these days of universal telephones, by direct message to cover the time until the arrival of the physician. It should contain: Purgatives, castor oil, calomel, and a saline laxative.

Antiseptics, tincture of iodine, oil of turpentine, alcohol, and a mild antiseptic, also hydrogen peroxide.

Sedative, paregoric.

Stimulants, whiskey or brandy, and aromatic spirit of ammonia.

Miscellaneous, quinine, in powder with empty capsules of various sizes, sweet spirit of nitre, essence of Jamaica ginger, sodium bicarbonate, mustard, table salt, mutton tallow, petrolatum, boric acid, alum, witch hazel, lime water, olive oil, absorbent cotton, package of sterile gauze, gauze bandages, ice bag, hot water bag, douche bag, rectal tube, adhesive plaster, alcohol stove, or other heating arrangement efficient to boil quickly at least one quart of water.

These articles should be kept in a spot definitely selected for the purpose, a locked drawer, trunk, a certain shelf in a locked closet, or a special cabinet.

To facilitate packing, the bottles for liquids may be of the same size, square, with glass stoppers. This makes it impossible to select one by the sense of touch, and thus necessitates a reading of the label and directions. The containers for solids may be also of one size, with large mouths, and preferably with air tight screw tops, like miniature fruit jars.

The capacity of the containers is of no importance, since several small bottles may be filled with the same substance, or, conversely, a large one may contain a small amount.

It is impossible to give minute directions to cover all emergencies, but the physician can recommend

a practical book for reference, such, for example, as Holt's *Care and Feeding of Infants*

Miss Kathryne Coleman, of La Salle, Ill., writes:

I submit the following: One roll of bandages, one box of absorbent cotton, one box of absorbent gauze, one box of adhesive plaster, one small package of Epsom salts, a small box of two grain capsules of quinine, a bottle of castor oil, one pint of good brandy or whiskey, one pint of good alcohol, one small box of mustard, carbolized oil, camphorated oil, one bottle of Jamaica ginger, bottle of carbolic acid for disinfecting purposes.

Each bottle should be labeled with name of contents, and the last *marked poison*, and also a tack in the stopper as a reminder. In fact we use that mark on all poisons in our own family chest which is an ordinary pine chest fastened to the wall and locked.

Dr. Robert P. Noble, of Ensley, Ala., states:

That a family medicine cabinet is a needful adjunct to any home, I most heartily agree.

The physician should instruct the family as to what should be kept in the cabinet. Special care should be exercised in labeling the medicines, and the poisonous drugs should be marked in large letters, colored if preferred. The cabinet should be beyond the reach of the children and locked when not in use.

Home treatment has existed in the past, is being practised now, and will continue to be as long as the world stands. This home treatment should be as simple as possible, and it is far better to direct it into the proper channel, than let it pass over the 'phone to the druggist or a friend with patent medicines. Either or both are infinitely more annoying to the physician or harmful to the sufferer than the family medicine cabinet could ever be. Properly filled, and instructions given by the physician should aid him rather than interfere with his practice, and I venture to say that many a charge might be made for prescribing over the 'phone at night a home remedy, and the expense and fatigue of the trip saved.

Any treatment, in which the use of drugs other than herein to be noted are indicated, should be attended to by the regular physician, who will in all probability be called.

I advocate a cabinet containing the following drugs:

One ounce of sulphate of quinine.
One box assorted capsules.
Tablets of calomel and wintergreen, one quarter grain each.
Two ounces of paregoric.
Two ounces of glycerin.
Two ounces of tincture of iodine.
One ounce of carbolic acid, c. p. (*marked Poison*)
One ounce cold cream.
Epsom salts, fresh.
One half pint castor oil.
One half pint oil of turpentine.
One quarter pound can of powdered mustard.
Small bottle bichloride tablets (*marked Poison*).
Surgical dressings:
One spool of one inch rubber adhesive plaster.
Half dozen one and two inch plain gauze bandages.
Half pound package absorbent cotton.
Package plain gauze, five yards.

In the foregoing list will be noticed the absence of any patent or proprietary remedy. These will too soon find their way in, only to crowd out those of real worth and value. Most of the drugs herein named are to be found scattered in almost any community or neighborhood and used recklessly.

Such a cabinet would give the physician means of prescribing over the 'phone at night or in time of emergency, treatment being properly carried on while the physician is *en route*. It will not decrease the physician's practice nor his income, but will enable him at times to add to his charges and in many cases give immediate relief to a suffering one.

Why not have the home fitted up with a medicine cabinet, where each drug is properly labeled and has its place?

Therapeutical Notes.

Medical Treatment of Exophthalmic Goitre.—

Hartenberg, in *Journal de médecine de Paris*, May 4, 1912, advises a combination of drug treatment with electrotherapy in this affection. He applies the galvanic current, at 60 to 80 milliamperes, to the thyroid every day, or on alternate days, for half an hour. The positive electrode should be a thick one, as well as broad enough to cover the lateral portions of the enlarged thyroid. The negative electrode is placed on the back in the lower dorsal or lumbar region, in order that the current shall be a descending one. The drug treatment consists of a cachet containing 0.8 gramme of potassium bromide and 0.3 gramme of quinine sulphate, which is taken at each meal. Further measures and advice are obviously necessary for digestive troubles, menstrual irregularities, general weakness, etc. Followed for two or three months, this treatment causes a marked reduction in the size of the neck and of exophthalmos, a return of the heart rate to normal, not infrequently improved vision, and disappearance of psychic manifestations. In a number of cases the benefit obtained was permanent; in others, a tendency to recurrence showed itself, which, however, yielded readily to repeated treatment. As a prophylactic measure, it is advisable to prescribe one or two sances of electric treatment and a resumption of the cachets for a week in every month.

Treatment of Night Terrors in Children.—

Oppenheim, in *Progrès médical* for February 17, 1912, states that while in some cases night terrors are dependent upon serious organic or functional disorder of the nervous system—brain sclerosis, meningitis, epilepsy, hysteria—they occur more usually in children of neurotic parentage as a result of some intoxication of dietary or medicinal origin, or of reflex irritative influences arising from disturbances of dentition, intestinal parasites, or adenoid growths. Wherever any such causative factor is found present, its removal constitutes an important part of the treatment.

Drugs, such as belladonna, opium, quinine, or sodium salicylate, should be stopped, all stimulating beverages interdicted, the meals given at regular hours, and the evening meal made a particularly

light one. In addition, the presence of any special intolerance for some usually innocuous article of food, such as milk or eggs, should be inquired into, as certain paradoxical dyspepsias in children depend upon individual peculiarities of this kind. Excessive ingestion of fluids should be prohibited; at the evening meal, in particular, the child should not take more than 150 or 200 grammes of fluid. Regular physical exercise should be prescribed, and every cause of brain excitation, especially mental overwork, removed.

Constipation should be avoided and, if present, treated with cascara preparations, given before the evening meal.

Before retiring, a bath containing 250 grammes of basswood flowers, previously boiled for an hour in five litres of water, should be given. Its temperature should be 34° to 36° C., and its duration fifteen or twenty minutes.

Where the foregoing measures do not prove successful in a few days, sedative drugs are in order:

R Potassii bromidi,	6 grammes;
Sodii bromidi desicati,	
Ammonii bromidi,	3 grammes;
Sodii benzoatis,	
Syrupi aurantii,	100 grammes;
Aquæ destillatæ,	150 grammes.

M. Sig.: One teaspoonful morning and evening for children two or three years old; one dessertspoonful for older children.

The bromides should be continued several weeks, and stopped only after the night terrors have been absent for some days.

If bromides do not suffice, chloral hydrate will have to be added:

R Chlorali hydrati, }	..... 6 grammes;
Potassii bromidi, }	..... 3 grammes;
Syrupi aurantii florum,	100 grammes.
Aquæ destillatæ, q. s. ad	

M. Sig.: One teaspoonful on retiring for children two or three years old; in children five or six years old, a second dose may be given during the night if required.

Treatment of Idiopathic Uterine Hemorrhage.

—Beckwith Whitehouse, in the *Lancet* for April 27, 1912, writes concerning the treatment of those cases, particularly of metrorrhagia, which do not depend upon such clearly evident causes as uterine neoplasms, abnormalities in pregnancy, labor, or the puerperium, etc. Drugs such as ergot and hydrastis will not infrequently fail, and benefit from curettage will be largely limited to cases of polypus or "adenomatosis" of the endometrium. Under these circumstances a further inquiry into the cause of the hemorrhage is essential. The abdomen must be examined for evidence of hepatic enlargement causing portal obstruction. The blood pressure must be taken and the condition of the vessel walls ascertained in order to determine whether the hemorrhage is secondary to arterial degeneration. Evidences of syphilis or other constitutional disease should be looked for, and if possible the calcium index estimated. The condition of the heart, lungs, and thyroid gland must be noted, and if circumstances permit, a bacteriological examination of the uterine blood should be conducted.

If the uterus is sterile, and no other cause is found to account for the bleeding, curetting may be confidently recommended. When the hemorrhage is found to be due to high blood pressure the

tension must be reduced by purgation, nitroglycerin, and dieting. Purgation is also indicated in the presence of hepatic cirrhosis. Again, if the calcium index is low, metrorrhagia will probably be benefited by calcium lactate. In cases of bacterial infection, Whitehouse obtains good results by intrauterine applications of hydrogen peroxide, Churchill's iodine, or protargol, continued for some time. Finally, where hemorrhage is due to rupture of degenerated vessels in the uterine wall, hysterectomy appears to be the best and safest procedure.

Use of Suprarenal Preparations in Tuberculosis.

—Emil Sergent, in *Paris médical* for February 3, 1912, considers the use of suprarenal preparations in tuberculosis under three headings: 1. In the presence of adrenal insufficiency. Sézary has shown the frequent occurrence of sclerosis of the adrenals in tuberculosis, while Boinet has reported cases of tuberculosis with Addisonian symptoms in the absence of skin pigmentation, however), in which relief was obtained with adrenal preparations. Sergent states that he has seen a number of tuberculous patients with muscular weakness, anorexia, anemia, and loss of weight out of proportion with the extent of pulmonary disease, in whom the administration daily of 0.3 to 0.6 gramme of dried suprarenal gland caused marked improvement.

2. In cases where, owing to profound toxemia, great extent of pulmonary lesions, appearance of pneumothorax, or owing to pressure from an extensive pleural effusion, myocardial enfeeblement and collapse take place. Here, independently of adrenal insufficiency, epinephrin may give good results. It may be given either by mouth, in doses of five or six minims of the one to 1,000 solution, every four hours, or subcutaneously, 0.005 gramme being given by hypodermoclysis in one half litre of salt solution. In hemoptysis Sergent advises against the use of epinephrin.

3. As an adjuvant to Ferrier's recalcification treatment. The efficacy of epinephrin in osteomalacia is well known, and is attributed by Gley to an influence it exerts on recalcification. Carnot and Slavu showed that experimentally fractured bones healed more rapidly under epinephrin. For the last two years Sergent has been giving epinephrin in pulmonary, osseous, and peritoneal tuberculosis, both in children and adults, in combination with the recalcification method. He noted rather constantly a diminution in phosphaturia and urinary acidity, and in some cases a more prompt appearance of the signs of recalcification. The best results were obtained in children and in bony and peritoneal tuberculosis—especially in Pott's disease. In pulmonary tuberculosis of adults the epinephrin had sometimes to be stopped, owing to the appearance of blood in the sputum, and benefit could therefore not be obtained. In children below seventeen years of age, however, less subject to hemoptysis, and more active in calcium fixation than are adults, epinephrin could be used more freely and greater benefit obtained. The drug was given in fractional doses amounting to 0.001 or 0.002 gramme per diem; after every ten days of use, the drug was stopped for five or six days. When it is used in adults (those not subject to hemoptysis) the blood pressure and sputum should be watched.

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CHARLES E. DE M. SAJOUS, M.D., LL.D.,

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THE ADRENAL SECRETION AND RESPI- RATION: ITS PRACTICAL ASPECT.

One of the most important problems of modern medicine, including its practical applications, is the nature of the process through which the blood acquires its oxygen. The prevailing view that this gas enters the blood by diffusion has not only been repeatedly found wanting by such investigators as Paul Bert, Verdeil, Müller, Bohr, Haldane, Lorrain Smith, Harley, and others, but Bohr (1891) and his followers have shown that, in order to account for the phenomena witnessed, a secreting membrane or "some sort of internal secretion" was necessary. The identity of this secretion remained obscure until 1903, when an American investigator¹ pointed to the internal secretion of the adrenals as the one which, on reaching the pulmonary cells, took up the oxygen of the air and, becoming a component of the hemoglobin, supplied this gas catalytically to all the tissues.

To the experimental and clinical facts which have of late tended to indicate the correctness of this view, have been added recently the experimental studies of Fuchs and Roth (*Zeitschrift für Pathologie und Therapie*, x, p. 187, 1912) in healthy subjects and in a case of Addison's disease. After

subcutaneous injections of adrenalin (1.0 to 1.5 mg.) the respiratory rate rose. It reached the highest level in a young individual and the lowest in a woman suffering from Addison's disease. In every instance the injection of adrenalin increased the intake of air as well as that of oxygen and also the output of carbon dioxide. The respiratory quotient rose considerably in the patient with Addison's disease. Fuchs and Roth concluded that the phenomena observed were due to the oxidation of sugar—a correct view as far as it goes—but the manner in which the adrenalin awakened such a reaction was left unexplained.

Unfamiliar as Fuchs and Roth evidently were with the interpretation of the process on this side of the Atlantic, their experimental testimony is of exceptional confirmatory value when added to the established pressure of the adrenal principle in the red corpuscles (Mulon), the rise of temperature produced by adrenal extracts (Reichert, Lépine, Morel), the fatal hyperthermia caused by whole adrenal grafts (Courmont), and many other facts which sustain the American theory.

What the recognition of this fundamental function of the adrenal secretion means in the practical field can hardly be overestimated. It not only enables us to understand the marvelous effects of the adrenal principle in all morbid conditions, the terminal stage of all acute infections, shock, hemorrhage, the whole gamut of conditions classed under neurasthenia, for example, in which the vital functions are at a low ebb—to a threatening point at times—but it opens also new lines of thought of great promise. Whether dealing with pathology, symptomatology, or therapeutics in any disease in which they are concerned, we should no longer attribute to the adrenal secretion and the remedial products which contain it, merely the power to stimulate the cardiovascular musculature, but also that of enhancing tissue oxidation, the foundation of the vital process itself.

PATHOLOGY IN MODERN DRAMATIC LITERATURE.

"Happy the country whose annals are a blank." The thought expressed by the poet may be extended to include the lives of individuals as well as of nations. The normal, tranquil existence does not abound in dramatic situations, but is prosaic and devoid of interest for others. The playwright finds his material in the pathological and abnormal. In classic Greek tragedy the attention and interest of the spectator were aroused by playing upon his emotions of terror and pity. To this end the earli-

¹Sajous, *Internal Secretions*, 1, first edition, 1903.

est dramatic themes were chosen from war and rapine, adultery and incest, murder, self mutilation and suicide, and the superstitious fears of avenging gods—the primal instincts and rude passions of a vigorous, youthful, and but imperfectly civilized race. The rich possibilities of disease as subject matter for dramatic treatment, with the single exception of madness, were unsuspected and were left almost untouched for the analytical playwrights of a more self conscious and introspective age.

It is true that Shakespeare created dramatic interest in the paths of Lear's and Ophelia's madness, in the subtle, morbid psychology of Hamlet, and in the somnambulism of Lady Macbeth, as did Goethe in the insanity and infanticide of Margarete, and Euripides in the mental infirmity of Orestes. Two generations of playgoers have been familiar with the consumptive heroine of Dumas's *Dame aux Camélias*, a not very convincing stage picture of tuberculosis conducted along romantic lines, which antedated the realism and greater scientific accuracy of the dramatic pathology of to-day. It remained, however, for the ultramoderns to produce in the person of Henrik Ibsen, that grim and indignant giant of the north, the real protagonist of the pathological in dramatic literature. In his sombre, domestic dramas nearly the entire gamut of pathology is sounded, and for this reason they possess unusual interest for the physician and will repay his careful study. In Ibsen's twenty-six plays, physicians are characters in no fewer than ten.

In the *Pillars of Society* will be found an accurate and amusing study of neurasthenia. In *The Doll's House* Nora is plainly a victim of hysteria, and her invalid friend, Doctor Rank, betrays the fatal symptoms of locomotor ataxia. The neurologist will have no difficulty in recognizing the familiar traits of the paranoiac in Hjalmar Ekdal, and senile dementia in his father, both important characters in *The Wild Duck*. *Hedda Gabler* contains a study of the capricious longings and whims of the early months of pregnancy; the supine, colorless wife of *The Master Builder*, Mrs. Solness, is a sufferer from anemia; hypnotism is the theme in *The Lady from the Sea*, and in *Ghosts* is an appalling presentation of hereditary syphilis. The scene in the Egyptian mad house in *Peer Gynt* will provide any alienist with an evening's entertainment in classifying the various types of lunacy under the care of the extraordinary Doctor Begrif-fenfeldt.

It is somewhat remarkable that although Ibsen was for several years director of the theatre at Bergen, which is the site of two leper hospitals, the distinguished dramatic pathologist has in none of

his plays held a clinic on leprosy. This omission, however, has been supplied by his German disciple, Hauptmann, in *Der arme Heinrich*, and also by Hardt in his play *Tantris der Narr*. Recently a new opera, *La Lépreuse*, was produced in Paris. In other plays by Hauptmann are striking studies of alcoholism, the delirium of fever, paresis, catatonia, and pregnancy, remarkable for their verisimilitude and fidelity to medical truth. George Bernard Shaw has written a play in which much of the interest relates to the opsonic index. The aspiring dramatist or librettist of a pathological turn need not despair, however, for all the stage possibilities of the hospital and bedside are far from being exhausted. Appendicitis, carcinoma, typhoid fever, the bubonic plague, the exanthems, and many minor medical and surgical ailments have not yet had adequate dramatic treatment. If the present tendency continues it may be quite possible for the future medical student to receive some part of his training in the theatre, which, with artists skilled in the representation of diseased types, will become a valuable supplement to the clinic and laboratory.

THE TREATMENT OF ACUTE LOBAR PNEUMONIA.

In this issue of our JOURNAL appears a very interesting article by Doctor Anthony A. Rutz, of this city on the rôle of the intestines in acute lobar pneumonia and the treatment deduced therefrom. The author has examined the feces in patients suffering from acute lobar pneumonia, basing his research upon the fact that as a large number of pneumococci are found in the sputum, mingled with the saliva or food, they may find their way into the intestines where they will multiply and generate their toxins. He has been able to demonstrate the bacilli in feces and describes his method explicitly. Upon these findings he bases his treatment, reasoning logically that the bacilli and their toxins should be eliminated from the blood by the organs of excretion, and believing that the intestine is the special organ of excretion in such cases, just as the skin acts in the first few days of scarlet fever, and the kidneys later in the disease. Doctor Rutz reports twenty-seven cases of acute lobar pneumonia which he treated according to his idea and all of which ended in recovery.

Combined with Doctor Rutz's method the treatment of acute lobar pneumonia should be therefore on the following lines: Absolute rest in bed; with an ice bag upon the patient's head if the fever is high; plenty of fresh air to relieve and assist the lungs; a carefully regulated diet, suspension, if necessary.

of all solid food; plenty of water, better some natural carbonated water; the bowels should be kept open and enemata should be given about three times a day, containing one quart of one per cent. hot salt solution, with one or two ounces of magnesium sulphate, to be retained about half an hour. To this part of the treatment the patient will surely object, just as he objects to ice cold baths in typhoid fever. The gathering of mucus in the bronchi should be prevented by expelling the sputum with every attack of coughing; this is very important, as otherwise the mucus collects, naturally impeding breathing, and making the subsequent coughing spells more severe. The author advises the use of digitalis, for which he gives his reason, but many of our readers will object to it and will adhere to the use of strychnine, grain 1-60 every two hours. Restlessness should be overcome by small doses of veronal.

We are glad to call our readers' attention to the communication of Doctor Rutz, which certainly deserves careful reading, while his treatment should receive at least a trial.

ABSINTHE.

Apropos of recent legislation forbidding the importation into the United States of absinthe, it will probably be found necessary to go still further and forbid specifically the importation of any beverage containing thujone. This is a colorless, oily ketone, $C_{10}H_{16}O$, with an agreeable odor, to which the ensemble of symptoms known as absinthism are due, apart from those which may be attributed to the large percentage of alcohol in the beverages with which it is combined. Such further legislation, according to *Semaine médicale* for July 3, 1912, is under discussion in the French Senate, where the sale, keeping for sale, manufacture, and transportation of any liquid containing thujone, except for pharmaceutical purposes, are likely to be forbidden. That is, as our contemporary hints, after the usual prolonged debate to which measures of this kind always give rise. Nothing would be easier, apparently, than to evade a law affecting absinthe alone. Other combinations of wormwood, tansy, anise, arborvitæ (*Thuja occidentalis*), or other plants containing the seductive and fatal thujone could be substituted, or synthetic combinations might soon appear in the laboratories of our clever chemists. Those who are conscientiously fighting the green peril, therefore, should see that a radical and sweeping law is enacted, as secure as may be from the ingenious attacks and evasions to which such a statute would instantly be subjected.

A METAL USEFUL FOR INSTRUMENTS.

According to *Presse médicale* for July 3, 1912, Péraire has presented to the Société des chirurgiens de France several surgical instruments he had had made of tantalum, a rare metal and one difficult to isolate, but possessed of greater elasticity than steel and harder than platinum, than which, moreover, it costs less. Tantalum may be subjected without injury to all forms of sterilization, and is not attacked by the usual acids, or salts, even those of mercury. The name is derived obviously from Tantalus, according to some authorities because it is so difficult to isolate, others contending that the reference is to the unquenched thirst of that hero, for the metal remains unaffected by all liquids save hydrofluoric acid.

EXHIBITING CHLORAL HYDRATE IN EPILEPSY.

Henri Damaye is of the opinion that chloral hydrate is the proper remedy in epileptic convulsions. He reports in *Echo médical du nord* for April 28, 1912, through *Presse médicale* for July 6th, that enemas are too easily rejected and that the best way to give the drug is by means of an esophageal tube introduced through a nostril. Four to six grammes, or one to one and a half drachm, may be administered in this way, diluted in 300 to 500 grammes, or nine to fifteen ounces, of water. The absence of eosinophiles is marked during an attack, but afterward, says Damaye, their "timid" reappearance is noted.

THE PLAGUE.

The plague situation in our insular possession, Porto Rico, seems to be well in hand. As is usual in cases where grave danger threatens, the Public Health and Marine Hospital Service has been asked to take charge of the plague eradication work in San Juan and vicinity in cooperation with the local sanitary authorities. The work has been carried on in the old city of San Juan, where all the human cases with the exception of ten have occurred. Up to July 11th there were in San Juan, according to the *Public Health Reports* of that date, twenty-four cases and sixteen deaths; in Santurce, seven cases, three deaths; in Carolina, two cases and two deaths, and in Arroyo (on a schooner from San Juan), one case, one death; Santurce is a suburb of San Juan and Carolina a town about fifteen miles away. The case on the ship between Porto Rico and Arroyo proves the urgent necessity of stringent quarantine against all vessels from the infected port. Special attention is being given to laboratory examination of rats, to outline definitely the infected areas. At the same time steps are being taken toward the ratproofing of the entire waterfront.

From Havana we have the report of one case of plague (July 4th). Because of the occurrence of plague in Porto Rico and Havana, appropriate instructions have been issued to the quarantine officers at the various United States ports. Vessels from these ports are subjected to careful inspection.

tion; the temperature of passengers is taken; if the vessel can show that it has been fumigated at the port of departure, that no passengers are from an infected district, and if there is no other quarantine reason for detention, the vessels are passed. On the other hand, signs of rats being on board, or the presence of suspicious illness, or fever in passengers or members of the crew concerning which the quarantine officer is in doubt, or the presence on board of persons from infected districts who have not passed the period of incubation of plague, are causes for quarantining the vessel.

That plague is a permanent menace, even in America, may be seen from the consular report from Trinidad, West Indies: There were between February 18 and July 12, 1910, nine cases; the number of deaths is not given. In 1911, between February 10th and May 9th, we find seven cases; no death reported. In 1912, between April 1st and June 13th, there were eleven cases with seven deaths, and on July 2d one more case was reported.

Medical Law.

I. THE RIGHT TO PRACTISE MEDICINE AND SURGERY.

An interesting case of prosecution for unlawfully practising medicine and surgery is reported in 146 Southwestern Rep., page 891; the case is entitled *Singh v. State* and is from the Court of Criminal Appeals, of the State of Texas.

In this case, one Bishen Singh, a Hindu, who did not pretend to be a qualified physician and surgeon, had located at Dallas, Texas. He announced his availability to the public by means of certain literature. He had a card printed, on one side of which was a picture of a man with certain hieroglyphics below, followed by the words "Bishen Singh, Hindu, Punjab, East India." On the reverse side of the card was a picture of a building with the following words: "You are invited to call at the Hindu Temple of Science and Health. The only one of this kind in America. Yogi Philosophy—Psychic Healing—Health—Success—Happiness. Consultation Free. Phone M. 6583, 226 Ross Ave., Dallas, Texas." A circular which he caused to be issued had also a picture of a house, followed by the words "Hindu Temple of Science and Health. The only one of its kind in America. Yogi Philosophy. Psychic Healing. The Ancient Methods of the Old Masters and Adepts Used in the Treatment of Diseases of the Body and Mind. When all other means have failed to restore you to health and happiness go to the Hindu Temple, 226 Ross Ave., Telephone Main 6583, Dallas, Texas. Consultation Free." The defendant also used a letterhead, in substance the same as the circular.

Upon the trial of the case, a witness by the name of Ball testified that he took his wife to Dallas to be treated for a tumor and cancer of the stomach, and that he was induced to go to the defendant, who told him that he could cure her, and that the witness agreed to pay \$30 to the defendant to treat his wife. The witness in describing the treatment said that the defendant would rub the palms of his hands together, that he would lay his hands on the

tumor and draw them across the tumor; this he repeated a number of times; he would throw his hands as if casting it behind him, telling the patient that the tumor would go away. He was about thirty minutes giving this treatment. He also gave absent treatment, with regard to which he instructed the patient at a given hour "to look at a picture he had, and to lie straight out and put her mind on that and be quiet, and not let any noise or person bother her at all." The witness paid the defendant \$30 and asked him for a receipt; he answered that he never gave receipts, saying that he could not collect debts by law. The witness also paid \$10 by check, on the face of which he wrote "one week's medical treatment for wife," which was introduced in evidence. The check had been indorsed by defendant and cashed. The witness also testified that defendant prescribed for him a box "Azhaca" and two pipes, and told him to smoke the preparation for his catarrh. He paid the defendant one dollar for the preparation. The preparation was in a box; on the back were printed words recommending it for the cure of catarrh, asthma, etc. It had on it the name "Singh Remedy Company."

Another witness also testified that he called upon the defendant at the "temple" and asked him if he could cure his wife for neuralgia and the defendant replied that he could and that the charges would be \$10 a week if the witness brought his wife to the temple, and \$15 if the defendant preferred to go to the home of the witness.

The principal question presented to the Court on this appeal was whether or not defendant was engaged in the practice of medicine. Upon the trial of the case defendant contended and introduced witnesses to prove that the only treatment he gave was by prayer, that he did not claim to effect these cures himself, saying his power was from God, that God effected the cure. Pursuant to this theory of the defense the Court was requested by defendant's counsel to charge the jury that if they believed from the evidence he used prayer only in this treatment, and held himself out as treating diseases through the will of God only, that this was not the practising of medicine as defined by the statute governing the practising of medicine, and that if they so believed they should find the defendant not guilty. The trial Court refused to give this instruction to the jury. Upon the appeal this refusal was urged as ground for reversing the judgment of conviction.

Mr. Justice Harper, in considering the force of this argument, referred to the fact that the medical act of the State of Texas was a reasonable exercise of the police power of the State, for in the act it was provided that nothing therein should be construed so as to discriminate against any particular school or system of medical practice. Continuing the Justice said:

However it does provide that no one shall treat or offer to treat, any disease, mental or physical, or any physical deformity or injury, by any system or method and charge therefor, unless such person has obtained a license from the board of examiners appointed by the Governor, and said board is required to examine applicants as to their knowledge of anatomy, physiology, chemistry, histology, pathology, bacteriology, physical diagnosis, surgery, obstetrics, gynecology, and hygiene. If a person is of good moral character and passes an examination in the subjects named he may practise whatever method he deems best for

effecting the cure of disease. The subject of the public health being a matter subject to the police power of the State, the legislature has the power to pass laws requiring a certain amount of knowledge on given subjects, which it in its wisdom deems essential to the proper diagnosis and treatment of disease. In the law there is no discrimination as to persons or methods, but all are required to undergo the same examination, and then each and every person licensed may treat disease in the way by him deemed best. The legislature has not sought to say how disease shall be treated by any one, but has simply required that all persons who shall treat or offer to treat disease shall have a knowledge of given subjects; the legislature deeming this essential to the preservation of the health of the citizens of the State. It is not for the courts to say that this is wise or unwise; that the requirements are too onerous or are insufficient to accomplish the purposes intended. This is a matter confided to the wisdom of the legislative branch of the government, and in the law it is provided that the examination shall be fair and impartial to all individuals. There is no discrimination against any persons or class of persons, but the legislature deeming it essential that all persons who shall treat or seek to treat disease in this State for compensation shall possess knowledge of certain given subjects it has so declared. The law is not violative of any provision of the Constitution and is but an exercise of the police power on a subject that all the law writers of note declare is within that power.

The Justice then shows that the legislature has defined the words "practice of medicine" to embrace all "who shall publicly profess to be a physician or surgeon and shall treat or offer to treat diseases, etc., also all persons who shall treat or offer to treat diseases, etc., for compensation." The Justice then adds:

We hold that in so defining the words the legislature has rendered liable to the provision of the act all persons who shall treat diseases and charge therefor, regardless of the mode or method used in so doing, and the evidence both for the State and defendant, showing that appellant was treating and offering to treat diseases and disorders, and the evidence for the State being sufficient to show that he was making charges therefor, the judgment is affirmed.

News Items.

Changes of Address.—Dr. M. L. Freundlich, to 157 West 120th Street, New York.

Dr. W. Lyon, to 99 West Main Street, New Britain, Conn.

Dr. Charles Flagler, to 622 Main Street, Stroudsburg, Pa.

Dr. James E. Bowen, to Maple Avenue, Springfield, Mass.

Dr. F. J. McMenamin, to Oneonta, N. Y.

Dr. John J. Wermuth, to Fishkill Landing, N. Y.

Dr. N. M. Crofts, to 68 Main Street, North Adams, Mass.

Dr. M. J. Hess, to Fairview Cottage, Arbutus Park, Pa.

Novel Proceedings of a County Medical Society in Ohio.—According to the *Mount Vernon News*, for the past few years the Morrow County (Ohio) Medical Association has held an annual picnic at Roger's Lake. It has proved to be a most popular affair and this year the scope was enlarged and a general invitation was extended to the public to attend. The doctors always provide a programme of much interest, including lectures, ball games, swimming contests, etc. It was the intention to make this annual gathering, which was held on Wednesday, July 17th, more interesting than any in the past and medical associations in adjoining counties were urged to cooperate in making it a success. It was the expressed desire that the picnic be a gathering to which everybody should be most cordially invited. It would be almost impossible to induce the New York Academy of Medicine to organize an affair of this kind.

Additions to the French Hospital, New York.—Announcement was made on July 13th, by Mr. Lucien Joubaud, president of the French Benevolent Society, that a gift of \$30,000 from J. Pierpont Morgan, Edward Tuck, George F. Baker, and Thomas F. Ryan had been received for the completion of a \$125,000 fund to build a home for the aged and a training school for nurses in the rear of the French Hospital on West Thirty-fourth Street.

New Department of Lutheran Hospital, Brooklyn.—The cornerstone of the Nose, Ear, and Throat Dispensary of the Lutheran Hospital, at East New York Avenue and Junius Street, was laid on July 7th. The new building is to be thirty by fifty feet, two stories high, and is to have private wards, an operating room and consultation rooms for the medical staff and their assistants. The building is to be of stone and iron and will cost \$18,000. The managers feel confident that the establishment of the dispensary will greatly increase the benefits of the hospital. In this branch of the work at the hospital during 1911 there were 1,168 operations performed, although the accommodations were meagre.

Personal.—Dr. J. W. Osborne, of Des Moines, has been elected president of the Des Moines Valley Medical Association.

It is reported that Dr. W. L. Hartman, of Syracuse, was shot in the leg while camping near Malone, N. Y., and was hurried to Montreal, where the injured limb was amputated.

Dr. W. L. Thompson, of Milwaukee, has been elected president of the Wisconsin State Board of Examiners. Dr. John M. Bessel, of the same city, was reelected secretary.

Dr. E. H. McIntyre, of Chicago, has been engaged as physician in charge of the new hospital at Virginia, Minn.

On July 9th, Dr. John L. Meeker, of Newark, passed the examination for the position of medical director of the Tuberculosis Sanatorium, at Verona, N. J.

Dr. Alexander Smith has resigned as assistant surgeon at the hospital of the State Soldiers' Home at Bath, N. Y., to engage in private practice in Rochester.

Dr. William C. Fowler has been reappointed inspector in charge of the contagious disease service and supervisor of the disinfecting service and the public crematorium at Washington, D. C. Other employees in the contagious disease service, the disinfecting service, and the maintenance of the public crematorium, who are paid on a per diem basis, have been reappointed as follows: Dr. E. L. Le Merle, Dr. A. L. Hunt, Dr. W. S. Hardesty, and Dr. J. B. Bogan, medical inspectors; Dr. J. J. Kinyoun, bacteriologist; Dr. Llewellyn Eliot, medical inspector.

International Health Congress.—The fifteenth International Congress on Hygiene and Demography will be held in Washington, D. C., September 23d to 28th, and in connection with this congress there will be held one of the most elaborate exhibitions on health ever arranged, which will be opened the second week in September and last three weeks. This congress was organized sixty years ago at the time of the outbreak of cholera in Europe, but this year's meeting will be the first to be held in America, the other fourteen congresses having been held in various cities of Europe. The governors of forty-three States have already appointed committees of representative physicians to attend the congress and take part in the discussions, and twenty-five foreign countries have signified their intention of being represented. Hotel accommodations have already been arranged for three hundred delegates from Germany alone. President Taft, honorary president of the congress, will open the congress and its deliberations will be conducted under the direction of the following officers: President, Dr. Henry P. Walcott, president of the Massachusetts State Board of Health; chairman of the Committee on Organization, Hon. Huntington Wilson, assistant Secretary of State; secretary general, Dr. John S. Fulton, of the University of Maryland; director of the exhibition, Dr. I. W. Schereschewsky, passed assistant surgeon, United States Public Health and Marine Hospital Service; secretary of the Finance Committee, H. Wirt Steele, Senate annex, Washington, D. C.; treasurer, Charles J. Bell, president American Security and Trust Company, Washington; chairman of the Executive Committee, Dr. William H. Welch, professor of pathology, Johns Hopkins University.

Pith of Progressive Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL

July 4, 1912.

1. J. C. HUBBARD: Remote Metastases Following Cancer of Breast.
2. ELMER S. TENNEY: Blood and Stool Examinations in Company of Philippine Scouts.
3. CHARLES J. KICKHAM: Theories as to Causation of Monsters.
4. Symposium on Suppurations of the Urinary Tract.
5. H. TERRY: Suppurations of Urethra, Prostate, and Seminal Vesicles.
6. HERMAN C. PITTS: Suppurations of Urinary Bladder.
7. O. C. SMITH: Suppurative Lesions of Kidney and Ureter.
8. GEORGE W. MORSE: Three Unusual Cases of Appendicitis.
9. LUTHER G. PAUL: Operative Treatment of Spina Bifida.

2. **Blood and Stool Examinations in a Company of Philippine Scouts.**—Tenney finds that there is a prevalence of intestinal parasitic infection in a large percentage of Filipinos, even when living under the favorable conditions of the soldier; that the average Filipino can harbor a variety of intestinal parasites without any apparent detriment to his general health; that uncinariasis is common, but seldom causes any definite symptoms, and that filariasis is not of frequent occurrence.

4. **Suppurations of the Urinary Tract.**—Terry calls attention to a frequent error in mistaking prostatitis and seminal vesiculitis for cystitis.—Pitts discusses cystitis, which he finds to be generally a symptom to be cured by finding and removing the ultimate cause.—Smith emphasizes the fact that suppurative lesions of the kidney are of common occurrence and call for more alertness on the part of the profession to detect, diagnosticate, and treat them.

6. **Spina Bifida.**—Paul gives advice not to operate if the patient is mentally defective, or if marked paralysis exists; not to operate on very young infants unless rupture has occurred, or is imminent; to raise the foot of the operating table so that the patient's head will be low, and endocranial pressure maintained; to see that the sac is free from nerve elements before ligating the pedicle. A small, temporary drain, down to the lumbar fascia, is advisable.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

July 6, 1912.

1. W. B. CANNON: Functions of the Large Intestine.
2. J. SHELTON HORSLEY: New Method of Suturing Bloodvessels.
3. G. KOLISCHER: Prostatic Study.
4. H. J. F. WÄLLHAUSER: Pityriasis Rubra (Hebra).
5. WILLIAM S. GOTTBREIT: Cancerous Degeneration in Chronic Leg Ulcer.
6. J. ROSENFELD: Successive Cowpox Vaccination.
7. A. MACINTOSH: Transplantation of Human Cornea Previously Preserved in Antiseptic Fluid.
8. EDWARD P. DAVIS: Modern Obstetrics, with Relation to the General Practitioner, Student, Midwife, and Specialist.
9. GEORGE M. GOLDB: Reading Book Page Instantaneously: Unique Visual Power.
10. CHARLES H. MAYO: Factors of Safety in Operating for Exophthalmic Goitre.
11. E. P. QUAIN: Catharsis.
12. J. RIDDLE GORFE: Intraabdominal Pressure: Importance in Maintaining Static Equilibrium; Necessity of Conforming to Laws in Restoration of Organs to Normal Position.
13. M. L. RAVITCH: Earlier Diagnosis of Pellagra.
14. LOUIS C. LEHR: Gonorrheal Pyelitis.
15. TILLSON L. HARRISON: Cesarean Section on Ranch.

1. **Functions of the Large Intestine.**—See the JOURNAL for June 8th, page 1220.

3. **A Prostatic Study.**—Kolischer calls our attention to the findings of Zuckerkandl and Tandler that our accepted division of the prostate into two lateral and one median lobe is not in accordance with the anatomical facts; furthermore, the anatomical capsule of this gland is derived from, and is in intimate connection with the endings of the pili-

vic fasciæ that meet around this gland, that it is impossible to enucleate the prostate from this capsule, that it can only be dissected out of it, and that the "surgical capsule" of the prostate is a misnomer. With Freudenberg they agree that the prostatic capsule of the surgeons is in fact compressed prostatic tissue. Hypertrophy of the gland occurs exclusively in this part of the prostate, extending from the internal urethral orifice into the openings of the ductus deferentes, and this hypertrophy includes only the central nucleus of the gland. If the so called total prostatectomy (called subtotal by the author) is properly done, the urethra will be severed proximally from this section of the canal that carries the colliculus seminalis with the exits of the ductus deferentes. In healing the lowest part of the bladder aids in reforming the urethra; this is facilitated by the sinking down of the entire bladder, after removal of the prostatic hypertrophy, thus approaching the distal portion of the urethra that is fixed by the urogenital diaphragm. The suprapubic method should be the choice, since the part of the prostate that is always affected is that which is closest to the bladder. The urinary disturbances in these cases are explained by compression of the prostatic urethra. The coverings of the prostate should be incised deeply until the palpating finger can no longer discern tissue movable over the prostatic tumor. The suprapubic method gives greater control over hemorrhages. Improvement in the sexual power has followed prostatectomy in three of the author's cases. The urethra is shortened to the extent of one and a half inch to two inches by prostatectomy.

5. **Cancerous Degeneration in Chronic Leg Ulcer.**—See the JOURNAL for June 8th, page 1229.

11. **Some Observations on Catharsis.**—Quain concludes a study of this subject with several practical deductions. He finds that the food normally passes rapidly from the stomach and through the small intestine, the latter being practically empty six hours after an average meal. The bowel contents remain in the cecum and colon from twenty-four to forty-eight hours. Normal bowel function is dependent upon the maintenance of a certain equilibrium between the physiological and bacterial processes in the intestine. This poise is disturbed to a marked degree by saline cathartics, making their use a matter of deep consideration. Considerable time elapses before the intestinal mucosa, depleted and exhausted by any powerful cathartic, recovers itself; meanwhile, bacteria flourish unmolested by the intestinal ferments. While a comparative asepsis is practical, intestinal antiseptics is of unknown and doubtful efficacy. An artificial evacuation of the large bowel, sufficient for most surgical purposes, is effected by high rectal injections without damage or discomfort; the ingestion of any drug acting upon the small intestine is unnecessary. It is not only dangerous, but contrary to modern knowledge and experience to administer a cathartic in the beginning of an acute intraabdominal infection. Restricted diet and rectal injections are better preparations for laparotomies than purgatives; postoperative recovery is more pleasant likewise.

12. **Intraabdominal Pressure.**—See the JOURNAL for June 8th, page 1221.

MEDICAL RECORD.

July 6, 1912.

1. WILLIAM S. BAINBRIDGE: The Keating-Hart Method of Fulguration.
2. CHARLES F. DIESEN: Relations of Calcium to Pretuberculous States, Arteriosclerosis, and Insanity.
3. ROLAND HAMMOND: Advantages and Disadvantages of Plaster of Paris as Fixative Apparatus.
4. JOHN C. WARRICK: Indicanuria and Proteins.
5. ANTHONY BASSLER: Innocent Colon Bacilli in Urines.
6. L. P. STARR: Differential Diagnosis of Pulmonary Tuberculosis.—Based upon 510 Nontuberculous Cases Admitted to Gouverneur Tuberculosis Clinic.

1. De Keating-Hart Method of Fulguration.

—Bainbridge has conducted an investigation into the theory and technique of the de Keating-Hart method of fulguration or sideration with a view to its use in the New York Skin and Cancer Hospital if results warranted it. The development of this method rests upon the premise that the unipolar long spark of high frequency and high tension acts, not upon the neoplasm, but upon the soil on which the neoplasm has developed. To establish this premise three groups of facts are relied upon: (a) That sparking, even when used with inadequate surgical operation, gives undeniable results, doubtless insufficient, but very definite. (b) That the appearance or vitality of the tumor is wholly unmodified, from which one concludes that it is not the tumor itself, but the condition of its nutrition—the environment in which it develops—that is transformed. (c) That plausible explanations of the foregoing are furnished by laboratory experiments and clinical observations. From the work by Ghilarducci along this line it has been found: (a) That the action of the current varies as the intensity and duration of the fulguration. (b) That it manifests itself at a considerable distance from the point fulgurated. (c) That the distant medullary lesions may vary from a simple chromatolytic reaction to a cellular necrosis. The reaction of the high tension current employed in fulguration doses is entirely different from that of any other physical agent. The explanation of the success of this method in the treatment of cancer, while incomplete, is that it acts through the retardation of the epithelial covering of wounds, the retrogression that it provokes even in cancer nodules situated around the fulgurated zones and, finally, to the distant histological actions that it determines in the medullary centres corresponding to these zones.

3. Plaster of Paris as a Fixative Apparatus.—

Hammond, in a discussion of the advantages and disadvantages of plaster of Paris as a fixed dressing, recalls the observations of Auzoletti, Roepke, and Hohmeier, who have shown that by applying plaster in the rachitic deformities of the lower extremities, a softening of the bones takes place so that after four to six weeks the leg can be easily moulded into the correct position, without anesthesia and without operation. This disappearance of the lime salts from bones encased in plaster of Paris, further proved by the röntgenogram, has been used in the treatment of bowlegs, especially in young children with pliable bones. In older children, and in cases where the bone is sclerotic, osteotomy and osteoclasia will still be preferred.

6. Differential Diagnosis of Pulmonary Tuberculosis.—

Starr bases his remarks on this sub-

ject upon five hundred and nineteen nontuberculous patients referred to the Gouverneur tuberculosis clinic on the suspicion, or with a positive diagnosis of consumption, fairly representing the types of cases usually confounded with pulmonary tuberculosis. In the majority of these cases the history and symptoms resemble very closely those in true tuberculosis. Many of these patients were directly exposed to contagion, making careful and prolonged observation necessary. Any illness accompanied by cough, loss of weight or color, pain in the chest, or dyspnea, weakness and rapid pulse, gives rise to the suspicion of tuberculous infection. The commonest condition mistaken for pulmonary tuberculosis is chronic bronchitis associated with emphysema, in which cases the variety rather than the deficiency of physical signs gives rise to difficulty in excluding the tuberculous. The two conditions not infrequently occur together. The need of careful and extended observation is emphasized, also caution against hasty diagnosis based upon insufficient data or too brief a period of observation.

BRITISH MEDICAL JOURNAL

June 29, 1912.

1. M. MORRIS: Prurigo, Pruriginous Eczema, and Lichenification.
2. C. P. LAPAGE: Fever of Obscure Origin in Infancy and Childhood.
3. A. E. TAIT: A Study of an Epidemic of Measles.
4. A. H. GIFFORD: Aneurysm of the Superior Mesenteric Artery, with Rupture.
5. THOMAS LEWIS: Electrocardiography and Its Clinical Importance (Part II).

3. Measles.—Tait bases his paper on the study of 437 cases of this disease in an epidemic. His series gives striking evidence of the fact that death depends upon the pulmonary complications, such as bronchitis, pneumonia, and bronchopneumonia. In the first five years of life the curves of incidence of pulmonary complications and of death are parallel. The total death rate of the epidemic was 5.03 per cent. Severe pulmonary complications were present in 23.57 per cent. of all cases. He finds that pneumococcal infection is the prime cause of the deaths in measles. It is especially noticeable that in those cases of pulmonary complication in which the cause was prolonged, recovery was almost invariably the rule, even in the most severe cases. Tait found that even children who were suspected of being tuberculous recovered after severe pulmonary complications. In this epidemic epistaxis occurred in ten per cent. of all cases, mild and severe. This came on just prior to the appearance of the rash, or within twelve hours after its appearance. He found Koplik's spots of no use in diagnosis, for so many children had some kind of mouth lesion not typical. In his entire series he had no case of the disease without more or less distressing cough. About fifteen per cent. of the patients were stated to have had measles before.

4. Aneurysm of the Superior Mesenteric Artery.—

Gifford reports a case of aneurysm of this artery which had the following points of particular interest: 1. The aneurysm must have developed in the course of this vessel behind the pancreas, as remnants of the arterial wall were found lying flat on the posterior wall of the sac. 2. The gradual growth of the large aneurysm had caused a fusiform dilatation of the aorta itself by traction.

3. There was rotation of the aorta so that the opening of the celiac axis, and what must have been that of the superior mesenteric were found on the right side of the aortic dilatation. 4. There was a gradual and persistent dissection upward to the lower surface of the liver, where the rupture occurred.

5. **Electrocardiography.**—Lewis continues his discussion, with tracings, of the value of this method of examination of the heart's function in clinical practice. He shows that this is the only possible means of accurately estimating, or even of discovering changes in the myocardium. By this means, also, it is possible to determine the presence of a lesion affecting only one of the limbs of the auriculoventricular bundle. The true nature of bradycardia and tachycardia, and their relation to different factors, such as septic or febrile conditions, can be studied only by galvanometric examination of the heart.

LANCET

June 29, 1912.

1. L. S. DUDGEON: Pathology of Immunity (*Lecture III*).
2. PERCY KIDD: Moot Points in Pathology and Clinical History of Pneumonia (*Lecture III*).
3. H. VON BARDELEBEN: Relationship of Lungs and Genital Organs of Tuberculous Women.
4. R. DONALD: Comparison between Fleming's Modification and Wassermann Test.
5. L. C. P. RITCHIE: Disappearance of Skin Carcinoma under Adrenin.

3. **Lungs and Genital Organs of Tuberculous Women.**—Von Bardeleben enters into a discussion of the relationship between these two sets of organs in tuberculosis and seeks to discover the causes at the bottom of the relations. He sums up his observations by saying: 1. As a rule, genital tuberculosis arises from pulmonary disease. The prognosis of lung tuberculosis becomes much worse when complicated by genital tuberculosis. The early removal of a genital tuberculous lesion by operation often makes it possible to effect a cure of a newly kindled lung involvement. 2. In pregnancy the placenta, or the placenta uterina, is often the principal site of action and interaction; (a) it often provides a harbor for tubercle bacilli circulating in the blood, from which harbor the bacilli can be again mobilized at any moment, especially by the separation of the placenta; (b) therefore the chances of harboring bacilli are much greater in the cases of active, manifest lung tuberculosis than in the quiescent cases; the liability in these two classes of cases is as ninety in the former to fifteen in the latter. 3. This agrees with the results of therapeutic intervention. (a) Artificial abortion gives really good results in those cases only in which tubercle bacilli are practically never found in the placenta; that is, in the cases of simple catarrhal lung involvement until the fourth month of pregnancy. On the other hand, bad results follow in those cases in which there is great probability of placental tuberculosis, even in the early months of pregnancy. That is in the cases of active lung disease. (b) The results in the second class may be made just as good as in the first if, instead of mere removal of the embryo, there is excision of the placenta uterina. 4. The ovaries have no part in the aggravation of the disease. On the contrary, their removal in the first class of cases makes the results eight to ten times worse than with simple abortion. 5. The extirpation of the whole uterus, in the second class of

cases, gives much better results than simple emptying, but, at the same time, it brings with it disadvantages which render the total excision of the placenta uterina a much more effective procedure.

4. **Fleming and Wassermann Tests.**—Donald conducted a careful and extensive comparison of the Wassermann test with the simpler Fleming's or Hecht's modification, and was led to the following conclusions: The modification does not give sufficiently accurate results to warrant its substitution. Of eighty-two sera, six were incompletely positive by the modified test, though negative by the Wassermann. This is not to be taken to mean that the modification is the more delicate, for this is not the case. Of sixty sera in a second series, sixteen failed completely to hemolyze the controls. Eleven sera were negative to the modified test, though positive to the Wassermann. Of these eleven, ten were from proved syphilitics. It is possible to overcome some of the shortcomings of the modification, but the difficulty is greater than in the performance of the original Wassermann, and the results are still not as trustworthy. Donald aptly remarks that, "Knowledge and experience and sound serological skill are, after all, the most important requisites for carrying out the test reliably."

5. **Adrenin in Skin Carcinoma.**—Ritchie reports the cure of a case of this disease six years ago by the local application of adrenin. There has been no recurrence. While it is true that radium was previously employed on the same case, alone and along with adrenin, there is reason to believe that the subsequent use of adrenin alone was responsible for the cure.

BULLETIN DE L'ACADÉMIE DE MÉDECINE.

June 11, 1912.

1. E. BRUMPT and R. BLANCHARD: Experimental Study of the American Trypanosomiasis of C. Chagas.
2. POUCHET: Preservatives and Coloring Agents in Vegetables for Human Consumption.
3. E. NOUSRY: Epidemics in France in 1910

1. **American Trypanosomiasis.**—Blanchard presents an account of Chagas's discovery of and researches concerning a form of trypanosomiasis prevalent in certain parts of Brazil and due to *Trypanosoma cruzi*. Innumerable cases of acute or chronic infection, especially in young children, but sometimes also in adults, and either resulting fatally or leading to permanent disorders of function, were found to be caused by this parasite. All cases show variously combined symptoms of thyroid insufficiency and some also of adrenal insufficiency, the disease being, in fact, properly classifiable as a parasitic thyroiditis. Acute cases generally occur in children less than a year old, and exhibit continued high fever, swelling of the face, thyroid and lymphatic enlargements, a special feeling of crepitation imparted when the facial skin is pressed upon, slight hepatic and splenic enlargement, sometimes symptoms of meningoencephalitis or extensive effusions into the serous cavities. Chronic cases are divided into the pseudomyxedematous, myxedematous, cardiac, and nervous forms, all of which are more or less benefited by thyroid treatment. Many cases of paralysis, mental deficiency, infantilism, and cretinism are presumed to be due to the disease. Recent experimental work done by Brumpt is also described by Blanchard. It was as-

certained conclusively that, when ingested by larvæ of the hemipterous insect, *Conorrhinus megistus*, the trypanosome invariably undergoes development in the digestive tract of the insect, a form capable of rapid multiplication being produced. The dejecta of this insect, already infected for five months, always transmit the disease in susceptible animals when they contain trypanosomes. The larvæ experimented with were shown not to have any trypanosomes in their salivary glands; this, in turn, demonstrates that when human beings become infected it is because the trypanosomes have migrated atypically from their usual location—the digestive canal—to these glands. The dejecta of bedbugs were also found by Brumpt to reproduce the infection in susceptible animals.

JOURNAL DE MÉDECINE DE PARIS.

June 22, 1912

1. MILHIT: Treatment of Typhoid Fever (Continued).
2. CHÉRON: Radiotherapy in Hemorrhagic Fibromata.
3. WEILL and MOURIQUAND: Albuminous Milk.
4. RÖDERER: Floating Hip Following Epiphysitis.

1. **Typhoid Fever.**—Milhit takes up prophylaxis and cites the warnings issued by the Académie de Médecine to the effect that infected water supply was the source of most cases; infection of wells by purin bodies is not uncommon, also that of milk and other beverages. Feces should be carefully guarded. Flies are a menace. All patients are sources of infection, particularly dangerous being the ambulant patients. Troops when encamped seem to be especially liable to typhoid. Antityphoid vaccination is highly commended.

3. **Albuminous Milk.**—Weill and Mouriouand have used albuminous milk, in which the lactose was replaced by maltose, according to a highly praised German formula, in sixteen cases. In all the results were distinctly unfavorable. The authors disclaim any desire to express a definite opinion from so few cases.

PARIS MÉDICAL.

June 22, 1912.

1. DIMELIN: Anatomophysiological Study of Uterine Muscles.
2. ROUCAYROL: Geometric Action of Electrolytic "Deterger" on Mucous Membranes.
3. A. SCHWARTZ: Clinical Examination of Hip.
4. DOPFER: Bacterial Analysis of Cerebrospinal Fluid.
- June 29, 1912.
5. P. CARNOT: Subcutaneous Injection of Purgatives.
6. EIJKMANN: Symphaneity (symphane).
7. PHÉLIP and BONNET-ROY: Treating Diaphyseal Fractures of Humerus by Continuous Extension.
8. GOUGEROT: Treatment of General Disseminated Psoriasis.

3. **Examination of Hip.**—Schwartz's clinical lecture on a supposedly injured hip, beside laying stress on the usual procedures, advises never to omit rectal palpation, by which means fractures of the acetabulum may be detected that might otherwise escape discovery.

5. **Purgatives Subcutaneously.**—Carnot says this method has many advantages, smallness of dose, prolonged action, no effect on the digestive organs. On the other hand, it may cause local or general reactions of some severity. The choice of purgative should depend upon knowledge of its action on a given portion of the intestine. Carnot has used senna, cascara, phenolphthalein, and peristaltic hormone, principally in saline solution.

6. **Symphaneity.**—Eijkmann explains *symphaneity* (from which we have constructed *symphan-*

ity by analogy) as a method of examining stereoscopic roentgenograms by means of a special instrument fitted with magnifying lenses; this instrument he calls a *symphanator*. The roentgenograms are accurately reduced by a mechanical process.

8. **Treatment of Psoriasis.**—Gougerot advises, as usual, great patience. He gives arsenic and nuxvomica internally, and, if remineralization is required, calcium carbonate and phosphate. In indigestion, he administers sodium bicarbonate, phosphate, and sulphate. Locally he uses oil of cade, soap, zinc oxide, or precipitated sulphur with salicylic acid. For lesions about the face and scalp, he advises sulphur, camphor, salicylic acid, oil of cade, zinc oxide, in petrolatum; or calomel in petrolatum; or the yellow oxide of mercury; or turpeth mineral. A sharp lookout should be kept for drug irritation of the skin.

PRESSE MÉDICALE.

June 19, 1912.

1. OULMONT and BODIN: Acquired Hemolytic Icterus with Hypocholesterinemia.
2. JUAN GALAP: Lithemia (arthritisme), Diathesis of Anaphylaxis.
- June 22, 1912.
3. CH. LESIEUR: Renascence of Humorism.
4. JAVAL and BOVET: Physicochemical Study of Body Liquids.
- June 26, 1912.
5. A. SOUQUES: Infantilism and Deficient Internal Secretion of Testicle.
6. H. ROUVIER: Interpterygoid Aponeurosis: Relations with Inferior Maxillary Nerve.
- June 29, 1912.
7. F. JAYLE: Hôpital de la Pitié

1. **Hemolytic Icterus.**—Oulmont and Boidin's case was that of a woman of thirty-seven years with a syphilitic history. Their general conclusion is that this case, considered along with others of varying symptomatology, permits the opinion that there is a definite relation between the globular resistance and the extent of cholesterinemia. Their patient's blood count was much improved by the administration of cholesterin, pure and in foods.

2. **Lithemia.**—Galup recalls the mysterious apparent relation between diabetes, obesity, gout, lithiasis, chronic rheumatism, etc., and the susceptibility of patients to nervous overexcitement, congestion, and sclerosis. He would define lithemia as a diathesis of anaphylaxis, brought about by successive slight intoxications, principally alimentary. We may recognize various types, tuberculous, syphilitic, mixed, each presenting characters derived from its own toxic agent. Such a theory ought to prove fruitful in valuable therapeutical suggestions.

3. **Humorism Born Again.**—Lesieur's scholarly paper is devoted to the ancient theory of peccant humors and the truths that were imbedded therein; he expresses the hope that recognition of their value will not mislead us into the old superstitions concerning hidden forces and vital and animal spirits.

5. **Infantilism and Insufficient Internal Testicular Secretion.**—Souques defines infantilism as a somatic syndrome, due to functional insufficiency of the interstitial genital gland, and essentially characterized by atrophy of the generative organs and absence of the secondary sexual phenomena in an individual over the age of puberty. He puts the origin back into the embryological stage of development and speaks of the result as an individual like the Hermaphroditus of Polydes, or one of

whom Gautier said that men called it Venus and women called it Cupid. The abnormality has been attributed by some authors to thyroid deficiency, by others to deficiency in all the endocrin glands, but Souques insists that, whatever condition may be found in other glands, there will always be noted in these cases insufficiency of the internal testicular secretion. He refers to the well known effects of castration before puberty as corroborative. Eunuchs have abnormally long legs, a similar condition being known to veterinarians as a result of altering very young animals. Myxedema and ablation of the hypophysis bring about parallel conditions, but always there is the testicular trouble. The glandular construction of the testicle is twofold, one assisting in reproduction, the other, an interstitial gland, being the organ of morphogenesis. Injections of the testicular liquid of a cryptorchid pig into a capon have made the latter over into a bird resembling in appearance a complete cock, with its crow and its combative disposition. Similar experiments have produced in castrated frogs the secondary sexual characteristics of the complete male at the spawning period. It is doubtless, according to Souques, the internal secretion of the testicle that produces the male characters, and not the semen, as was once believed.

LYON MÉDICAL.

June 9, 1912.

1. DESGOUTTES and REYNARD: Simple, Chronic Ulcer of the Bladder.

June 16, 1912.

2. FINCK: Technique of Sphygmomanometry.

1. **Simple, Chronic Ulcer of Bladder.**—Desgouttes and Reynard summarize the literature of this condition and report two cases of four and twelve years' standing, respectively, in both of which operation led to complete recovery. In addition to the various types of secondary vesical ulceration, it should be kept in mind that there are cases in which the ulcer is primary and progresses independently. Its cause or causes are unknown. The diagnosis is often somewhat difficult and demands a careful cystoscopic examination. Though even a very small ulceration may lead eventually to serious consequences, the prognosis is good if early, energetic treatment is carried out. The latter should consist of suprapubic incision, and cauterization, scraping, or better, excision of the ulcer.

2. **Sphygmomanometry.**—Finck lays stress on the prognostic importance of taking into account the ratio between the observed systolic and diastolic pressures. Where the ratio of the former to the latter is less than 1.5, circulatory equilibrium may be considered to be disturbed and the prognosis is rendered less good. The author then goes over the fundamental principles of sphygmomanometry from the standpoint of the type of instrument used, explains his reasons for preferring the oscillatory method of ascertaining the systolic and diastolic pressures, and describes a new form of arm cuff he has devised in order to show more definitely than with the usual type the exact moment at which the systolic reading should be taken. The cuff contains two air chambers, the upper one twelve cm., the lower only four cm. in diameter. The former serves actually to measure the pressure, while the

latter enables the operator to distinguish clearly the first pulsations which pass beyond the upper chamber from those which merely indent it from above and cause oscillations otherwise not distinguishable at any definite moment from those produced when the blood passes beyond the cuff into the radial artery. Finck finds this cuff superior to those already constructed with two air chambers of equal width, which give results even less good, in his estimation, than those obtained with the old method of palpation of the radial. He condemns both the palpation and auscultatory methods on account of the personal element involved.

CENTRALBLATT FÜR ALLGEMEINE PATHOLOGIE UND PATHOLOGISCHE ANATOMIE

May 15, 1912.

1. G. L. VON HEUMEN: Modification of Weigert's Rapid Paraffin Method.
2. M. KONOPACKI: Congenital Atresia of Esophagus: Study of Development of Human Trachea.
3. Report of the Fifteenth Meeting of the German Pathological Society.

May 31, 1912.

2. **Congenital Atresia of the Esophagus.**—Konopacki reports in detail a case of atresia of the esophagus associated with atresia ani and other defects. The esophagus extended to about the eighth or ninth cartilage ring of the trachea, at which point it ended in a blind pouch. By means of diagrams the author shows the probable formation of this anomaly, i. e., that it is an incomplete separation along the *anlage* of the esophagus, trachea, and bronchi, and not an obstruction or atrophy.

ZENTRALBLATT FÜR CHIRURGIE

June 20, 1912.

1. E. BORCHERS: Supraclavicular Anesthesia of Brachial Plexus.
2. W. WOLF: Drainage by Suturing Apart Margins of Wound.
3. PREISER: Typical Fracture of Scapula.

1. **Supraclavicular Anesthesia of the Brachial Plexus.**—Borchers advises finding the place on the anterior side of the neck, where the brachial plexus, together with the subclavian artery, passes over the first rib, then to feel along the artery until the point is found where it passes beneath the upper margin of the clavicle. The needle of the syringe is then introduced in a direction toward the spinous process of the second or third dorsal vertebra slowly until the patient feels an itching in the arm, a depth of from 1.5 to three cm. Then and not before, ten c. c. of a two or three per cent. solution of novocain and adrenalin is injected. Care must be taken not to make the injection until the patient feels the itching, usually in the fingertips, and not to make it too far laterally for fear of wounding the artery, although if the artery is wounded, he considers it of no consequence. The anesthesia begins in three to thirty minutes, according to the strength of the solution, and the distance from the nerves the solution is injected, and lasts from 1.5 to two hours. The muscles are rendered paretic to a degree proportional to that of the anesthesia. The anesthesia is usually of the entire arm, but sometimes a narrow strip from the axilla to the elbow on the posterior inner side of the arm, supplied by the nervus cutaneus brachii medialis, has its sensation more or less preserved. Borchers considers this to be the preferable method for all operations on the fingers, hand, forearm, and

arm when otherwise general anesthesia would be needed.

2. Drainage by Suturing Apart the Margins of the Wound.—Wolf recommends, in order to avoid the accumulation of secretion beneath the skin after small wounds have been made in operation, to hold open the wound at a certain point by the introduction of two skin sutures placed perpendicularly to the incision. This provides for drainage for three or four days, when the sutures are removed and the aperture allowed to close.

ROUSSKY VRATCH.

March 31, 1912.

1. M. D. TUSHNETSKY and G. A. IVASHENKOFF: Wassermann Reaction in Hospital Practice.
2. E. A. ZHEBEROVSKY and E. PH. BRAKOVSKY: Effect of Dubnik Spring "Nasha" on the Secretion of Gastric Juice.
3. A. N. RUBEL: Treatment of Pulmonary Tuberculosis with Kumys.
4. M. D. SOROKOFF: Casuistics of Granulations on Ocular Conjunctiva.
5. A. V. BUKHSHOFF: Fate of Salvarsan in the Organism.

5. Fate of Salvarsan.—Burnashoff concludes from experiments performed on rabbits that salvarsan is rapidly changed in the circulation, forming organic and inorganic combinations of arsenic. Following the introduction of salvarsan into the circulation, it is rapidly deposited in the various organs, principally the liver, bones, muscles, and gastrointestinal tract. During the first twenty-four hours the blood contains about nine per cent. of the arsenic. It is found in smaller quantities in the spleen, kidneys, and lungs; and, in traces, in the heart, brain, and eyeballs. Arsenic is gradually deposited in the skin and hair, reaching the maximum (twelve per cent.) on the third week. In the course of time the arsenic contents in the various organs is diminished, so that in three weeks after the administration of salvarsan only traces can be found, except in the skin and hair. In three months all traces of arsenic disappear from the organism. The main channels of elimination are the gastrointestinal tract and the kidneys. Small quantities are excreted by the skin, mammary glands, and lungs. In pregnant rabbits, following intravenous administration of salvarsan, arsenic passes in small quantities into the placenta and fetus. In testing the organs of animals for arsenic, it must be remembered that the organs of normal animals may contain traces of arsenic which is derived from the food, such as cabbage, carrots, etc.

ANNALS OF SURGERY

May, 1912.

1. J. C. BLOODGOOD: Estimation of Vital Resistance of Patient with Reference to Possibility of Recovery.
2. J. M. T. FINNEY: Wiring Otherwise Imperable Aneurysms.
3. R. A. HIBBS: Further Consideration of Operation for Pott's Disease.
4. ELLSWORTH ELLIOT, JR.: Acute Perforation of Gastric and Duodenal Ulcer.
5. H. H. M. LYLE: Le Rhumatisme tuberculeux (Poncet).

1. Estimation of Vital Resistance of Patient with Reference to Recovery.—Bloodgood asserts that the estimation of the factors of safety during operation and the condition of the patient directly after the operation depends upon the blood pressure apparatus; in the last year he took blood pressure records, before, during, and after all operations, with a result that the records gave him the exact condition of the patient. Before operation the blood pressure cannot always be depended upon. The estimation of the function of the kidney is next of

importance. The general practitioner should make an earlier diagnosis, then it would help the surgeon. He should be present at the operation, to add confidence to the patient, should see the patient after operation, and should take charge of him after the danger of postoperative complications is over. As we wish the patient to be permanently relieved the surgeon must check up his patients annually, and in those cases, which he has not permanently relieved, ascertain, if possible, the cause, in order to improve his future results.

3. New Operation for Pott's Disease.

Hibbs's operation is for the purpose of producing a fusion of the posterior aspects of the vertebrae, to obliterate motion of the vertebral articulations over the diseased area, and to relieve pressure on the involved bodies, thereby hastening a cure and preventing deformity. The strength and functional sufficiency of the new and continuous bone splint covering the vertebrae have been demonstrated.

4. Acute Perforation of Gastric and Duodenal Ulcer.

—Elliot, Jr., says that probably the strongest plea in favor of adding a gastroenterostomy to the closure of a perforation is that such a measure affords permanent relief from the persistence or recurrence of ulcer symptoms. He positively proves this assertion by his collection of thirty-six cases. The supposed disadvantages are numerous, such as the condition of the patient, prolongation of the operation with accompanying shock due to handling of the intestine, inexperienced operators, etc.

5. Le Rhumatisme Tuberculeux (Poncet).

Lyle says that Poncet and his pupils of the Lyons school hold that tuberculosis is a very common cause of rheumatism, advancing bacteriological, pathological, and clinical proofs. Lyle further says that, according to Courmont and Vallery, from twenty-five to thirty per cent. of sciatica patients clinically are tuberculous, and ninety-one per cent. of them react to serodiagnostic means.

ARCHIVES OF INTERNAL MEDICINE.

May, 1912.

1. WILDER TILESTON: Diagnosis of Complete Absence of Pancreatic Secretion from Intestine, with Results of Digestion and Absorption Experiments.
2. C. H. BAILEY: Value of Absorption Methods in Wassermann Test.
3. E. C. DICKSON: Further Report on the Production of Experimental Chronic Nephritis in Animals by Administration of Uranium Nitrate.
4. JOHN H. MEISSER, JR.: Experimental Study of Changes in the Blood Following Splenectomy.
5. JOSEPH L. MILLER and DEAN L. LEWIS: Periodicity of Experimental Glycosuria Following Injections of Extracts of Hypophysis.
6. RICHARD DEXTER and C. L. CUMMER: Occurrence of Native Sheep Anthrax in Human Serum and Its Importance in the Performance of Wassermann Reaction.
7. JAMES ALEXANDER MILLER and MARGARET A. REED: Studies of Leucocytes in Pulmonary Tuberculosis and Pneumonia.

1. Absence of Pancreatic Secretion from Intestine.

—Tileston reports six cases and adduces other evidence to support his contention that complete absence of pancreatic secretion from the intestine is usually easily demonstrable, simply by inspection and microscopical examination of the feces. Five of his cases showed macroscopic fat in the feces,—in three instances in the shape of butter stools and in the other two as creamy masses. For the detection of fat it is only necessary that the stools be examined frequently while the patient is on a diet fairly rich in fat, preferably butter, cream, eggs, or olive oil, and that the stools when formed

be cut across with a knife, as the fat is sometimes present only in the interior of the fecal masses. Other features diagnostic of absence of pancreatic secretion are: Bulky stools, usually of a mushy consistence; the presence of microscopic neutral fat in large amounts, and creatorrhea, or the presence of undigested muscle fibres. Diarrheal diseases might also show an excess of neutral fat, but they can be excluded through the lack of watery discharges and by measuring the time of passage of the stool through the alimentary canal after administration of a capsule containing carmin, the time being normal in pancreatic disease and shortened in diarrhea. In a study of the digestion and absorption of fats in six cases, complete absence of pancreatic juice was found to interfere greatly with the absorption of fat and of nitrogen. The splitting of fats was usually normal, though sometimes decreased. Saponification is almost always much diminished, and the fatty acids always exceed the soaps. Exclusion of both bile and pancreatic juice causes a considerably greater loss of fat and a somewhat larger nitrogen loss than where the pancreatic juice alone is excluded. In the absence of icterus, a fat loss of forty per cent. or over, and a nitrogen loss of over thirty per cent., point to pancreatic disease, provided that diarrheal diseases, amyloid, and tuberculosis of the intestine, and tuberculosis of the peritoneum and mesenteric lymph nodes are excluded. If icterus is present, a fat loss greater than fifty per cent. favors pancreatic disease. The amount of the fat splitting has usually but little diagnostic importance, though a very great reduction suggests pancreatic disease. An excess of soaps over fatty acids renders complete absence of the pancreatic juice very improbable. By administration of raw pancreas, or of pancreatic preparations, the absorption of fat and nitrogen can be greatly improved. In a case in which both gastric and pancreatic secretions were deficient the absorption of nitrogen was considerably increased by administration of hydrochloric acid and pepsin, though not as much as by pancreatic preparations.

2. Absorption of Antisheep Amboceptor in the Wassermann Test.—Bailey recalls that since the discovery of the existence of an antisheep amboceptor in some human serums it has been a question whether this additional amount of amboceptor might not suffice to produce hemolysis in conjunction with a small residue of complement not fixed in the first stage of the reaction, and negative results thus be obtained in syphilitic cases. From a large series of tests and experiments, Bailey concludes that it is possible for antisheep amboceptor in human serum to affect the Wassermann reaction, but that when an antigen of high titer is used this is possible only with serums of very low antibody content and several units of antisheep amboceptor. As a routine procedure, the absorption of amboceptor is unnecessary. Its removal is advisable, however, from serums giving a negative or doubtful reaction and containing a large amount of antisheep amboceptor. This was accomplished as follows: To 0.5 c.c. of the patient's serum, after inactivation, was added 2 c.c. of 0.85 per cent. salt solution and 0.1 c.c. of sheep cells. After shaking, the mixture was incubated at 37° C. for twenty minutes. The cells were

then centrifuged off and the supernatant fluid used in the Wassermann reaction, 0.5 c.c. of the diluted serum being used in the tube with antigen and one c.c. in the control tube without antigen, the amount of antigen, complement, etc., being correspondingly reduced to one half the usual quantity. It was found to be immaterial whether the digestion with sheep cells was done at 0° C., 37° C., or at room temperature.

3. Experimental Uranium Nitrate Nephritis.—Dickson found that by means of uranium nitrate it is possible to produce a chronic diffuse nephritis in rabbits and dogs as well as in guineapigs. The histological picture of the lesions is characteristic, and is analogous to that found in chronic diffuse nephritis in man. Even in the most severe cases there are no demonstrable arterial lesions, although the mode of development suggests that there must be some functional vascular damage. After prolonged administration to guineapigs a terminal attack of acute nephritis is frequently accompanied by more or less marked anasarca. With the more severe lesions there occurs often hypertrophy of the left ventricle of the heart.

4. Blood Changes Following Splenectomy.—Musser, Jr., analyzing the reported cases of splenectomy in man, finds that in the majority of instances a marked leucocytosis is present after the operation and persists for a year or more; often a pronounced secondary anemia occurs, in which the color index is normal as a rule; there is also lymphocytosis, without much change otherwise in the differential count. In a small minority of cases, however, these changes are not found. Splenectomy performed by the author in three dogs caused uniformly: 1. Secondary anemia, lasting about two and a half months. 2. Postoperative leucocytosis, most marked twenty-four hours after operation and lasting a variable time—138 days or longer. 3. Total absence of eosinophiles from about the third to the eleventh week, followed by a rather pronounced eosinophilia. 4. Decrease and later increase in the number of large mononuclears and transitional forms, the lymphocytes and polynuclears being proportionally increased and later decreased. Because of the secondary anemia, pronounced at times, and seen both in man and animals, Musser believes that the operation of splenectomy must be considered more seriously than heretofore; or, at least, measures for the conservation of the general health of the patient and the regeneration of the blood must be kept in mind.

5. Glycosuria Following Injection of Extracts of the Hypophysis.—Miller and Lewis injected thirty small dogs with pituitary preparations, fifteen with extracts of the anterior lobe, and the same number with extracts of the posterior lobe. Several urines contained a reducing substance, but only three proved to contain sugar. Two of these animals had received injections of dried anterior lobe and one an extract from the posterior lobe. In all three the injections had been given intraperitoneally. The glycosuria was always transitory, disappearing within twenty-four hours. It is doubtful whether it was due to the specific action of the extract on sugar metabolism. The tremor, marked respiratory symptoms, and intestinal disturbance following the injection were sufficient to account for it.

7. Leucocytes in Pulmonary Tuberculosis and Pneumonia.—Miller and Reed, in some preliminary work, studied the effect of various agencies, such as bacterial inoculations, contamination of the blood, and injection of snake venom, on the neutrophilic blood picture, with the object of gaining new information upon the fundamental principles and significance of Arneth's blood picture. They conclude that the neutrophile cell reacts quickly and definitely to its environment, this reaction being indicated by the number of lobes of the nucleus. The presence of neutrophils having a nucleus with more lobes than normal indicates some reaction to an environmental change such as the presence of a toxine or bacilli, while neutrophils with nuclei having fewer lobes than normal indicate either that these cells are being used up so that only those in the younger stage are left in the circulating blood, or that those entering the blood fail to undergo the customary change. Observations of the leucocytes were made in seventy-eight cases of pulmonary tuberculosis and forty cases of pneumonia. The study of these cells gives valuable information in the prognosis and clinical course of tuberculosis. In the diagnosis of incipient cases it is useless, but in deciding whether more acute pulmonary lesions are due to tuberculosis or some other infection it is sometimes helpful. Arneth's differential neutrophile count is important. In general, the following leucocytic changes occur in cases of pulmonary tuberculosis that are progressively doing badly or are in an exacerbation of the disease: (a) Leucocytosis; (b) increased percentage of neutrophils; (c) diminished percentage of small lymphocytes; (d) diminished percentage of eosinophiles; (e) marked shifting to the left of Arneth's blood picture. Conversely, opposite changes on any of these factors are favorable. In pneumonia, leucocytosis occurs as frequently in fatal cases as in those ending in recovery. It is due to the increased number of neutrophils, and when the latter is excessive a very severe infection is indicated. Arneth's differential count shows a constant shifting to the left, but bears no relationship to the clinical course of the disease.

BULLETIN OF JOHNS HOPKINS HOSPITAL.

May, 1912.

1. J. M. LUNE: Effect of Extensive Resections of Small Intestine.
2. W. W. DUKE: Behavior of Blood Platelets in Toxemias and Hemorrhagic Disease.
3. FRANK P. ALVEOLAR Tumors of Carotid Gland with Sarcomatous Transformation.

2. Behavior of the Blood Platelets in Toxemias and Hemorrhagic Disease.—Duke, in studying thirty-one cases of hemorrhagic disease, makes special mention of the platelet count, using what he terms the bleeding time. This must not be confounded with the coagulation time, a term which denotes the rate at which the blood clots. The variation in the platelet count in many diseases is largely the effects of toxins, some of which in small doses increase the count and in large doses decrease it. When the count descends below sixty thousand, there may be an abnormal tendency to bleed. When it descends below ten thousand this tendency is always present, and when below one thousand is present in its most severe form.

3. Alveolar Tumors of the Carotid Gland with Sarcomatous Transformation.—Fee recalls that

these glands derive their surgical importance from the fact that they are so closely related to the carotid arteries, the deep jugular vein, and such important nerves as the sympathetic hypoglossal, lingual, and vagus, and this intimate connection with the carotids necessitates ligation of these vessels in about sixty per cent. of the cases. Then, too, any or all of the above named nerves may be injured or completely severed during the operation. Tumors of this gland are not easily diagnosed, and they have been mistaken for enlarged lymphatic glands, lipoma, and even goitre.

JOURNAL OF BIOLOGICAL CHEMISTRY.

May, 1912.

1. E. H. WALTERS: Action of Trypsin. I. Hydrolysis of Casein by Trypsin.
2. T. BRADFORD ROBERTSON: Refractive Indices of Solutions of Certain Proteins. VII. Salmin.
3. ALBERT A. EPSTEIN and H. OLSAN: Effect of Lecithin upon Fermentation of Sugar by Bacteria.
4. H. C. SHERMAN and A. O. GETTLER: Balance of Acid Forming and Base Forming Elements in Foods, and Its Relation to Ammonia Metabolism.
5. T. BRADFORD ROBERTSON: Isolation of Oocytase, Fertilizing and Cytolizing Substance in Mammalian Blood Sera.
6. P. A. LEVENE and G. M. MEYER: Combined Action of Muscle Plasma and Pancreas Extract on Some Monosaccharides and Disaccharides.
7. P. A. LEVENE and G. M. MEYER: Action of Various Tissues and Tissue Juices on Glucose.
8. P. A. LEVENE and G. M. MEYER: Action of Leucocytes on Glucose.
9. P. A. LEVENE, W. A. JACOBS, and F. MEDIGRECEANU: Action of Tissue Extracts Containing Nucleosidase on Alkylmethylpentosides and Betamethylpentosides.
10. GEORGE F. WHITE and ADRIAN THOMAS: Absorption of Metallic Salts by Fish in Their Natural Habitat. I. Absorption of Copper by *Fundulus heteroclitus*.
11. CARL L. A. SCHMIDT and D. R. HOGLAND: Determination of Aluminum in Feeds.
12. CARL O. JOHNS: Researches on Purine. On 2,8-dioxy-6,9-dimethylpurin and 2,8-dioxy-1-methylpurin.
13. EDWARD B. METZ and L. A. RYAN: Chemical Analysis of the Ash of Smooth Muscle.
14. JACQUES LOEB: Toxicity of Sugar Solutions upon *rundulus* and Apparent Antagonism between Salts and Sugar.
15. W. R. BLOOR: Carbohydrate Esters of Higher Fatty Acids. III. Mannite Esters of Lauric Acid.
16. W. R. BLOOR: Fat Absorption.
17. J. F. MCCLENDON: Echinochrome, a Red Substance in Sea Urchins.

1. Action of Trypsin.—Walters, investigating the hydrolysis of casein by trypsin, found that the velocity with which "basic" sodium caseinate is hydrolyzed is directly proportional to the concentration of the ferment. There is a general proportionality between the concentration of the substrate and the velocity of hydrolysis, although the velocity constant decreases slightly as the concentration of the substrate increases. The nature of the base combined with casein—lithium, sodium, potassium, ammonium, calcium, strontium, or barium—has little or no influence in the process of hydrolysis.

3. Lecithin and Fermentation.—Epstein and Olsan, using *Bacillus coli communis*, *Bacillus mucosus capsulatus*, and *Bacillus acidilactici* in their tests, found that free lecithin may modify the bacterial fomentation of sugars, and hence, oxidative processes. It increases the fermentation of some sugars and lessens that of others; the tendency is to increase rather than decrease fermentation. There is apparently no definite relationship between the action of lecithin upon sugars and their chemical composition.

4. Acid Forming and Base Forming Elements in Foods.—See editorial article in the JOURNAL for June 15th.

5. Oocytase.—Robertson recalls the fact that, as shown by Loeb, eggs of sea urchins can be induced to form a fertilization membrane by immer-

sion in the sera or tissue extracts of other animals. If these fertilizing fluids be derived from mammals, it is necessary first to sensitize the eggs by treatment with a sensitizing agent. The author finds that the sensitizing property is common to all of the alkaline earths, and that the same agent which sensitizes the eggs for fertilization also sensitizes them for agglutination. It appears probable that the fertilizing agent is not present as such in the circulating blood, but is derived from the breaking down of corpuscles in shed blood. The fertilizing agent is also thermostable, resisting an exposure of nineteen hours to a temperature of 58° C. It consequently appears to be analogous to the cytases or cell liquefying substances observed by Metchnikoff and others to be derivable from white corpuscles. Robertson suggests that this substance be termed oocytase.

6. Action of Muscle Plasma and Pancreas Extract on Sugars.—Levene and Meyer conclude that the muscle plasma combined with pancreatic extract possesses the power to cause condensation of only two closely related hexoses, viz., *d*-glucose and *d*-levulose, and that it remains without action on mannose, xylose, ribose, and lactose. The same enzyme mixture also has the power to bring about the hydrolysis of maltose, but not of lactose.

8. Action of Leucocytes on Glucose.—Levene and Meyer, conducting researches on this subject under absolutely aseptic conditions, found that under the influence of leucocytes, suspended in a sugar solution containing fifteen per cent. of the Henderson phosphate mixture, the sugar solution loses part of its reducing power. The latter cannot be restored to the original by boiling with mineral acids. The rate of glycolysis is in inverse proportion to the sugar concentration. If distilled water is employed in place of the phosphate mixture, or if toluol is added to it, the leucocytes fail to exert any influence on glucose. As product of the action of leucocytes on glucose, paralactic acid was discovered. The quantity of it found was lower than that of the disappeared glucose. Whether the missing sugar underwent decomposition into other substances than lactic acid, or was used for synthetic purposes by the leucocytes, remains to be established.

11. Determination of Aluminum in Feces.—Schmidt and Hoagland describe an accurate method of attaining this result, for the details of which the reader is referred to the original. The procedure is of especial use in the study of subjects receiving alum or the aluminum containing residue from baking powder. Determinations were made by the authors in individuals on a constant diet, but who did not receive any aluminum salt, with the result that aluminum was found to be excreted to the extent of 3 to 4 mg. per diem.

13. Chemical Study of Smooth Muscle.—Meigs and Ryan, in addition to determining the percentage, respectively, of potassium, sodium, iron, calcium, magnesium, phosphorus, chlorine, and sulphur present in the frog's stomach muscle, performed experiments which tended to show that the fibres of smooth muscle tissue are not surrounded by semipermeable membranes; that most of the water of the smooth muscle fibres is held by the

colloids of the living tissue as organic water; and that most of the potassium, phosphorus, sulphur, and magnesium, which appear in the ash of smooth muscle, are present in the living tissue in a non-diffusible form.

16. Fat Absorption.—Bloor thinks it to be generally accepted that, normally, most if not all of the food fat is saponified in the intestine before absorption, and is absorbed as soaps. The question, however, whether all fat must be split before absorption is still in doubt. For the purpose of elucidating the subject, Bloor performed experiments on dogs, using isomannid esters—especially suitable because they possess properties which allow of their being traced through the process of absorption. The results showed conclusively that none of the isomannid esters passed unchanged into the chyle, although digested and absorbed in considerable amount. This, taken in conjunction with the previous findings of Frank, tends to prove that readily saponifiable fatty acid esters do not escape saponification under favorable conditions in the normal intestine.

JOURNAL OF INFECTIOUS DISEASES.

May, 1922.

1. D. J. DAVIS: Changes in Influenza Pneumonia.
2. JEAN BROADBURST: Biometrical Study of Milk Streptococci.
3. C. E. A. WINSLOW: Classification of Streptococci by Their Action upon Carbohydrates and Related Organic Media.
4. P. G. HEINEMANN and J. J. MOORE: Experimental Therapy of Rocky Mountain Spotted Fever. Preventive and Curative Action of Serum for Spotted Fever, and Inefficiency of Sodium Cacodylate as Curative Agent for This Disease in Guinea-pigs.
5. M. R. SCHARFF: Experiments on Disinfection of Water with Ultraviolet Light: Discussion of the Laws of Disinfection.
6. G. H. WEAVER and RUTH TUNNICLIFFE: Study of Action of Antistreptococcus Serum in Streptococcus Infections in Man.
7. L. W. FAMILLETTER: Transmission of Immunity from Mother to Offspring. Serum Hemolysis in Goats.
8. D. L. HARRIS: Properties of Desiccated Rabies Virus and Use in Antirabic Immunization.
9. J. H. RASILE and D. J. HEALY: Calcium Salts and Onset of Labor.
10. G. F. DICK: Development of Proteolytic Ferments in Blood during Pneumonia.
11. A. L. GROVER: Outbreak of Typhoid Fever in Cedar Falls, Iowa.
12. JANE L. BERRY and LOUISA F. BLACKBURN: Comparative Toxin Production in Diphtheria Strains.
13. JANE L. BERRY and E. J. BANZHAF: Nonvariability of Diphtheria Bacilli.
14. P. G. HEINEMANN and L. C. GATEWOOD: Concentration of Antistreptococcal and Antigonococcal Sera.
15. G. N. CALKINS, F. D. BULLOCK, and G. L. ROHDENBURG: Effects of Chemicals on Division Rate of Cells with Especial Reference to Possible Precancerous Conditions.

4. Rocky Mountain Spotted Fever.—Heinemann and Moore found that horses are susceptible to spotted fever if the virus of guinea-pigs is injected subcutaneously and intravenously, and also that the serum from horses recovered from spotted fever has protective value. The potency is greatest about twelve days from the time of the reappearance of normal temperature. Repeated injection of spotted fever virus increases the potency of the serum materially, but does not produce a second attack of spotted fever. This serum can be concentrated so that one tenth of the original bulk will possess the original value. If guinea-pigs are injected with spotted fever virus and immune horse serum separately into the peritoneal cavity, they will acquire an immunity lasting for at least four weeks. It was noted that one c.c. of immune horse serum protects guinea-pigs injected with spotted fever virus up to and including the first day of high temperature. If the serum is given later there is no protection. If guinea-pigs, injected with spotted fever virus, are treated every day with

sodium cacodylate, beginning with the first appearance of fever, no effect is had on the course of the disease.

5. Disinfection of Water with Ultraviolet Light.—Scharff, as a result of his experiments, believes that disinfection by ultraviolet light would be applicable to surface waters containing vegetable coloring matter only if the color was first removed by coagulation or filtration.

6. Antistreptococcus Serum in Streptococcus Infections in Man.—Weaver and Tunncliffe, in earlier studies of antistreptococcus serum, found that the blood serum of persons with streptococcus infections, although it might be deficient in streptococcus opsonin, was still able to activate antistreptococcus horse serum. From this it was inferred that antistreptococcus serum would probably have immunizing and curative action against living streptococci in man. The present article has to do with some studies of phenomena arising after injections of antistreptococcus serum in patients infected with streptococci. In six cases of erysipelas recovery occurred and visible improvement usually began about twenty-four hours after the serum was given. The improvement was shown by falling temperature, recession of the local swelling, subsidence of delirium, and betterment in the general condition. That the rapidly favorable outcome was not accidental was further indicated by the concurrent increase of streptococcus opsonin above that observed in untreated cases.

7. Immunity Transmission from Mother to Offspring.—Famulener, in his introduction, calls attention to the fact that the inheritances by the progeny, of newly acquired biological qualities from either or both parents has been a question of long standing. Certain tendencies to disease were considered to be transmissible from parents to offspring (inherited). On the other hand, observations were recorded of cases where the mother, shortly after having recovered from a disease, gave birth to a child, and the child upon exposure to the same disease showed resistance against the disease. For his experiments the author used pregnant goats, injecting them with sheep corpuscles in order to obtain the specific hemolytic immune body. It was found that: 1. Goats actively immunized against sheep blood corpuscles during gestation passively transmitted the specific hemolysin to their young. 2. The colostrum was the chief agent in bringing about the passive immunization of the suckling. 3. When the immunization was done during the period of gestation the colostrum contained a high content of specific hemolysin, often much higher than the adult's serum, at the time of parturition. 4. The hemolytic antibodies rapidly disappeared from the milk after the mother had been suckled by the young. 5. In the blood taken from the newly born before they were permitted to suckle, the antibody colostrum showed no appreciable amount of hemolysin by the test used. The placenta played a minor rôle in the passage of hemolysins to the young before birth, practically negligible in most cases. 6. Mother goats, actively immunized against sheep blood corpuscles immediately after the birth of their young, failed to transmit any demonstrable immunity to their suckling young. 7. The milk, in some cases,

contained no demonstrable hemolysins, but in others showed fairly large amounts. Apparently a very high degree of immunity is necessary before appreciable amounts of antibodies are excreted through the milk.

8. The Properties of Desiccated Rabies Virus.—Harris gives an interesting report of a method for the preservation of rabies virus by desiccation and gives the following summary. He finds that rabic material may be completely desiccated without destruction of virulence, provided the dehydration takes place at a low temperature. The lower the temperature, the greater will be the amount of virulence preserved, and it is noted that the desiccated virus contains as much infectivity as the fresh virus. When properly preserved the loss of virulence is so slow that the material may be standardized, permitting an accuracy of dose hitherto impossible. The unit used is the smallest amount which, when injected intracerebrally into a full grown rabbit, will produce paresis on the seventh day.

10. Proteolytic Ferments during Pneumonia.—Dick makes the statement that in the pneumonic crisis we have an extremely rapid recovery, which, could it be brought about at will, would represent an ideal therapeutic result. In order to arrive at an understanding of the process, he undertook certain experiments in order to find out if protein splitting ferments were demonstrable in pneumonia. Proteolytic ferments develop in the blood during pneumonia about the time of crisis. These ferments seem to have a special action upon pneumococcus protein and may take part in the mechanism of the crisis.

11. Typhoid Fever in Cedar Falls, Iowa.—Grover concludes that, as all other possible causes can be ruled out, the city water was undoubtedly the cause of the outbreak in which there were about 200 cases with about ten per cent. of deaths.

15. The Effects of Chemicals on the Division Rate of Cells.—Calkins, Bullock, and Rohdenburg report some very interesting work concerning the effects of chemicals on the division rate of cells, dealing especially with possible precancerous conditions. From previous work the authors concluded that the power of regeneration is bound up with the accumulation of some product of metabolism which reaches a condition analogous to saturation just before division and is exhausted by the process of regeneration involved in the reconstruction processes after division. This led to the further hypothesis that division itself might be bound up with the accumulation of some product of metabolism. The experiments on protozoa and on mammalian tissues have been carried out under the stimulus of a more general, more neglected, and, as they believe, a more probable hypothesis than any other, which may be outlined as follows: As a result of abnormal, local, metabolic conditions, brought about by injury, by chronic irritation, by parasites, or by other causes, products of autolysis are formed which stimulate the division energy of latent cells. This is ordinarily held in check by the regulatory processes of the organism, but with continued irritation the division energy outruns the regulation of the organism and a tumor results.

The development of cancer, with the inevitable train of degenerating products overrunning the regulatory control of the organism, is continued through the activity of the cumulative products of cell autolysis, the degeneration of cancer cells thus producing the stimulating agents for further and more widespread development. On this theory they find it possible to interpret all kinds of tumors. The obvious weak point is the transition of a reparative process subject to the control of the organism, to a malignant process uncontrolled and unregulated.

NEW YORK STATE JOURNAL OF MEDICINE.

June, 1912.

1. G. E. DE SCHWEINITZ: Prevention of Blindness and Instruction of Blind Child.
2. G. H. MARVEN: Prevention of Deafness and Instruction of Deaf Child.
3. HENRIE FOLKES: Present Status of Movement for Prevention of Tuberculosis in this State.
4. A. W. FERRIS: Prevention of Insanity.
5. W. S. BRYANT: Occupational Diseases of Ear, Nose, and Throat.
6. G. R. SATTERLEE and L. T. LE WALD: Water Trap Stomach: Symptomatology, and Treatment.
7. G. DRAPER: Acute Poliomyelitis.
8. F. KENNEDY: Diagnosis of Epidemic Poliomyelitis in Preparalytic Stage.
9. F. W. PEARBODY: Pathology of Acute Poliomyelitis.
10. D. E. HOAG: Treatment of Infantile Spinal Paralysis.
11. W. R. TOWNSEND: Prevention and Correction of Deformities by Mechanical Treatment.
12. H. L. TAYLOR: Surgical Treatment of Deformities and Disabilities Following Poliomyelitis.
13. C. L. GIBSON: Rupture of Kidney in Children.
14. S. J. BAKER: Value of Municipal Control of Child Hygiene.
15. R. L. CROCKETT: Real Things in Health Officer's Life.
16. C. F. ABBOTT: Coquetage.

1. Prevention of Blindness.—De Schweinitz enters upon a discussion of the more common causes of blindness in children and, under the topic of the instruction of the blind child, he remarks that, quite contrary to the common belief, the blind child is less sensitive in his other faculties than is the normal child. He believes that, in view of this difference, much would be accomplished if each institution had a psychological laboratory and a trained psychologist to study the mental capacities of the children. Such a psychologist could render signal service by the study of such problems as the proper classification of the blind children according to their degree of mentality, the effect of partial sight, the bearing on the future careers and education of the children, the age at which they become blind, exercises, the differences between those who have always been blind, or who have been blind from early childhood, and those who become blind later in life, the quality of the sensitiveness of the unaffected senses, and the like.

5. Occupational Diseases of the Ear, Nose, and Throat.—Bryant enumerates thirteen etiological factors of these affections and gives a list of sixty different occupations which expose those who pursue them to one or other of these causative factors.

7-12. Acute Poliomyelitis.—These six papers together with the discussion which is published at their conclusion go to make up a symposium upon this disease and serve to acquaint the physician with the latest developments in our knowledge of poliomyelitis, its symptomatology, what is known of its etiology, its diagnosis, pathology, and, what is more important than all from the point of view of the afflicted, the treatment of the disease in its acute stages and the surgery of its resulting deformities. A perusal of these articles will well repay the reader

for the time spent. Their extensive scope and close association render their presentation in the form of an abstract quite impossible.

BRITISH JOURNAL OF DERMATOLOGY.

May, 1912.

1. SIR MALCOLM MORRIS: Physicotherapeutic Methods in Dermatology.
2. J. M. H. MACLEOD: Report of Seventh International Dermatological Congress: Rome, April, 1912.

1. Some Physicotherapeutic Methods in Dermatology.—Morris, in reviewing the physical methods employed in dermatology at the present time, i. e., x rays, radium, Finsen light, and freezing, states that none possesses all the properties that the enthusiastic advocates assert; that either singly or in combination they are serviceable in the highest degree in early rodent ulcers of the very superficial types, in trichophytosis of the hairy parts, in favus, in lupus vulgaris, and small tuberculous glands, in lupus erythematosus, in certain kinds of naevi, and in scars and keloids. In these affections they are far superior to other forms of treatment, medical or surgical. They are useful in the later rodent ulcers, in the superficial carcinomata, and in varying degree, in bacterial infections, in hyperidrosis and hypertrichosis, in chronic eczema, in pruritis and lichenification, and in papillomata. Their use has also given relief in the more serious diseases as, Paget's, deep seated carcinomata, sarcoma, mycosis fungoides, and leprosy.

PROCEEDINGS OF THE ROYAL SOCIETY OF MEDICINE.

April, 1912.

1. FELIX ROOD: Ether Infusion Anesthesia.
2. E. G. FEARNSIDES and J. H. SEQUEIRA: Double Cervical Ribs Associated with Vascular Phenomena Suggesting Raynaud's Disease.
3. H. BORDIER: Radiotherapeutic Treatment of Uterine Fibroma.
4. ARTHUR F. HEZ: Functional Hourglass Stomach.
5. CLIFFORD WHITE: Fetus with Congenital Hereditary Graves's Disease.

(Titles of the seventy-seven other contributions in this periodical cannot be given because of space limitations.)

1. Ether Infusion Anesthesia.—Rood summarizes the disadvantages of inhalation anesthesia as follows: 1. It limits one entirely to the use of highly volatile substances; other nonvolatile products might be found that would be even better adapted for anesthetic purposes than those now in use. 2. Since the anesthetic is absorbed from the vapor introduced in the air passages, the dose actually entering the blood is variable, being subject to all the accidents of laryngeal spasm, of respiratory spasm, and of variations in the depth of respiration. 3. The exposure of the respiratory tract to an irritating vapor is a serious drawback. 4. The absorption of the drug by the patient cannot be stopped abruptly, but must go on until the patient has rid himself of the vapor which fills his lungs and of the anesthetic sodden mucus in his bronchial tubes and stomach. 5. In operations on the mouth, jaws, or pharynx the labors of the surgeon are made much harder by his having to share the field of operation with the anesthetist. By direct administration of an anesthetic by the blood all these difficulties are disposed of. Rood has given ether infusion anesthesia in 136 cases, using a five per cent. solution of the anesthesia in normal saline and an apparatus provided with an indicator, rendering possible a very precise control of the inflowing stream. One of the veins of the arm is generally

selected to receive the cannula; the introduction of the latter must be carried out with the strictest aseptic precautions. Induction of anesthesia is usually quite smooth and rapid, three or four minutes being the average time. Struggling is rare. The chief features of the anesthesia are regularity and smoothness, the ease with which it can be graduated and the great rapidity of response to slight alterations in dose. Of the 136 patients, only six vomited, and of these, three had swallowed blood during the operation. The advantages of the method were most striking in patients in a state of extreme inanition—e. g., those with abdominal malignant disease. These often left the table in much better condition than they had been before. In any case likely to be benefited by a saline infusion, either as a means of relieving shock or hemorrhage, or because shock is expected, the method has given excellent results. The results were good in acute abdominal conditions, especially in ruptured gastric or duodenal ulcer. Relaxation of the abdominal wall equal to that produced by any other anesthetic, excepting stavaine, could be obtained. In throat and nose operations in which a more or less vertical posture is essential, an even narcosis can be obtained without congestion or danger of syncope.

2. Double Cervical Ribs and Raynaud's Disease.—Fearnside and Sequeira report two cases of bilateral cervical rib associated with vascular disturbances resembling, at least in one case, those of Raynaud's disease. The first patient, subject since youth to attacks of "dead fingers" in cold weather, complained of pain in the left forearm shooting down to the hand, tingling in the finger tips of the right hand, and attacks of redness, blueness, and lividity of the whole left upper limb and the right hand, with local sweatings and general nervousness. Lividity, with vasomotor spasm and pain, were readily elicited by exposure of the left hand to cold. The small muscles of this hand and some of the forearm muscles had become weak and slightly wasted. The second patient exhibited merely a purplish mottling on both upper arms and the inner aspects of the forearms and hands, unaccompanied by pain or uneasiness. The authors advise examination of the neck by radiography in doubtful cases of Raynaud's disease.

3. Radiotherapy in Uterine Fibroma.—Bordier describes in detail his x ray technique in uterine fibroma. He gives from three to five series of irradiations, each consisting of nine separate sittings, the right flank, left flank, and median region being treated in turn on successive days. From twenty to twenty-five days are allowed to elapse between successive series of irradiations, and the aluminum filter interposed between the source of the rays and the patient is thickened at each series. The dose is controlled throughout by means of a platino-cyanide pastille. With these precautions all danger of early dermatitis or tardy trophic changes in the skin is avoided. With regard to the indications for the method, Bordier considers thirty-nine years to be the lower age limit for radiotherapy; patients below this age are better treated surgically, as to produce an artificial menopause in younger women would require too strong a dose of the rays and too prolonged a treatment, with resulting danger of

dermatitis. The interstitial type of fibroma is the most sensitive to the rays; multiple or pediculated fibromata should be treated surgically. The most satisfactory cases are those with abundant menorrhagia. Tumors of moderate dimension are the most favorable as regards reduction in size, though even large tumors projecting above the umbilicus have been reduced to the size of an orange. The treatment gives excellent results in the hemorrhages of the menopause; one or two series of irradiations suffice to produce the desired result. As regards contraindications to the x ray method, calcified myomata, tumors that have undergone necrobiotic degeneration, and malignant, infected, suppurating or gangrenous tumors should be reserved for surgical treatment. Cases complicated with suppurative salpingitis or pelvic peritonitis should also be operated in. At the termination of the x ray treatment, when practised, a considerable amelioration of general health is invariably observed.

4. Functional Hourglass Stomach.—Herz calls attention to the fact that although in every case of organic hourglass stomach the diagnosis can be made with far greater ease and certainty with the x rays than by any other method, a small number of cases has been reported, and a large number remains unrecorded, in which the diagnosis made after an x ray examination has not been confirmed at operation. This is due to the fact that an hourglass stomach may have a functional origin. The author believes there are at least three forms of functional hourglass stomach: 1. Spasmodic hourglass stomach, most frequently due to an ulcer, which is generally situated on the lesser curvature and may be quite small. Examinations at intervals of a few days show the contraction to vary in degree, and it can sometimes be caused to disappear by abdominal massage or vigorous contraction of the abdominal muscles. Spasmodic contraction does not prevent rapid filling of the distal end of the stomach while a meal is being taken, and never leads to peristalsis in the proximal segment, an important diagnostic point in the differentiation from an organic contraction. 2. Orthostatic hourglass stomach, a result of the coexistence of severe atony with gastropnoia, as it is present only when the patient is in the erect position. The passage between the fundus and dependent portion of the organ becomes progressively narrower, owing to the tension exerted by the weight of food in the lower segment, until finally the lumen is obliterated. Different from spasmodic contraction, this condition disappears if the patient lies down, and mistakes in diagnosis may be avoided through this fact. 3. Functional hourglass stomach due to adhesions, the result of an ulcer on the lesser curvature adherent to the left lobe of the liver. With the patient in the erect posture, a line of tension is produced diagonally across the stomach; the part of the organ immediately above this line tends to sag down, an appearance of hourglass stomach being produced. As with the last variety, the constriction disappears if the patient lies down.

5. Congenital Hereditary Graves's Disease.—White reports a unique case of this kind. The mother was a primipara, aged twenty-three years, in whom developed symptoms of the disease when

she was five months pregnant. The condition later became progressively more marked. The fetal heart rate at the onset of labor was not precisely countable, but was well over 200 a minute. Upon delivery the child exhibited all the features of the disease present in the mother. The eyes were prominent and staring, and the thyroid showed a well marked, uniform enlargement. The heart beats were uncountable, and a loud systolic murmur was heard over the precordium. There was also a fine tremor of the hands. The child remained markedly cyanosed and died thirty-four hours after birth. The thyroid, after removal from the body and hardening, measured 3.5 cm. transversely, 2.9 cm. from above down, and 2.1 cm. from before back. An accessory thyroid, eight mm. in length, was found on the thyroid cartilage under the root of the tongue. Histologically, there was the usual fetal absence of colloid, but well marked epithelial proliferation was evident; in addition, there were areas of degeneration such as are found in some adult cases, and also the typical increased height of the columnar cells. The suprarenals were rather large, but normal on microscopic examination. The heart was normal. White was unable to find record of any similar case in the literature, the youngest case of exophthalmic goitre reported being that of Ochsner and Thompson, in a child aged five months.

JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS.

May, 1912.

1. D. E. JACKSON: Pharmacological Action of Vanadium.
2. H. T. MOSTROM and H. MCGUIGAN: Convulsive Reflex Produced by Strychnine. I. Habit.
3. H. T. MOSTROM and H. MCGUIGAN: Convulsive Reflex Produced by Strychnine. II. As Modified by Epinephrine.
4. DAVID I. MACHET: Convulsant Action of Some Sulphonated Dyes.
5. CARY EGGLESTON and ROBERT A. HATCHER: Seat of Emetic Action of Apomorphine.
6. JOHN J. ARLE: Action of Drugs and Function of Anterior Lymph Hearts in Cardiectomized Frogs.

1. **Action of Vanadium.**—Jackson gives a thorough review of the literature on the physiological effects of this metal and reports the results of his own experimentation. Upon intravenous administration the chief action of vanadium is expended on the vascular system. The central nervous system has but little influence on this action, for the rise in blood pressure produced in a decapitated animal is almost identical with that produced in a normal (etherized) animal. With ordinary doses the mammalian heart is but little affected. The vagus endings in the heart remain active throughout the whole course of the intoxication in the intact animal. Batrachian and chelonian hearts seem to be more directly affected by the element than is the mammalian heart. An intense peripheral vasoconstriction is produced by the metal in the spleen, kidneys, and intestines. In the intact animal the cutaneous and muscular vessels dilate from visceral displacement of the blood, but in perfusion experiments the limb volume also decreases slightly. The view previously held that the rise in general blood pressure was due to stimulation of medullary vasoconstrictor centre is wholly wrong. The peripheral vasoconstriction is due to a localized action within the organs themselves. With repeated intravenous injections of the same doses the rise in blood pressure following each injection regularly decreases until at length a fall will be produced by each in-

jection. This is due, 1, to weakening and paralysis of the vasoconstrictor centre; and, 2, to a direct depression of the heart. The peripheral action of vanadium on the visceral vessels is very much greater than that of barium. With doses of epinephrine and of vanadium so adjusted that each will give the same rise in general blood pressure, the vasoconstriction in the kidney, spleen, and intestine produced by vanadium is much greater in extent and duration than that produced by epinephrine. On this basis vanadium may possibly prove to be of use in internal hemorrhages occurring in these organs. Vanadium causes increased intestinal peristalsis, but its local application to a loop of intestine does not cause a local anemia or a contraction of the bowel wall as occurs with barium. These two elements also differ widely in their actions on the heart. Smooth muscle, except the vessels and alimentary canal (and perhaps certain nonstriated muscular elements in the spleen and kidney) does not seem to be affected by vanadium. In toxic doses the substance acts upon the kidneys and alimentary tract like other irritating metals.

2. **Convulsive Habit Due to Strychnine.**—Mostrom and McGuigan studied experimentally in frogs the question whether the time required for, or the ease of production of tetanus with a constant dose of strychnine is reduced with each succeeding exhibition of the drug. In one series of frogs the time elapsing before the onset of spasms was shortened from thirty to 13.5 minutes in a period of thirty-six days, the total number of injections being six, while in the second series the time was shortened from twenty-six to 10.5 minutes in forty-nine days, the number of injections being four. Thus in both series a convulsive habit was shown to develop from repeated administration of the drug.

3. **Action of Strychnine as Modified by Epinephrine.**—Mostrom and McGuigan performed experiments bearing on this question in frogs, guinea-pigs, and rabbits. They conclude that epinephrine is antagonistic to the paralytic action of strong strychnine solutions on the heart, but that the two drugs have a synergistic action on the spinal cord. Spasms develop more quickly when epinephrine is given with or before strychnine. Strychnine is antagonistic to the general depression produced by epinephrine, but the latter will not antagonize a strychnine spasm. From these findings there is no indication that epinephrine can be applied with benefit in the treatment of strychnine convulsions.

5. **Seat of the Emetic Action of Apomorphine.**—Eggleston and Hatcher conclude from a study of the literature and experimental work that the evidence in favor of the existence of a central controlling mechanism for the act of vomiting is overwhelming. Apomorphine acts solely by direct stimulation of this mechanism in the dog and probably also in man. There is no valid evidence in favor of the local reflex action of this drug.

REVUE DE CHIRURGIE

May, 1912.

1. VAUTRIN: Excision of Duodenum in Treatment of Infrapyloric Ulcer.
2. X. DELORE and H. ALAMARTINE: Supracæcal Stenosis with Membranous Pericæcolitis.
3. ANDREA MARRO: Colostomies, Total and Partial.
4. A. VIGNARD and L. ARNAUD: Intraperitoneal Injection of Camphorated Oil in Treatment of Acute Generalized Peritonitis.
5. PIERRE MCCOY and JACK MOCK: Treatment of Chronic Metritis by Injections of Zinc Chloride.

6. BARTHÉLEMY and MIRAMOND DE LAROCQUETTE: Traumatic Lesions of Testicle and Epididymis.
 7. J. GUYOT and A. PARCÉLIÈRE: Surgical Treatment of Primary Tumors of Pleura and Lung (Concluded).

1. Duodenal Exclusion in Infrapyloric Ulcer.

—Vautrin reviews the medical and surgical treatment of duodenal ulcer, the most salient features of his article being disapproval of gastroenterostomy as an exclusive panacea in this condition and a recommendation that duodenal exclusion be practised as a supplementary measure in certain classes of cases. Medical treatment is advocated at first even in rather severe cases associated with repeated hemorrhages from the bowel, as much can be done by proper dieting and the administration of alkalis to overcome hyperchlorhydria and thus favor healing of the ulcer by counteracting its cause. Several cures of eight or ten years' standing were observed by the author after medical treatment alone. In acute forms of duodenal ulcer, such as are due to toxic causes, to uremia, septichemia, or surgical procedures, as well as in *ulcus neonatorum*, the best procedure consists in stimulating urinary excretion, combating the infection or other cause, and enhancing the resisting powers. In subacute forms of duodenal ulcer, such as occur when the hyperchlorhydria is in its incipency, or appears at intervals only, medical treatment will also often give excellent results. In distinctly chronic types of ulcer, however, which are not likely to respond to medical measures, surgical intervention is indicated. Vautrin emphasizes the advantages of duodenal exclusion, i. e., section of the gut above the ulcer and closure of the two open extremities, followed by gastroenterostomy. Only in this way can the ulcer be entirely removed from the influence of the acid gastric juice and recurrence certainly avoided. Gastroenterostomy alone, however wide the orifice, will not lead permanently to a complete diversion of the gastric contents through the new opening unless there be pyloric stenosis in addition. Though the symptoms may be relieved at first, they will later return owing to renewed activity at the seat of the ulcer, and there will be further danger of hemorrhage and perforation. In two cases operated in by the author because of recurrent, copious hemorrhage, gastroenterostomy alone did not prevent further bleeding, the patients succumbing to acute anemia. Duodenal exclusion, on the other hand, causes prompt disappearance of all hemorrhage, the ulcer tending to heal rapidly. Jonnesco and Amza Jianu have shown clinically and experimentally that duodenal exclusion causes a diminution of gastric hypersecretion and hyperchlorhydria, and that evacuation of the stomach takes place rapidly, whereas after gastroenterostomy alone it is retarded. In view of these various facts, Vautrin advises that gastroenterostomy be reserved for duodenal ulcer accompanied by pyloric or infrapyloric stenosis, and that exclusion be performed in all other cases where the patient's general condition permits.

3. Exclusions of Large Intestine.—Marro reports two cases ending fatally which emphasized the need for earlier resort to the surgeon by the physician in serious, painful affections of the large gut than is now the case, and describes in detail the technique and indications of various forms of intestinal exclusion. Stress is laid upon an anastomotic

button of the author's invention, to be employed in colostomies for the purpose of reestablishing direct communication between healthy portions of the bowel, and having the advantage of not penetrating the intestinal wall during its introduction except in two points at which the halves of the button are held together. A special clamp for enteroanastomosis is also described, by which the four layers of intestinal wall of the two loops of gut to be united are strongly pressed together in a zigzag line, a straight needle being then inserted into a groove channelled in the clamp in such manner as to occlude hermetically the intestinal lumina while the two final layers of sutures uniting the loops are being inserted. In performing ileosigmoidostomy Marro advocates the formation of a valvelike structure by invagination of the ileal segment, in order to replace the ileocecal valve, the function of which has been lost owing to its presence in the excluded portion of gut. In ulcerative forms of colitis, which show an unfortunate tendency to extend from above downward so as to involve the whole of the rectum, Marro favors the performance of ileoanastomosis—i. e., anastomosis of the ileum at the anus,—especially in megacolon, inoperable tumors; and grave forms of colitis. The operation is less severe and gives better results than ileosigmoidostomy, placing the entire colon at rest, permitting of local treatment of the lesions, and rendering it possible that the functions of the colon may later be reestablished by restoration of the continuity of the gut through the insertion of an anastomotic button. It is equally effective as the formation of an artificial anus in the iliac region and esthetically is far superior to it.

4. Camphorated Oil, Intraperitoneally, in Acute Diffuse Peritonitis.

—Vignard and Arnaud discuss the mode of action and usefulness of this measure. Absorption of bacteria from the peritoneum through the lymphatics is hindered by the oil, and bacilemia thus prevented; absorption of toxins through the capillaries is, however, not arrested. The oil also hinders the formation of adhesions; this, in turn, reduces the likelihood of intestinal paralysis, whether mechanical or dynamic—a feature of great importance in peritonitis, in which paralysis of the gut is one of the chief dangers. After the injection of oil in these cases vomiting promptly ceases, peristalsis supervenes, and evacuation of gases and fecal material soon follows. All surgeons who have used the injections have noted both general and local improvement. Where the procedure is carried out too late to arrest the morbid process, there is at least a temporary improvement and retardation of the exitus. The authors have observed a favorable effect on the pulse and in some cases a rapid fall of temperature to the normal. They use a one per cent. solution of camphor in the oil; with this strength nervous excitation, such as has sometimes been observed after injection of ten per cent. oils, is avoided, and as much as 200 or 300 c. c. may be used. The oil should be purified and carefully sterilized before use. Purification is best obtained by mixing one kilogramme of oil with 300 grammes of alcohol, shaking several times, allowing to stand twenty-four hours, and decanting. These procedures are repeated three times, after which the remaining traces of alcohol are driven out by careful

heating on a sand bath. The oil and the camphor may be sterilized separately and then mixed, or the mixing may be done first and the mixture then sterilized in a sealed container.

DERMATOLOGISCHE WOCHENSCHRIFT.

May 11, 1912.

1. NOBERT TURK: Etiology of Phagedenic Genital Ulcers (*To be continued.*)
2. ARTUR FONTANA: High Frequency and High Tension Current in Treatment of Certain Dermatoses.
3. KARL RUHL: Remarkable Dermal Manifestation during Menstruation.
4. E. GALEWSKY: Spontaneous Disappearance of Juvenile or Hard Warts, Result of Treatment.
5. NOBERT TURK: Etiology of Phagedenic Genital Ulcers (*Continued.*)

May 18, 1912.

4. **The Spontaneous Disappearance of Juvenile or Hard Warts as the Result of Treatment.**—Galewsky remarks that the method employed is immaterial in the treatment of warts; there are cases in which when the warts on one hand are treated, those on the other hand disappear. There are other instances when if a few of the lesions are treated, it is sufficient to cause the rest of the lesions to disappear. He ascribes it to a vasomotor reflex action dependent upon some irritation. Two cases are reported. 1. About 120 warts on both hands. A few lesions on each hand were treated by electrolysis. After this the rest of the warts gradually disappeared without further treatment, leaving only flat, whitish spots. 2. The patient was a young woman. In the spring of 1911 many juvenile warts appeared on both hands. During the summer, up to July 1, 1911, the patient had twelve x ray sessions with no results. In December, 1911, a few lesions on one hand were treated by electrolysis and the rest of the warts on both hands began to disappear. A few months later only whitish spots marked their site.

DERMATOLOGISCHES CENTRALBLATT

May, 1912.

1. DREYER: Diagnosis of Hard Chancre.
2. KARL VIGNOLO-LUTATES: Relation of Raynaud's Disease to Heredodysphilia.
3. E. BJÖRKLING: Origin of Leucocytes in Prostatic Secretion.

1. **Diagnosis of Hard Chancre.**—Dreyer states that of all the features mentioned in the textbooks as characteristic of an initial lesion none is so characteristic as the eroded border. This varies in its width, is never absent, and its color, in most instances, is somewhat deeper than that of the erosion itself. It is necessary thoroughly to clean the lesion before this characteristic eroded border can be distinguished. Often it does not surround the entire lesion, and occasionally only when the chancre begins to spread. It is present not only in genital chancres, but also in tongue and lip lesions. In a few instances it has been demonstrated in moist papules. It is absent in healing retrogressing chancres. In balanitic ulcerations, in soft chancres, and in herpetic affections it is never present. The size and form of the lesion have nothing to do with the presence of this border. It is especially marked in the rapidly extending urethral initial lesions. The only mention in the literature on this subject is to be found in Mracek's atlas on syphilis and venereal diseases, of 1908. Photographs and reproductions show this eroded border, though no comments are made on it.

DERMATOLOGISCHE ZEITSCHRIFT.

April, 1912.

1. W. LIER: Histological Changes in Cutaneous Syphilides after Salvarsan.
2. WILHELM HEUCK: Granuloma pediculatum.

1. **Histological Changes in Cutaneous Syphilides after Salvarsan.**—Lier studied nine cases, making examination of tissues before and after the administration of salvarsan. The most prominent feature of the findings was the rapid, uniform, and marked influence of the drug on the plasma cells. After thirty-six hours they were found in places edematous with distinct nuclei, or the cell body rapidly breaking up. Groups of unchanged cells were seen in the neighborhood of markedly changed vessels. In two of the cases very many young connective cells were found in the infiltrated areas. In most of the specimens examined there was a marked edema of the epidermis and corium, with a distinct dilatation of the vessels. The lymphatic spaces in the epidermis were dilated. The capillaries of the papillary bodies showed a marked proliferation of the endothelium, in places sufficient to occlude the lumen. Some of the vessels were found to be completely filled with polynuclear leucocytes. The mast cells were unchanged.

SURGERY, GYNECOLOGY, AND OBSTETRICS.

June, 1912.

1. G. GREY TURNER: Pyloroplasty; with After Histories of Forty-three Cases.
2. GUSTAV PETREN: Late Results of Operation for Perforation of Gastric or Duodenal Ulcer.
3. CARROLL SMITH: Histology and Nature of So Called Foam Cell Tumors; Four Cases of Endothelioma xanthomatousum.
4. J. W. DRAPER and W. C. MACCARTY: Autolytic Excision by Pentagonal Compression Suture; Physiological, Pathological, and Surgical Significance.
5. J. H. BRYAN: Diseases of Accessory Sinuses in Relation to Diseases of Eye, and Surgical Methods to Be Adopted for Relief.
6. GORHAM BACON: Relation between Otic and Endocranial Disease.
7. J. R. GOODALL: Origin of Epithelial New Growths of Ovary.
8. T. A. WILLIAMS: Chronic Visceral Pain in Relation to Surgery and Psychotherapy.
9. JOHN E. WEEKS: New Operations in Glaucoma.
10. A. H. FREIBERG: Codivilla's Method of Lengthening Lower Extremity.

1. **Pyloroplasty.**—Turner comes to the conclusion that pyloroplasty has a definite field of usefulness, and that when properly indicated its performance is attended by very good results. It should, in certain conditions, be preferred to gastroenterostomy, i. e., in simple, uncomplicated, pyloric stenosis, pylorospasm when no definite cause can be discovered, the contracted pylorus that is so often met with in cases of hourglass stomach, and in cases of ulcer of the body of the stomach where pyloroplasty is as likely to be curative as gastroenterostomy or excision. Cutting the pyloric sphincter does not seem to interfere with the digestive mechanism controlling the exit of the food.

2. **Perforation of Gastric or Duodenal Ulcer.**—Petren reviews the histories of fifty-two cases that had been operated in for perforation of gastric or duodenal ulcers. The results of these investigations show that about one half the ulcer patients who have successfully gone through an operation for perforation are after years quite well, fully capable of work, and are practically free from gastric symptoms, and that only a small proportion of the remaining patients have later been subject to severe ulcer symptoms.

6. **Otic and Endocranial Diseases.**—Bacon calls attention to the importance of recognizing

otitic disease early on account of the anatomical relations, there being only a thin plate of bone forming the roof of the middle ear and separating it from the dura and brain, while beneath its floor lies the jugular bulb. Anteriorly is the internal carotid artery. As a result of middle ear disease there may be sinus thrombosis, extradural abscess, abscess in the temperosphenoidal lobe, or cerebellar abscess.

7. Epithelial New Growths of Ovary.—Goodall gives a complete summary of ideas concerning the origin of such growths and concludes that as a result of instability the fetal rests may readily pass over into new growths. Also that owing to the cicatrization of corpora lutea the germinal epithelium may be drawn deeply into the ovary and that chronic inflammation of the ovary predisposes to cyst formation, these last two conditions being acquired sources of new growth.

CANADIAN MEDICAL ASSOCIATION JOURNAL.
June, 1912.

1. ALFRED H. CAULFIELD: Effect of Anatomical and Immunological Data upon Conception of Tuberculosis.
2. C. D. PARFITT: Present Attitude toward Tuberculosis.
3. MRS. W. R. LANG: Housing Conditions in Canada.
4. HAROLD DYER: Rheumatism in Children of Vancouver and District.
5. A. E. MALLOCK: Personal Reminiscences of Lister.
6. J. OSCAR THOMPSON: Interesting Case of Attempted Suicide in Canton Hospital.

Proceedings of Societies.

AMERICAN THERAPEUTIC SOCIETY.

Thirteenth Annual Meeting, Held under the Auspices of
McGill University, at Montreal, Canada, May 31 and
June 1, 1912.

The President, Dr. ALEXANDER D. BLACKADER, in the Chair.

(Continued from page 98.)

Some Common Types of Hyposecretion of the Thyroid.—Dr. FRANCIS M. POTTENGER, of Los Angeles, mentioned a case illustrating the value of recognizing the existence of abnormal thyroid secretion; that of a young, married woman whose condition was similar to that of one of Doctor Osborne's cases. She was sleepy, listless, sluggish, and forgetful of her children and her household duties, and had, indeed, become so degenerate that her husband left her. Having been led to consider thyroid hyposecretion as the possible cause of trouble, he gave her thyroid, and the result was that, in the language of her family, she was "made over." Had it not been for the work done by Doctor Sajous he felt sure that it would have been impossible to do anything for this patient.

Differentiation of Cardiac Arrhythmias and Their Treatment.—Dr. THOMAS E. SATTERTHWAITE, of New York, said there were now recognized four distinct varieties of arrhythmias, capable of being demonstrated by graphic methods, and that these corresponded to the first four of the five physiological attributes of heart muscle described by Gaskell, namely, rhythmicity, the faculty of rhythmically initiating a stimulus; irritability or excitability, the capacity for receiving a stimulus; contractility, the faculty for responding to a stimulus; conductivity, the ability to convey a stimulus. The first form of arrhythmia, described years ago by Kussmaul, he had termed the pneumogastric, be-

cause of its close relation to vagus influences, and it was a variation from the standard cycle within physiological limits. In the second variety, the exosystolic, there were extra, or supernumerary contractions, from stimuli not originating in the sinus venosus like the pneumogastric arrhythmia, though in the main the regular or sinus rhythm was maintained. There were two principal types, the ventricular and the auricular. All exosystoles were followed by a pulse period rather longer than the normal. The really most important function of heart muscle was contractility, and a striking example of its abnormal characteristics was seen in the alternating pulse, in which the alternation of large and small beats was continuous, thus distinguishing it from exosystolic arrhythmias. Another variety of abnormal contractility was seen in auricular fibrillation, where the cardiac cycles varied so much that there was no sequence of beats having the same length. This was responsible for most of the disturbances of the ventricular system. Indeed, in the vast majority of instances, a sphygmogram, showing that no two successive beats were of the same length, meant the diagnosis of auricular fibrillation. In affections of conductivity the normal stimulus, which started in the sinus and passed over the bridge of His to the ventricle, might be delayed in its course, might not cross at all, or might be arrested beyond the bridge, any one of which conditions might produce heart block. The pulsus infrequens, improperly called the slow pulse, was almost always indicative of a loss of conductivity.

Disturbed rhythmicity, the first of the types of irregularity, did not as a rule warrant us in sounding notes of alarm, as it was really physiological. In exosystole there might be a neurotic base, or it might result from the pressure of gas from gastrointestinal fermentation; or, again, it might be a reflex from the alimentary canal, as in indicanuria. In the one case, sedatives, such as camphor and bromides, were useful; in the latter, remedies regulating gastric or intestinal digestion. If the extra systoles were due to overuse of coffee, tea, or tobacco the indications were evident. In auricular fibrillation no remedy was so satisfactory as digitalis or its congeners, of which strophanthus was the best. Acute heart block might, however, be due to digitalis, in which case the drug should of course be at once discontinued. If syphilis was present, antisyphilitic treatment should be pushed. Atropine, 1/60 grain, was available as a test to determine whether the heart block was due to a lesion of the pneumogastric.

On account of the expensiveness of the Jaquet time marker, Doctor Satterthwaite had devised an American time marker, which could be made at home and involved no great expense. No large institution, he said, ought to be without a good polygraph.

High Blood Pressure and the Adrenals.—Dr. CHARLES E. DEM. SAJOUS, of Philadelphia, said that the functional relationship between the adrenals and the blood pressure, through the direct action of their secretion upon the muscle fibres of the heart and arteries, as well as the fact that the arterioles received the brunt of the contractile action of

the secretion, was now well established. On account of the limited time at his disposal, he could treat of but one of the morbid effects which this action of the adrenal product might entail, arteriosclerosis. That the production of vascular lesions resembling at least those of arteriosclerosis was caused by injections of adrenalin had been attested by many observers. Some of these, it was true, had argued that the lesions differed from typical arteriosclerosis, but when we reflected that syphilis was one of the important etiological factors in arteriosclerosis, it seemed clear that this view was not well founded. Having referred to other objections, he said that McConnell had stated very recently that the changes which developed did not correspond accurately with those of the ordinary nodose sclerosis, but they were indistinguishable from the changes seen in Moenckeburg's type of medial degeneration. The statistics as to causation of 6,129 cases of arteriosclerosis in various parts of the world suggested a toxemia as the common pathogenic factor of the condition; specific toxins where infectious diseases were the causative agents; excessive metabolism and tissue waste products in hard physical labor; purin bases in gouty cases, as well as those due to chronic lead poisoning. All these main causes of arteriosclerosis could thus be summarized by the one word, intoxication, as long ago emphasized by Traube and Rokitsky. As to the relationship between this general toxemia and the adrenals, it was a fact that all but one (alcoholism, which had not been studied in this connection) of the morbid conditions known to provoke arteriosclerosis had also been known to cause overactivity of the adrenals. He cited authorities in reference to these several conditions, and said that this evidence was further sustained by the fact that Coplin, in an examination of the adrenals of twenty-two cases of arteriosclerosis, found that seventeen were markedly altered, the exceptions being the seat of a tuberculous process in three instances and of a secondary neoplasm in one. Again, potassium iodide, our best remedy in arteriosclerosis, had been found to inhibit the secretory activity of the adrenals. We were thus brought to attribute to adrenal activity the production of clinical arteriosclerosis, a process similar to that caused by Josué when he injected adrenalin experimentally. Now, whether we injected adrenalin, or whether the adrenals were overactive, the effects produced on the vascular system *per se* were borne directly by the terminal arteries. This appeared to furnish the key to the situation, or, rather, the missing link of a chain of facts which clearly explained the pathogenesis of at least the familiar forms of arteriosclerosis from beginning to end. Briefly, the causogenic toxic agent, whatever it happened to be, caused more or less violent overactivity of the adrenals (probably by exciting their centre), and thus increased their secretory activity sufficiently to reduce more or less the calibre of the arterioles from which the vasa vasorum received their supply. Deficiently nourished through these, their nutrient vessels, the medial and intimal vascular tissues degenerated, forming the familiar sclerotic patches.

Nature of the Cardiovascular Changes in Nephritis.—Dr. ALFRED C. CROFTON, of Chicago,

said that in attempting to interpret the cardiovascular changes occurring together with nephritis, it was important to remember that, on the one hand, many cases of nephritis ran their whole course without the appearance of any cardiovascular manifestations whatsoever, while, on the other, cases of nephritis sometimes occurred in which increased blood tension made its appearance within forty-eight hours after the onset of the renal difficulty, and rapidly led to organic cardiac and arterial lesions which proceeded throughout the course of the disease. Of the large number of cardiovascular disorders in which blood pressure change either preceded or accompanied nephritis one could logically distinguish three possibilities: 1. The cardiovascular changes preceded and caused the nephritis. This was the sequence of events in true Bright's disease, for in many of the cases of this we saw high tension long before nephritic symptoms appeared. A persistent increase in the arterial pressure ultimately led to degenerative changes, particularly in organs of the body supplied by end arteries, chiefly the kidneys, the retina, and the brain. 2. The cardiovascular changes developed simultaneously with the nephritis. Here some agency must be operative which affected both the cardiovascular apparatus and the kidneys, and to this category belonged chiefly the cardiorenal disorders seen in chronic lead poisoning and, above all, in the so called gouty diathesis. 3. The cardiovascular changes were manifestly of renal origin, consecutive to the nephritis, and in all probability due to renal inadequacy with retention of urinary end products. It would consequently be seen how important it was from the standpoint of prognosis and treatment to attempt in each case of nephritis complicated with cardiovascular disorders an interpretation of the sequence of events.

High Blood Pressure Arising from Nervous Strain in Diseases of the Nervous System.—Dr. EDWARD D. FISHER, of New York, in looking at the subject from his special standpoint, said he would emphasize the fact that many of those conditions already discussed were present and complicated the special disorders of the nervous system—in fact, might be the real cause of the trouble. He would call attention particularly to diseases of the nervous system due to arterial disease, endarteritis, either of the atheromatous type, or that consequent upon syphilis, to cerebral compression as caused by new growths, increase of cerebrospinal fluid, etc., and to vascular changes due to direct poisons, such as uremia, diabetes, alcohol, etc. In the first group, endarteritis of a degenerative type, a rather general distribution of arterial disease was found; so that, not only was the nervous system involved, showing cerebral and spinal symptoms, but interstitial nephritis and cardiac hypertrophy were also present. In patients under forty years, with probably acute cardiac and kidney involvement, we had symptoms peculiar to disorders of the special organs, but no, or only slight, tendency to cerebral hemorrhage or epilepsy, as in older persons. In them the blood pressure might be temporarily high, but was not continuously so, and was more easily relieved or controlled, while in patients over forty years, there was a constant high blood pressure.

subject also to marked increase, which was the danger point, indicating the probability of a seizure, apoplectic or epileptic. The arterial condition here marked out positively the difference between such epileptic seizures and so called idiopathic epilepsy, and also that due to a focal lesion. In eclampsia during pregnancy a great and often sudden rise in blood pressure previous to the seizure was frequently observed, and this was evidently not due to arterial disease, but to some toxic agent in the blood. High blood pressure when occurring during pregnancy should be regarded as a danger signal. If in syphilitic endarteritis the blood pressure, contrary to the usual rule, were high, this was to be explained, not by the arterial disease, but by complications, which probably explained the clinical condition, due, as a rule, not to cerebral hemorrhage, but to cerebral thrombosis. In such cases there was a cerebral anemia resulting from a gradual occlusion of the calibre of the vessels by actual thickening of their coats, or actual infiltration of new growth into their walls. Other complications might, however, modify this picture, explainable, as in non-specific cases, as due to exogenous or endogenous causes. In cerebral growths we found cerebral compression, which might also manifest itself by high blood pressure, perhaps of a permanent character. Here again we found there were variations dependent upon exciting conditions, such as cephalalgia, disease of the kidneys or heart, drugs, etc. The convulsions present might be due to anemia from pressure. High blood pressure in cerebral tumors, in hydrocephalus, or in compression following trauma might be observed to fall as soon as the skull was opened, or, more surely, on opening the dura, with the escape of cerebrospinal fluid. This was not always the case, however, in decompression operations for traumatism, many such patients continuing to show high blood pressure and failing to regain consciousness. During cerebral operations taking the blood pressure was valuable as a routine, as rapid fall indicated the need of stimulation or cessation from further operating at the time. Doctor Fisher emphasized the great value of observing the blood pressure in all cases of vascular disease, stating that its sudden or steady rise indicated the line of treatment, which might avert a catastrophe. At least, it might inform us of the danger of our patient.

High Blood Pressure in the Toxemia of Pregnancy.—Dr. D. J. EVANS, of Montreal, said that in twelve of a series of thirty-eight cases of pregnancy complicated with eclampsia, albuminuria, or vomiting of a toxic type which he had recorded, the toxic condition was severe enough to call for the interruption of the pregnancy. In eight cases eclamptic convulsions occurred, and among these the highest blood pressure noted was 200 mm., and the lowest, 140 mm. In most instances the blood pressure immediately before the convulsions was between 170 and 190 mm. One of the patients had three convulsions, though her blood pressure never rose above 150, except just at the time of the convulsion. Two had a blood pressure of 200, one with five and the other with eighteen convulsions, and the child of the former died of convulsions fourteen hours after spontaneous delivery. There

were four cases of severe vomiting, two early in pregnancy and two near term. In the latter patients the blood pressure was 140 in one and 125 in the other, and in both labor was natural and the children were born alive. The former patient, whose blood pressure was never above 125, recovered from her vomiting and went to term, while the other patient, a most severe case, aborted at the sixteenth week and died ten days later. For a considerable period the blood pressure of this patient was taken several times weekly, and was usually found to be about 100 (never above 110), yet in her developed retinal hemorrhages and other signs of severe toxemia. The other twenty-six cases were all in albuminurics, with toxic symptoms of more or less severity. Seven of these patients had a blood pressure of 160 or over—two of them recording as high as 180—and in twelve it was 140 or under, the lowest record being 120. As the result of his experience he was inclined to conclude that the blood pressure record was of little value in indicating the degree of toxemia present in cases of vomiting in pregnancy. Moreover, he had been surprised at the comparatively low reading obtained in many cases where the symptoms indicated the existence of a very considerable degree of toxemia. In three instances induction of labor was imperative, though the blood pressure was 150 or under, and in four with a blood pressure of over 150 the toxic symptoms were so slight that the women were permitted to go to term, when they were delivered naturally. He was inclined to consider 160 as the danger limit, and that in cases where, in spite of treatment, the toxic symptoms did not yield and the blood pressure was maintained as high as this point, or higher, labor should be induced. In cases of pregnancy with high blood pressure without toxic symptoms there was little occasion for anxiety. In all cases with hepatic or renal insufficiency the blood pressure should be carefully watched. A rising blood pressure in such cases, associated with other toxic symptoms, was indicative of danger, and here he would consider 160 mm. of pressure the danger limit.

General Treatment of High Blood Pressure.—Dr. SPENCER L. DAWES, of Albany, N. Y., said the general treatment would naturally include the treatment by manual methods, regulated movements, baths, electricity, and sodium nitrite. General treatment might be divided into, 1, prophylactic, 2, curative, and, 3, symptomatic. 1. A regulation of the habit of the individual as to diet, exercise, and excretion constituted the prophylactic measures indicated. Modern, rational, and, above all, systematic exercise would do more to prevent sclerosis of the arteries and its accompanying hypertension even than a regulation of the diet. And, in addition to this, most active business men should obtain at intervals, certainly once a year, the relaxation attendant upon a sea voyage or a period in the actual country, away from the excitement of business and society. 2. Here we should pay our first attention to causation, such as gout, syphilis, the excessive use of alcohol, and overindulgence of all kinds, for, after all, it had to be admitted that high blood pressure was a symptom, rather than a disease. By far the most popular of all drugs used

with the idea of cure was iodine in some form, given oftentimes to the point of toleration; but its value rested more upon empirical evidence than upon accurate measurement of the blood pressure. As to the third point, symptomatic treatment, unfortunately, most of our efforts had to be directed toward relief, since the majority of patients did not come to us until a distinct arteriosclerosis was established, when it was often impossible to benefit them by curative treatment. Venesection, which had been abandoned on account of its abuse, not infrequently gave brilliant results in appropriate cases. Again, results as gratifying to the physician as to the patient might attend upon the free use of calomel or the mass of mercury, followed by a brisk saline purge. When there was intestinal torpor, with decomposition of the animal food, lactic acid tablets might be employed to advantage. In certain types of cases where there was inefficiency of the skin and kidneys with myocardial degeneration, with or without valvular disease, the promotion of free diuresis was often of great help; and here digitalis was of the greatest value, notwithstanding that primarily it increased the arterial tension. Theobromine sodiosalicilate was also helpful, as, in addition to its action on the kidneys, it had a direct effect upon the vasomotor centre and secondarily upon the blood pressure; and the combination of these two remedies at times gave remarkably good results. For immediate effect upon hypertension, as well as for continued use over a long period, no class of drugs equaled the nitrites. Care should be taken, however, not to lower the blood pressure to a point where the secreting function of the kidneys was unfavorably affected, and it was also well always to remember that not all cases where there was high blood pressure demanded, or even admitted, of a reduction of the tension, for as long as the cardiac powers compensated for obstruction in the circulation, no special treatment was needed.

Treatment by Mind Control and Mechanical Agencies Making for Vasomotor Control.—Dr. J. MADISON TAYLOR, of Philadelphia, said that since there was still so much doubt as to the gravity of the symptom, vascular hypertension, and indecision as to how far it was an evidence of organic conservation, it was the part of wisdom to employ in overcoming it only those vasorelaxing agents whose action was understood, capable of exact regulation, and likely to do the least harm. Many drugs were admittedly capable of confusing, even dangerous, retroaction; hence, in the absence of a precise knowledge of the action of these medicaments and a full appreciation of the complex factors present, there might be recommended training in mind control and simple, trustworthy mechanical and thermal agencies capable of opening or closing the blood paths. A large number of individuals exhibited psychic hypertension as a common feature of various other derangements; also a vascular hypertension of from ten to twenty-five mm. Hg. Again, it was a common observation that where conditions for vascular hypertension existed, there was also psychic hypertension. In the case of the former marked relief was afforded by applying well chosen methods of psychic relaxation; in the latter, no matter what the underlying cause, a gratifying

and increasing lowering of vascular tension was occasioned by securing mental relaxation. Persistence in training in mind control produced satisfactory and permanent vascular relaxation and relief of distressing sensory symptoms. Having outlined his methods, which he said were more fully set forth in a paper entitled *Psychic Hypertension in the International Clinics* for July, 1912, Doctor Taylor stated that the following were satisfactory mechanical measures inducing vasomotor relaxation; 1. Manual therapy, using the fingers to press gently and continuously (distributed pressures) on the paravertebral tissues; useful in both acute febrile and protracted states. 2. Skin friction of the whole surface, dry or with water, for periods of not less than twenty to thirty minutes, preferably twice daily; especially for protracted or chronic vascular excitation. 3. Gentle, systematic, increasing passive, active, and resistant movements, watching the heart; also steady walking, slow "trudging" on level or gently sloping ground, e. g., "terrain kurs" of Carlsbad, Aix, etc. 4. Baths, especially the "neutral immersion bath," water at 92° to 98° F., preferably containing sodium and calcium chlorides, in which the patient should lie for half an hour to two hours once or twice daily.

(To be continued.)

Letters to the Editor.

AMERICAN MEDICAL EDUCATION.

PHILADELPHIA, July 6, 1912.

To the Editor:

By their fruits ye shall know them.

A great deal of printer's ink has been used lately in comparing European and American medical education, the majority of editorials and papers being decidedly unfavorable to the United States. It must be acknowledged that European universities are larger; the clinical facilities, due to the fact that there is greater poverty in Europe than in America, are doubtless greater; professors in European colleges take themselves more seriously than their American brethren; but in spite of this, are the results gained any better? In other words, is the average European physician more skillful than the average American? Does he get better results than we?

I have never visited an English medical college, but during a service as a medical missionary in India for fifteen years, I met a great many English physicians and surgeons. The Indian Medical Service is a fine body of men, rendering a wonderful service to India. The members of the corps come from the best colleges in England, and are later trained in one of the largest military hospitals in the world, but I cannot see wherein they are better than the average American medical missionary, a graduate of one of our colleges, who has later taken hospital work in a large city. As to the Royal Army Medical Corps men—the "peacocks," as they are sometimes slightly called by line officers—they seem, to an outsider, to be far more interested in polo than surgery, and if you wish to make one mad

Book Reviews.

call him "doctor" and you have turned the trick, He is captain or major, as the case may be, and is as touchy about being "called out by his name," as the English put it, as any old maid is of her age.

Let an American medical missionary go to a station in which there is a hospital supported by the red tape of the Indian Government, and open a little one horse hospital; what happens? He is literally swamped with work. The American has greater tact; the white man's burden does not give him a severe attack of chronic swelled head; *he gets results*, although, unfortunately, he is usually handicapped because the funds at his disposal are ridiculously small. American training, as shown by results in India, not only compares favorably with those gained by English surgeons, but is often even better.

Some years ago, a friend sent me a list of questions given by the examining board of one of the Western States. I showed it to an English surgeon, a member of the Royal Army Medical Corps, and he acknowledged the questions were "stiffer" than any he had been required to answer in his examinations.

I have seen a little of the medical work done by Americans in Japan and China, not much, it is true; what I have seen, however, is good, as good as any done by English or German surgeons in those countries.

WILLIAM C. GRIGGS, M. D.,

Late of the American Baptist Missionary Union.

ON MUZZLING DOGS.

NEWTON, ILLINOIS, July 8, 1912.

To the Editor:

Noting the article on muzzling the dogs in your issue for the 6th inst., I would suggest that the readers of the NEW YORK MEDICAL JOURNAL urge their respective city and town officials to enact ordinances where none exist and cause the enforcement of ordinances where they do exist, to destroy all mongrel and stray dogs, and compel owners of valuable dogs to muzzle them. My experience in this village of 2,500 population was rather strenuous for several years. We had a muzzling ordinance on the books, but as they had never had a case of rabies in the town, as far back as any one could recollect, it was a very difficult matter to convince the city officials that the chance of confronting a case of rabies might occur at any time. In the month of March, 1910, I was called in counsel to see a girl, twenty years of age, suffering with a violent attack of rabies, having a very accurate history of infection (from the bites in several places on the body from a rabid poodle dog). The diagnosis was simple, even without the history of infection. The case proved fatal, and the writer and some eleven other persons suspected of infection were sent to the Pasteur Institute for treatment. Among others was the attending physician. This matter of procrastination cost the county and State quite a large sum. Since that time we scarcely see an unmuzzled dog at large. Please bear in mind, this case occurred in the month of March, when the weather was cold and snow was on the ground.

JAMES P. PRESTLEY, M. D.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Autobiography of a Baby. By THOMAS LINDSLEY BRADFORD, M. D. New Revised and Enlarged Edition. Philadelphia: David McKay, 1912. Pp. 107. (Price, 50 cents.)

It is intended in this little volume, in which the baby is supposed to be telling his own story, to point a moral and to promote the better care of other babies. The rather novel setting is about the only attractive thing that can be said in its favor.

This new, revised, and enlarged edition contains so many antiquated notions that the forcefulness of any rational statements that the author makes is discounted. For example, city milk is described as "half cheese, bits of butter floating in it, water diluting and decomposing it." This, in spite of the fact that the average city milk of today is conceded to be cleaner and more wholesome than that obtained in many rural communities. To advocate the use of melted ice instead of city water ("unless you can see through it") is too absurd to warrant further comment.

Among the formulas advocated we find the following: Milk, two ounces; cream, four ounces; water, eighteen ounces; sugar of milk, three tablespoons.

No percentage of cream is directed; in other words the mother may add a butter fat value of anywhere from eight to forty per cent. This in a volume to the laity!

Sewage Disposal. By GEORGE W. FULLER, Consulting Engineer and Sanitary Expert. New York and London: McGraw-Hill Book Company, 1912. Pp. xiv-767. (Price, \$6.)

This is a valuable addition to the recent literature on sewage disposal and makes an excellent showing for the splendid work that has been done in America. Written by one who has taken a leading part in the development of scientific sewage disposal in this country, the work represents the latest thought, judiciously tempered by a wide practical experience. The work is divided into twenty-six chapters, covering all phases of the subject. An excellent feature is the résumé given at the end of the chapters, dealing with the various methods and indicating their advantages and limitations. The author points out that there is no one standard method which can be uniformly applied to a large number of varying conditions, but that local conditions must always be carefully considered in order to produce the best results with economy. The subject of proper sewage disposal is so closely related to public health that it behooves all physicians who deal therewith to keep posted as to the progress being made in this branch of sanitary science. The book before us can be heartily recommended as an excellent presentation of the subject, and a safe guide.

Chiqueurs, mangeurs, buveurs et fumeurs d'opium. Etude médico-sociale sur l'abus de l'opium en France et dans les colonies françaises. Par le Dr. Raymond Gamel. Montpellier: Coulet et fils, 1912. Pp. 117.

Although this work is confined to a discussion of the opium problem in French colonial possessions, and the bibliography is composed entirely of French works, it contains much valuable information on a subject of which little is known in this country—save in New York and San Francisco. The opium habitués of the average American practitioner are hypodermic users of morphine, while in this book will be found all aspects of the habit, chewing, eating, drinking, and smoking opium. A unique case is cited of use *per rectum*. The vice is widespread, and a great menace to France is the acquisition of the habit by her soldiers and sailors in the colonies. Treatment is not discussed to any extent and nothing is said of the substitution of hyoscyamus, so popular here. Concerning prophylaxis the author, apart from stating that National

control is impossible and would lead mainly to scientific smuggling, prefers to leave the question to statesmen, suggesting merely that the prescription of opium should be confined to the medical profession. A full description is given of the preparation of the drug for smoking and other uses, and the list of adulterants is not without interest, including, as it does, stramonium, tobacco, cannabis indica, prickly pear, grape juice and pulp, raisins, figs, the reliable old apple core, senna, burnt sugar, flour, starch, white of egg, cowdung, glue, gum arabic, soap, wax, melted butter, earth, clay, sand, gypsum, chalk, soot, powdered brick, coalstul, beside the *yen shi*, or residue from the pipe, which is apparently known to the French as "dross." Gamel states that some of the empyreumatic products are more dangerous than morphine. Of historic users of opium, only Richelieu and De Quincey are mentioned. It is asserted that women are more susceptible to opium than men, and the belief that animals, especially cats, become "fiends," is confirmed. The physical and mental results of the opium habit are fully set forth, and a picture is drawn of the ultimate degenerate condition of the victim.

The Care of the Skin and Hair. By WILLIAM ALLEN PUSEY, A. M., M. D., Professor of Dermatology in the University of Illinois. New York and London: D. Appleton & Co., 1912. Pp. xiii-182.

While there are a multitude of works on dermatology, the hair and scalp seem hardly to have received the attention they deserve. Dandruff, baldness, continuous falling out of the hair cause great worry to the sufferers and if the physician is not consulted on these delicate matters, it is because he has failed in the past to give relief. As the book is addressed to the intelligent layman, the dermatological section is confined mainly to prophylaxis, and the influence on the skin of diet and personal habits is plainly pointed out. Acne, blackheads, chapping, and similar minor affections concerning which the patient is only too likely to consult ignorant advertising "specialists," are fully treated and the advice given should prove useful. As to the hair, the hygienic aspects of shaving and shampooing are discussed, premature canities is left unexplained, and the reader is apparently impressed with the very good rule to seek proper medical advice if the various preventive measures advised do not avail. The book is one that may be recommended to his patients by the physician, who need not fear that they be led into dangerous self medication.

Heredity in Relation to Eugenics. By CHARLES BENEDICT DAVENPORT, Carnegie Institution of Washington, Director of the Department of Experimental Evolution, Cold Spring Harbor, Long Island, N. Y., etc. New York: Henry Holt & Co., 1911. Pp. xi-298. (Price, \$2.)

That the laity will take other than the faintest interest in the study of eugenics for many years to come, is scarcely to be hoped; but physicians at least will find much food for thought and many startling illustrations of the strong influence of heredity in this thoughtful volume. A thorough résumé is made regarding the inheritance of family traits, with especial reference to diseases prevailing in families, some of them through many generations.

The vivid object lesson of the contrasted family histories of the Edwards of New England, the Lees of Virginia, and the Prestons of Kentucky on the one hand, and of the families of Jukes and Ishmael on the other, forces home the lesson the author would convey with telling effect. From the families first named descended Presidents of the United States, generals, judges, college presidents, eminent jurists, authors, noted scholars, or great divines, with the same certainty that oaks follow the planting of acorns; while from the latter strain of blood, paupers, murderers, thieves, prostitutes, gypsies, and degenerates of every type were almost the only descendants produced.

The author believes that society "has not only the right, but the duty, to make a thorough study of all the families in the State and to know their good and bad traits, and that the older States at least should establish bureaus of eugenics. He cites instances already established toward this end by private means, as the Volta Fund founded by Dr. Alexander Graham Bell, by means of which was established the Volta Bureau which collects valuable information with reference to deaf mutes, not only as a class but individually; and the Eugenics Record Office, of Cold

Spring Harbor, Long Island, which office wishes to co-operate with institutions and State boards of control, in organizing the study of defectives and criminalistic strains in each State. The eugenic record office has greatly benefited by the aid and interest of Mrs. E. H. Harriman to whom Mr. Davenport dedicates his book.

Der chirurgische Operationskursus. Ein Handbuch für Aerzte und Studierende. Von Prof. Dr. VIKTOR SCHMIEDEN, Privatdozent der Chirurgie an der Universität Berlin, Assistent der kgl. chirurgischen Universitätsklinik. Zweite, erweiterte und verbesserte Auflage. Mit 435 Abbildungen im Text und einem Vorwort von Prof. Dr. A. Bier. Leipzig: Johann Ambrosius Barth, 1912. Pp. xvi-380.

If we compare the present volume with the textbooks of operative surgery published ten years ago we are struck with the great changes in this department of surgical literature. The older books devoted their attention largely to the technique of such procedures as ligations in continuity, amputations, resections, and a few typical operations on the viscera, genitourinary organs, etc. To-day the need is for a book devoted more largely to the operations now in vogue rather than to those classic operations which are so much less frequently employed than formerly. At the present time a textbook of operative surgery to be up to date must devote most of its space to operative procedures employed by the best surgeons to-day with such brilliant results. Examples of these are operations with clamps on the intestinal tract, the various modern operations on the biliary and urinary tracts, the brain and spinal cord, the thyroid gland, the radical operations on the breast, rectum, etc. These operations all find full description in the present volume and for that reason the book is of great value, not only to the student first entering the field of modern surgery, but also to the practicing surgeon who desires to keep pace with the advances in surgical technique.

Special praise should be given the illustrations which are largely taken from drawings by an artist and give an excellent idea of the actual appearances of the tissues in an operation. The volume is convenient in size and deals only with the subject in hand. No space is given up to historical data, comparison of various methods, or description of the more complicated procedures. The book suggests the operating room rather than the dissecting room and thus adds an interest not always provoked by the older books devoted to topographical anatomy and illustrated only from the cadaver. The book will doubtless meet with a warm reception and when translated into English will probably become a familiar one to the American student and surgeon.

The Prevention of Dental Caries. By J. SIM WALLACE, D. Sc., M. D., L. D. S., Dental Surgeon and Lecturer on Dental Surgery and Pathology, London Hospital, etc. Second Edition. London: The Dental Record, 1912. Pp. viii-70.

The author's double qualification as physician and dental surgeon has enabled him to produce a little work deserving of as careful reading by his medical confrères as by the dental profession. It is well worth while for the physician to know that all artificial methods of cleansing the teeth, by brush, floss silk, or mouth wash, are inferior to those provided by certain articles of diet themselves. Farinaeous and sugary food, sweet crackers, bread and jam, bread and milk, oatmeal mush, honey, cocoa, chocolate, and the like should not be eaten by a child unless promptly followed by fibrous foods, and such articles as fish, meat, uncooked vegetables, stale bread, toast, the fresh fruits that require mastication, butter, oleomargarine, tea, coffee, water, and soup. These latter foods and the fibrous foods generally are not only not injurious to the teeth, but are directly preservative in their cleansing action. Beside this popular exposition of the subject, the reader will find the scientific side thoroughly discussed. Altogether, this booklet deserves earnest reading by the practitioner, who is certainly neglectful of his duty if he fails to note the condition of the teeth in every patient presenting himself for physical examination. If no dentist is near at hand, the physician can at least temporarily arrest the ravages of caries by suitable advice concerning diet, and the conscientious use of the toothbrush as a help.

Influenza. Von weil. Prof. Dr. OTTO LEICHTENSTERN in Köln. Als zweite Auflage vervollständigt und neu herausgegeben durch Prof. Dr. GEORG STICKER in Bonn. Mit dem Portrait weil. Prof. Leichtensterns, 4 Textabbildungen und 1 Tafel. Wien und Leipzig: Alfred Hölder, 1912. Pp. vi-250.

When the gripe reappeared in 1889 in Europe and soon covered our whole globe, to most physicians the disease was a new one. The last pandemic covered the years 1847 and 1848, and since then a few epidemics were observed in 1850-51, 1855, 1857-58, and 1874-75. Influenza has proved itself to be a pandemic of great importance, and with the discovery of *Bacillus influenzae* in 1892 by Richard Pfeiffer we have begun to know more about the disease. It was later found that the bacillus cannot be demonstrated in real epidemics only but also in many attacks of "colds." For the present the pandemic character of gripe has disappeared, but there are still many forms of coryza which receive the diagnosis of gripe. Sooner or later an epidemic or pandemic will again make its appearance, and we as physicians should always be watchful rightly to diagnose and treat the ailment when occasion arises. Sticker's new edition of Leichtenstern's well known textbook on influenza will be a good guide, not only for diagnosis and prognosis, but also for therapeutics of the gripe, its complications and sequelæ, and should be, as said, in the hands of every practitioner.

BOOKS RECEIVED

Grünbaum, Albert S.—The Essentials of Morbid Histology. For the Use of Students. With Twenty-two Colored Plates and 139 Other Illustrations. London, New York, Bombay, and Calcutta: Longmans, Green, & Co., 1912. Pp. xvi-219. (Price, \$2.)

Russell, Rollo.—Preventable Cancer. A Statistical Research. London, New York, Bombay, and Calcutta: Longmans, Green, & Co., 1912. Pp. vii-167. (Price, \$1.50.)

Bockenheimer, Ph.—Plastische Operationen. I. Band. Mit 258 zum teil farbigen Abbildungen und 3 Instrument-Tafeln. Würzburg: Curt Kabitzsch, 1912. Pp. vi-160.

Hirschfeld, Hans.—Polyzysthämie und Plethora. Mit 3 Abbildungen auf einer Tafel. Halle a. S.: Carl Marhold, 1912. Pp. 34.

Légrand.—Pratique médico-chirurgicale à la campagne. Notes et observations. Paris: Librairie O. Berthier, Emile Bougault, successeur, 1912. Pp. 152.

Scheffler.—Les Médicaments en clinique. Paris: Librairie O. Berthier, Emile Bougault, successeur, 1912. Pp. 330.

Brelet.—Traitement de la diphtérie. Paris: Librairie O. Berthier, Emile Bougault, successeur, 1912. Pp. 32.

Williams, D. G. R., and Williams, E. G. C.—Laboratory Methods. With Special Reference to the Needs of the General Practitioner. With an introduction by Victor C. Vaughan, M. D., LL. D., University of Michigan. Illustrated with Forty-three Engravings. St. Louis: C. V. Mosby Company, 1912. Pp. 204.

Cowing, W. H.—Blood Pressure Technique Simplified. Rochester, N. Y.: Taylor Instrument Companies, 1912. Pp. viii-122.

Le Favre, Caroline Williams.—Beauty of the Highest Type. A Scientific and an Artistic Aim for a Nobler Beauty. New York and Passaic, N. J.: The Health Culture Company; London: L. N. Fowler & Co., 1912. Pp. 85. (Price, \$1.)

Morel, Louis.—Les Parathyroïdes. Questions biologiques actuelles. Collection de monographies publiées sous la direction de M. A. Dastre, membre de l'institut, professeur à la Sorbonne. Paris: Librairie scientifique A. Hermann & Fils, 1912. Pp. 344.

Touraine, Albert.—Les Anticorps syphilitiques. Essais de séro-agglutination de la syphilis. Paris: G. Steinheil, 1912. Pp. 211.

Teleky, Ludwig.—Wiener Arbeiten aus dem Gebiete der sozialen Medizin. II. Heft. Mit 8 Tafeln und 8 Figuren im Text. Bericht über Seminarübungen. Wien: Alfred Hölder, 1912. Pp. 110.

Johnstone, R. W.—Outlines of Early Development. For Obstetric Students. With a Preface by Sir J. Halliday Croom. Edinburgh: John Currie, 1911. Pp. 23. (Price, 1s. 6d.)

Hoffmann, Friedrich Albin.—Die Krankheiten der Bronchien. Zweite, neubearbeitete Auflage. Mit 11 Holzschnitten. Wien und Leipzig: Alfred Hölder, 1912. Pp. iv-224.

Brosch, Anton.—Die Gesundheitskontrolle durch den Organinn. Für Gebildete verständlich dargestellt. Unter Mitwirkung von Dr. Otto von Aufschnaiter. Zweite, vermehrte Auflage. Leipzig und Wien: Franz Deuticke, 1912. Pp. ix-67.

Karo, Wilhelm.—Die Prostatahypertrophie, ihre Pathologie und Therapie. Für Aerzte und Studierende dargestellt. Berlin: Oscar Coblenz, 1912. Pp. 50.

Riecke, Erhard.—Lehrbuch der Haut- und Geschlechts-Krankheiten. Bearbeitet von Professor Dr. Bettmann, Heidelberg, Professor Dr. Bruhns, Charlottenburg, et al. Zweite, vermehrte und verbesserte Auflage. Mit 17 Farbensabbildungen und 307 grossenteils mehrfarbigen Textabbildungen. Jena: Gustav Fischer, 1912. Pp. xii-756.

Siegel, Wolfgang.—Das Asthma. Jena: Gustav Fischer, 1912. Pp. vi-164.

McDonagh, I. E. R.—Salvarsan in Syphilis and Allied Diseases. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1912. Pp. vi-152. (Price, \$3.)

Goldmark, Josephine.—Fatigue and Efficiency. A Study in Industry. Introduction by Frederic S. Lee, Ph. D., Columbia University. New York: Charities Publication Committee, 1912. Pp. xvi-800. (Price, \$3.50.)

Moll, Albert.—Sexual Life of the Child. Translated from the German by Dr. Eden Paul. With an Introduction by Edward L. Thorndike, Columbia University. New York: The Macmillan Company, 1912. Pp. xv-339. (Price, \$1.75.)

Clock, Ralph Oakley.—Our Baby. A Concise and Practical Guide for the Use of Mothers in the Care and Feeding of Infants and Young Children. Illustrated by the Author. New York and London: D. Appleton & Co., 1912. Pp. xvii-193.

Pickerill, H. P.—Stomatology in General Practice. A Textbook of Diseases of the Teeth and Mouth for Students and Practitioners. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1912. Pp. xii-268.

Groves, E. W. Hey.—Textbook for Nurses. Anatomy, Physiology, Surgery, and Medicine. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1912. Pp. xxiv-407.

Erben, Siegmund.—Diagnose der Simulation nervöser Symptome. Ein Lehrbuch für den Praktiker. Mit 24 Textabbildungen und 3 Tafeln. Berlin und Wien: Urban & Schwarzenberg, 1912. (Through Reiman Company, New York.) Pp. xii-194. (Price, \$2.15.)

Scott, R. J. E.—Gould and Pyle's Cyclopaedia of Practical Medicine and Surgery. With Particular Reference to Diagnosis and Treatment. Second Edition, Revised and Enlarged. In Two Volumes. Volume I. Abasia—Jury Mast; Volume II. Kakké—Zoster. With Six Hundred and Fifty-three Illustrations. Philadelphia: P. Blakiston's Son & Co., 1912. (Price, \$14.)

Ghon, Anton.—Der primäre Lungenherd bei der Tuberkulose der Kinder. Mit 72 Textabbildungen, 1 schwarzen und 1 farbigen Tafel. Berlin und Wien: Urban & Schwarzenberg, 1912. (Through Reiman Company, New York.) Pp. 143. (Price, \$2.15.)

Urstein, Mawrycy.—Manisch-depressives und periodisches Irresein als Erscheinungsform der Katatonie. Berlin und Wien: Urban & Schwarzenberg, 1912. (Through Reiman Company, New York.) Pp. vi-650. (Price, \$7.50.)

Miscellany.

Dux Femina Facti.—Apropos of the new governmental children's bureau, *The Woman Voter* in a recent issue remarks editorially with pardonable pride:

Five years ago Miss Lillian Wald, of the Henry Street settlement, originated a national movement for the conservation of children by means of a Federal Children's

Bureau. The idea did not seem unduly Quixotic in view of previous agitation for the conservation of land, lobsters, live stock, and other resources less valuable to the country than its young. In spite of rebuffs and discouragements, Miss Wald, Mrs. Kelley, and other prominent social workers persisted in their effort. In April of this year, the measure was successfully carried through Congress, and became effective when signed by President Taft. The purpose of the bill is to investigate and report upon all matters pertaining to child welfare. Although the National Child Labor Committee has been one of the most active workers for the measure, it does not mean that the scope of the bureau will be limited to child labor. Everything that affects child life will be considered and acted upon. The bureau will embody the spirit of collective motherliness, standing for the interests of all children. Since the movement was originated by women, has been supported by women, and will deal with children through the cooperation of teachers, social workers, and others, chiefly women, who are in touch with the younger generation, not even the most ardent antisuffragist could deny that management of this bureau is strictly within woman's sphere. News, therefore, that a woman will act as head of the new department, will be received joyfully by all suffragists. Miss Julia Lathrop, President Taft's choice for the position, is remarkably well equipped to direct this, the most womanly piece of work that our National Government has ever undertaken. She is an associate of Miss Jane Addams at Hull House, a member of the Illinois Board of Charity, a graduate of Vassar College, and a trustee in that institution. She has had years of experience in social and civic enterprises. President Taft could not have appointed any one more acceptable to women throughout the country than Miss Lathrop.

Chances for Doctors in Foreign Lands.—Secretary Robert E. Speer, of the Presbyterian Board of Foreign Missions; Dr. Edward H. Hume, secretary of the Yale Medical School in China, and Dr. Wilfred M. Post, of the American Hospital at Konia, Turkey, told of the opportunities for young American doctors to do good and win reputation in foreign lands at the Academy of Medicine at a recent meeting. Secretary Speer said: "In Persia there are only thirty doctors to 9,000,000 population. In Korea there are only thirty-six physicians to a population of 12,000,000. In Chile there is an average of only one physician to every 3,226 of the population. In Bolivia there is only one physician to every 10,000 of the population. The 5,000,000 South American Indians have not a single physician to care for them.

"Eighty per cent. of the children under two years of age in China die. People say that it is a good thing for the population of China to die in such great numbers because this prevents overcrowding. But the density of population in Germany is three times that of China and the natural resources of China, which ought to be but have not been developed, are many times those of Germany."

Doctor Hume began by telling that the Chinese had developed certain phases of medical and surgical knowledge very early, one Chinese physician at least having removed tumors as early as 200 A. D. Jaundice in Persia, he said, was treated by native physicians by hanging a black chicken with yellow legs around the patient's neck.

Frivolous Reception of Physicians' Samples.—Physicians receive so many samples of medicinal preparations that they become a nuisance. All sorts of expedients are resorted to, no doubt, to avoid being subjected to the annoyance from this source.

but we have seen nothing quite so refreshing as a recent postcard which a physician uses to inform a manufacturer that he has no objection to receiving samples, "provided they are full size, commercial, salable packages, and in no case marked 'physicians' samples,' 'not for sale,' and so on. I will then be glad to look into the matter, but in case I should decide to use your preparation I should require a certified check for \$100 in advance of the first prescription." This physician is certainly taking practical steps to curtail the introduction of proprietary preparations. Incidentally a tidy income might be built up at a hundred dollars for each new preparation prescribed. The patient might object if he knew of the little transaction. Seriously speaking, the physician in question has laid himself open to grave charges of unethical procedure. If his communication was intended to be facetious, it was, nevertheless, easily to be misunderstood, and the unlucky joker might find himself unexpectedly pilloried in one of his medical societies by some not too friendly colleague.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, yellow fever, plague, and smallpox were reported to the surgeon general of the United States Public Health and Marine Hospital Service during the week ending July 12, 1912:

CHOLERA—FOREIGN: China, June 1, present; India, May 27-June 1, 29 cases, 24 deaths; Indo China, May 14-28, 92 cases, 68 deaths; Siam (Bangkok), April 21-May 18, 660 deaths; Straits Settlements, May 12-18, 3 cases, 3 deaths.

YELLOW FEVER—FOREIGN: Brazil, April 16-June 15, 9 deaths; Mexico, (San Juan Bautista), July 7, 2 cases; Venezuela (Caracas), May 1-31, 4 deaths.

PLAGUE—INSULAR: Porto Rico (San Juan), July 3-10, 3 cases, 1 death; (Sancti Spiritus), July 3-8, 2 cases, 1 death.

PLAGUE—FOREIGN: Chile (Iquique), May 26-June 9, 9 cases, 6 deaths; China, May 12-June 1, 254 cases, 219 deaths; Cuba (Havana), July 4, 1 case; Egypt (Alexandria), June 5-16, 3 cases, 1 death; India, May 2-June 1, 54 cases, 52 deaths; Indo China, May 14-28, 21 cases, 14 deaths; Java, May 12-25, 16 cases, 15 deaths; Persia (Bushir), May 12-18, 64 cases, 61 deaths; Siam (Bangkok), April 21-May 18, 1 death; Straits Settlements, May 12-18, 4 cases, 3 deaths; Turkey in Asia, May 18-20, 2 cases, 1 death; Trinidad, April 1-June 13, 11 cases, 7 deaths; July 2, 1 case.

SMALLPOX—UNITED STATES: Illinois, May 1-31, 136 cases; Montana, May 1-31, 25 cases; New York, May 1-31, 41 cases; Pennsylvania, May 1-31, 23 cases; South Dakota, May 1-31, 48 cases; Utah, May 1-31, 229 cases, 2 deaths; Wisconsin, May 1-31, 66 cases; Wyoming, April 1-30, 8 cases; May 1-31, 8 cases, 1 death.

SMALLPOX—FOREIGN: Algeria, January 1-April 30, 21 cases; Australia (Sydney), May 12-18, 1 case; Brazil (Pernambuco), April 16-June 1, 39 deaths; Canada, June 16-29, 6 cases; China, May 12-27, present; Egypt (Cairo), May 21-27, 2 cases; Germany, June 9-23, 8 cases; India, January 1-March 30, 39 deaths; March 31-May 4, 46 deaths; May 27-June 1, 48 cases, 37 deaths; Indo China, May 14-20, 3 cases, 2 deaths; Italy, June 9-22, 14 cases, 1 death; Java, May 12-25, 5 cases, 1 death; Mexico, May 10-July 7, 95 cases, 44 deaths; Portugal (Lisbon), June 7-13, 7 cases; Russia, April 29-June 8, 33 cases, 12 deaths; Siam (Bangkok), April 21-May 18, 41 deaths; Switzerland, May 5-29, 5 cases; Turkey in Asia, June 2-8, 15 cases; Turkey in Europe (Constantinople), June 1-10, 11 deaths.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending July 13, 1912:

Ashford, Mahlon, Captain. Left Fort D. A. Russell, Wyo., with Ambulance Corps No. 1 en route to camp, Pole Mountain, Wyo. **Bayliss**, James E., Lieutenant. Left Fort D. A. Russell, Wyo., en route to camp, Pole Mountain, Wyo. **Brechenin**, Louis, Jr., Major. Left Fort Lincoln, N. D., en route to camp, Pole Mountain, for duty. **Buck**, Carroll D., Major. Granted leave of absence for two months. **Connolly**, P. B., Lieutenant. Reports arrival at Camp, Anniston, Ala., from Fort McPherson, Ga. **Craft**, Edgar D., Lieutenant. Reports on ten days' leave of absence. **Creighton**, Sam-

nel S., Lieutenant. Left Walter Reed General Hospital, Takoma Park, D. C., with detachment of Field Hospital No. 3, for camp at Anniston, Ala. **Deshon**, George D., Major. Ordered to report in person on July 16, 1912, to Colonel Charles Richard, Medical Corps, president of Examining Board, Army Medical Museum, Washington, D. C., for physical examination to determine his fitness for promotion. **Duncan**, William A., Captain. Granted thirty days' leave of absence. **Duncan**, William A., Captain. Ordered to proceed to Fort Benjamin Harrison, Ind., Fort Oglethorpe, Ga., and Fort Bliss, Tex., on business in connection with the installation of x ray machines. **Edger**, Benjamin J., Jr., Major. Left Fort Meade, S. D., en route to camp at Watertown, S. D. **Fronk**, Clarence E., Lieutenant. Reports arrival at Camp Lincoln, Ill., from Fort Benjamin Harrison, Ind. **Hallett**, H. J., Lieutenant. Reports for temporary duty at Fort Wadsworth; left Fort Hamilton, New York, same day. **Harmon**, Daniel W., Lieutenant. Reports arrival at Camp Pettus, Anniston, Ala., with Eleventh Cavalry from Fort Oglethorpe, Ga. **Harris**, S. T., Lieutenant Colonel. Left Fort D. A. Russell, Wyo., en route to camp, Pole Mountain, Wyo. **Herbert**, William D., Medical Reserve Corps. Left Fort Jay, N. Y., en route to camp at Mount Gretna, Pa. **Jones**, Edgar C., Lieutenant. Ordered to Fort Des Moines, Ia., for duty. **Joseph**, S. E., Medical Reserve Corps. Resignation accepted July 10, 1912. **Kinard**, Korwin W., Lieutenant. Left Walter Reed General Hospital, Takoma Park, D. C., with Detachment Field Hospital No. 3, en route to camp at Mount Gretna, Pa. **La Garde**, Louis A., Colonel. Relieved from his duty as instructor at the Army Medical School, Washington, D. C. **Leeper**, John F., Lieutenant, Medical Reserve Corps. Relieved from duty in Philippine Division to take effect August 15, 1912, and upon arrival at San Francisco, Cal., will proceed to his home. Granted three months' and sixteen days' leave of absence to take effect upon his arrival at his home. Lieutenant Leeper is honorably discharged from the Service at the expiration of leave of absence. **Little**, William L., Captain. Left Fort Wadsworth, N. Y., en route to Walter Reed General Hospital for duty with command of Detachment Field Hospital No. 3 to camp at Anniston, Ala. July 8th left Walter Reed General Hospital, Takoma Park, D. C., for camp at Anniston, Ala. **Lombard**, M. S., Lieutenant. Left Fort D. A. Russell, Wyo., en route to camp, Pole Mountain, Wyo. **Loving**, Robert C., Captain. Relieved from duty in the Philippine Division, and assigned to duty as surgeon of the United States Army transport *Thomas* with station in San Francisco, Cal. **McCulloch**, C. C., Jr., Lieutenant Colonel. Left Fort D. A. Russell, Wyo., en route to camp, Pole Mountain, Wyo. **McKinney**, G. L., Captain. Left Fort Caswell, N. C., en route to camp Anniston, Ala. **Marietta**, S. U., Medical Reserve Corps. Left Presidio of Monterey, Cal., en route to Camp Douglas, Ariz., for temporary duty. **Mills**, Raymond W., Lieutenant. Granted four months' leave of absence on surgeon's certificate of disability. **Patterson**, E. W., Medical Reserve Corps. Left Fort D. A. Russell, Wyo., en route to camp, Pole Mountain, Wyo. **Patterson**, Robert U., Major. Ordered to Headquarters, Eastern Division, for temporary duty in connection with the Connecticut manoeuvre campaign: July 11th, left Banks, Mass., en route to Headquarters, Eastern Division, for temporary duty in connection with Connecticut manoeuvres. **Peed**, George P., Captain. Ordered to Fort Thomas, Ky., for temporary duty. **Philips**, Henry F., Medical Reserve Corps. Reports arrival at Fort Huachuca, Ariz., with the Fourth Cavalry from Fort Bliss, Tex. **Poust**, Luther R., Medical Reserve Corps. Ordered to Fort Reily, Kas., for duty. **Quade**, O. H., Lieutenant. Left Fort Snelling, Minn., with detachment of Sixth Field Artillery, en route to camp, Sparta, Wis. **Register**, E. C., Lieutenant. Left Fort McPherson, Ga., en route to camp, Anniston, Ala. **Richard**, Charles, Colonel. In addition to his other duties is assigned to duty as instructor in military surgery at the Army Medical School in Washington, D. C., vice Colonel Louis A. La Garde, relieved. **Sherwood**, J. W., Lieutenant. Left Fort D. A. Russell, Wyo., with Ambulance Corps No.

1, en route to camp, Pole Mountain, Wyo. **Shockley**, M. A. W., Major. Left Fort Niagara, N. Y., with Second Battalion, 29th Infantry, to camp Mount Gretna, Pa. **Smart**, William M., Captain. Left Fort Monroe, Va., en route to camp, Anniston, Ala. **Smith**, Herbert M., Medical Reserve Corps. Reports arrival at Fort D. A. Russell, Wyo., for duty with the Ninth Cavalry, left Fort Lincoln, N. D., July 6th. **Sparrenberger**, F. H., Medical Reserve Corps. Is assigned to duty as surgeon of transport *Logan* during voyage to Philippine Islands, to sail about July 5, 1912. Upon arrival at Manila will resume his duties in the Philippine Division. **Tefft**, William H., Captain. Granted two months' leave of absence, to take effect about September 1, 1912. **Upshur**, Alfred P., Lieutenant. Left Walter Reed General Hospital, Takoma Park, D. C., with detachment of Field Hospital No. 3, en route to Camp at Mount Gretna, Pa. **Wadhaus**, S. H., Major. Leave of absence extended fourteen days. **Weed**, Mark D., Lieutenant. Relieved from duty as surgeon on the transport *Thomas*, and from further station in San Francisco, Cal., and to report for duty in the Philippine Islands. **Wheate**, J., Marshall, Medical Reserve Corps. Relieved from duty on United States Army transport *Logan* and will proceed to his home for further orders; resignation has been accepted to take effect September 8, 1912, granted leave of absence to and including September 8, 1912. **Wickline**, William A., Captain. Left Walter Reed General Hospital, Takoma Park, D. C., with detachment Field Hospital No. 3, en route to camp at Mount Gretna, Pa. **Williams**, A. W., Captain. Ordered to make no, to exceed five round trips to Newcastle, Del., during the encampment of the Organized Militia, State of Delaware, at that point, July 27 to August 3, 1912, to make the annual field inspection.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the two weeks ending July 13, 1912:

Dodge, A. H., Passed Assistant Surgeon. Detached from the Navy Yard, Charleston, S. C., and ordered to Naval Hospital, Washington, D. C., for treatment. **Eaton**, W. E., Assistant Surgeon. Detached from *Virginia* and ordered to *Louisiana*. **Gill**, J. E., Passed Assistant Surgeon. Detached from *Missouri* and ordered to *Panther*. **Lawrence**, H. F., Passed Assistant Surgeon. Detached from *Nebraska* and ordered to *Connecticut*. **Moran**, C. L., Passed Assistant Surgeon. Detached from *Georgia* and ordered home to await orders. **Smith**, H. W., Passed Assistant Surgeon. Detached from *Connecticut* and ordered to *Salem*. **Steadman**, W. G., Passed Assistant Surgeon. Detached from *Mississippi* and ordered to *Georgia*. **Stuart**, D. D. V., Assistant Surgeon. Detached from Naval Hospital, Philadelphia, Pa., and ordered to *Dixie*. **Wheeler**, L. H., Passed Assistant Surgeon. Detached from *Salem* and ordered home to await orders. **Woodland**, E. E., Assistant Surgeon. Detached from *Panther* and ordered to *Solace*.

Births, Marriages, and Deaths.

Died.

Gillespie.—In Fayetteville, Tenn., on Saturday, July 6th, Dr. John F. Gillespie, aged eighty-two years. **Hailes**.—In Van Wie's Point, N. Y., on Sunday, July 7th, Dr. William Hailes, of Albany. **Heiges**.—In York, Pa., on Saturday, July 6th, Dr. J. D. Heiges. **Ivey**.—At Suffolk, Va., on Thursday, July 4th, Dr. Ellis V. Ivey. **Jackson**.—In Los Angeles, Cal., on Saturday, July 6th, Dr. Craven Jackson, of Independence, Mo. **Light**.—In Lebanon, Pa., on Monday, July 8th, Dr. J. Raymond Light, aged thirty-eight years. **Marcum**.—In Cave City, Ky., on Tuesday, July 9th, Dr. A. B. Marcum, aged seventy-two years. **Pellette**.—In Binghamton, N. Y., on Saturday, July 6th, Dr. Arthur H. Pellette, of Whitney Point. **Smith**.—In New York, on Thursday, July 11th, Dr. Daniel H. Smith, aged sixty years. **Thomas**.—In Wichita, Kas., on Thursday, July 4th, Dr. P. S. Thomas, aged fifty-three years.

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THE TISSUE DENSITY FACTOR.*

In General Physiology, General Pathology, Psychogenesis, Physical Psychology, and Neurology.

By HOMER WAKEFIELD, M. D.,
New York.

The twenty minute limit for a paper epitomizing so wide a field as the present one, must of necessity yield but a vague and inadequate concept of the nature and importance of so universal a factor as we are able to-night to attribute to tissue density in its biological, physiological, and pathological relations.

The exclusively personal and independent research work which has led up to the present insight into physiological and pathological problems, was begun by the writer in 1893, and first set forth to the profession in 1902 in a serial article on the Pathology and Catabolism in Relation to the Etiology of Cancer and Allied States together with the Operation of Etiological and Therapeutic Factors (9, a). This was followed by a second article on cancer (9, b), and by others on other aspects.

In 1905 a second serial article set forth relations to Temperament, Diathesis, Dyscrasia, Predisposition, Susceptibility, and Heredity (9, c), and in the past eleven years a total of twenty-three monographs have been published, most of which have presented some aspect of the subject, and three volumes now well advanced will eventually elaborate and substantiate it in detail.

THE DENSITY FACTOR OF THE CELL.

Since the publication of my first article on cancer ten years ago, I have made repeated and strenuous efforts to obtain from biological, physiological, and pathological histologists a recognition of the low organization and density tissue cell as a product of restricted metabolic factors, and not necessarily as a rudimentary form of life, a young cell or a component of embryonic tissue. In this I have been only partially successful.

It is paradoxical that Julius Cohnheim (1) did not arrive at a different conclusion after experimentally producing at will in rabbits' ears, by ligating the supplying arteries, a complete loss of tissue organization (differentiation), attended with confluence, hemorrhagic extravasation, and of increased fluidity in stagnant blood, and profound alteration in the blood where the stasis occurs.

Despite the fact that Cohnheim observed more than any other man up to his time, 1, the relation with and the absolute dependence of tissue integrity upon the synthetic factors of the blood; 2, regardless of the common knowledge of his time, that malignant hyperplasia is invariably exhibited in inverse ratio to tissue density and organization; 3, that disintegration (hypalbuminosis) occurs sufficiently to produce the typical status of so called nucleization, and, 4, the rarefied and distended tissues and vascular dilatation give rise to the status of "vascularity" or vascularization, he could see but one explanation and make but one interpretation, that of being one of embryonic tissue growth.

Owing to the close analogy of tissues of low synthetic integrity with those of embryonic life, and in view of Zahn (15) and Leopold's (13) experiments, which demonstrated that clumps of embryonic tissue exhibited greater tenacity to life than adult tissue when transplanted to the bodies of adult animals, Cohnheim set forth his theory of malignant growth origin from persisting embryonic rudiments, and one which is in many ways unable to meet the requirements of modern criticism.

To a biologist who knows that in the higher animals the cell varies in density and organization as it passes through its life cycle from its birth to its own division, and to the physiologist who appreciates the full adulthood attained and maintained for many years by an area of tissue, afterward malignantly degenerated, the hypothesis of persistence of embryonic rests since the embryonic period is incomprehensible.

It seems strange that in view of many other observations made by Cohnheim he was not led to other more promising theories. The fundamental premise that all tissue growth must come by a preponderance of formation over waste, he interpreted as exclusively an *anabolic* increase, with no thought of possible *catabolic* stasis. The logical deduction, from which there is no escape, that metabolic equilibrium is a balanced action between an incessant oxidative synthesis on the one hand and a destructive action of functional exercise on the other, implies a possible disequilibrium of metabolism when the opposing processes are not equal. Furthermore, certain factors which are necessary to both, may retard or inhibit both, without destroying the metabolic equilibrium in that regard, yet upset it secondarily. Such a factor is oxidation.

Oxidation is both an *anabolic* and a *catabolic* factor. All synthesis is oxidative primarily, and yet the combustion phase of this same process must be rated as *catabolic*. Oxidative stasis thus implies

*Read at stated meeting of the Medical Association of the Greater City of New York, May 20, 1912.

a stasis of both anabolism and catabolism; but the synthetic stasis of protoplasm may be somewhat compensated by an acceleration of cell division, by virtue of the involved histolytic degradation of the cell elements and the involved loss of its density, though this also is offset by the fact that in all degenerative zones we find that all cells having passed a meridian of degeneration into a stage of disorganization and disintegration, are exhibited in all stages of retarded and inhibited division. Thus we have in ultradegenerative processes, the increased cell division balanced or exceeded by a decreased one, with protoplasmic synthesis almost nil on the anabolic side, and oxidative combustion and autolytic catalysis as nearly so, on the other side. Therefore, in cancerous stages of degeneration, we find the existing hyperplasia, when it occurs, is accounted for by catabolic stasis quite exclusively, thus also accounting for the fact that the growing edge, so called, of malignant growths, consists of an admixture of normal with degenerate cells that are above the meridian, but become progressively decadent as they approach nearer to the central zone of putrefaction, from which they merge gradually into normal tissue in concentric rings radiating outward.

The literature of tissue density and its physiological and pathological significance is exceedingly meagre, fragmentary, and scattered. Even Professor Huxley (3) was not explicit on the rise of tissue density with ascent in the zoological scale, when he wrote: "The peculiarity in the structure of the body walls of the hydrozoa, to which I have just referred, possesses a singular interest in its bearing upon the truth (for with due limitation, it is a great truth) that there is a certain similarity between the adult states of the lower animals and the embryonic conditions of those of higher organizations. . . . Thus there is a very real and genuine analogy between the adult hydrozoan and the embryonic vertebrate animal, but I need hardly say it by no means justifies the assumption that the hydrozoa are in any sense arrested developments of higher organisms, etc." (*Anatomy of Invertebrate Animals*, p. 113).

The foregoing is literally true in regard to tissue organization and density, though Huxley left that to be implied. It may be added that approximately, the degree of organization and density of tissue exhibited by animal forms in general, is parallel to their place in the zoological scale. The degree of integration of a tissue is indicated by its disintegration. Compare for example the degrees of slimy liquefaction of fish flesh as compared with that of chicken or beef in a similar period of favorable condition for decomposition.

THE BIOLOGICAL STATUS OF TISSUES OF LOW DENSITY AND ORGANIZATION.

Further observation seems to substantiate my old postulate that protoplasmic and cellular integration, organization, and integrity, including density and the degree of cell complexity and differentiation, are at all times in exact ratio to the status of supply of the factors of anabolism, minus or plus the existing status of catabolism.

As we have seen, a naked marine organism ex-

posed to all the perturbations of environment, never attains to the density or complex organization of tissues protected by horny or calcareous surfaces, and a denuded surface of the latter is quickly returned to the rudimentary form, whence, however, under normal conditions, it soon reattains a protective coating and thence regains its normal status of underlying tissue density and organization.

The low density and organization status is not only typical of the most rudimentary forms of animal life in the zoological scale, but it is just as much so in the early period of the life span of each individual of higher animal forms. Thus, to histologists, cells and tissues exhibiting such a status, wherever found, have been denominated *embryonic* or *young cells*, or as *embryonic tissues*, or as *reverted* to embryonic or rudimentary types. The jelly of Wharton of the umbilical cord is by common consent the most characteristic of the embryonic tissues.

It is exceedingly significant that the consistence and density of the umbilical cord is, like other low organization tissues, also exhibited as dependent upon factors of synthesis and of tissue integrity in sharpest demarcation.

Rudolph Virchow, in 1858, in his *Cellular Pathology* (8), directed attention to the fact that the artery and vein traverse the cord in their course to the placenta "without giving off a single small vessel, and it is only when they have reached the body that they begin to ramify. The only capillary vessels which are found in the whole length of the cord of a somewhat developed fetus, do not extend more than four or five lines (in rare cases a little further) beyond the abdominal walls into that part of the cord which remains after birth. The further up this vascular part extends, the greater the development of the navel. When the vascular layer is prolonged but a short distance the navel is greatly depressed; when it reaches a long way up a prominent navel is the result. The capillaries mark the limits of the permanent tissues; the deciduous portion of the cord has no vessels of its own. . . . The vascular layer terminates by a nearly straight line. . . . When we speak of nutrient vessels we mean vessels which have capillaries in the parts which are to be nourished."

THE RELATION OF AGE, DENSITY, AND ORGANIZATION TO RAPIDITY OF GROWTH.

It has long been known by physiologists that within normal limits the more rudimentary are animals in the zoological scale, the younger an organism, and the less dense the living substance, the more rapid is the growth; assimilation, synthesis, and mitosis being in equilibrium.

Charles S. Minot (4) has made a very interesting experimental investigation of growth in relation to age of rabbits and chicks, by means of weighing at consecutive periods. He confirmed previous concepts as above stated, but gave surprising figures of ratios. Doctor Minot's report shows the period of most rapid growth is that directly following conception, while that of least rapidity of growth is in old age. Conversely stated: "The period of youth is also the period of most rapid decline (of growth); that the period of old age is that in which decline is

the slowest. . . . The great fall (in the rate) takes place at the beginning, the slow fall toward the end."

Here, the period of most rapid growth and development, is that of the greatest rapidity of fall in growth rate, and, conversely, that of slowest growth is that of least decline. The period of most rapid growth is characterized by the highest ratio of the nucleus to the cytoplasm and the converse by low nucleus ratio relative to the cytoplasm is characteristic of slow growth. All young animal flesh is noted for its high proportion of nucleonic elements and derivatives, also all soft rapid growing tumors are characterized by loss of cytoplasm, leaving a disproportionately large content of nucleonic elements. The former, the sequence of *progressive*, the latter of *retrogressive* processes.

Another point developed by Doctor Minot is that cell growth occurs in inverse ratio to the differentiation and complexity of the cell, or, conversely, it grows and multiplies freely when "young" and growth is retarded correspondingly to the progress of age. This would imply that loss of its complex organization (differentiation) facilitates its growth proportionately, and this actually takes place under conditions of degeneration. We observe above, the terms youth and age represent simple and complex forms, indifferent and specialized, respectively. The adult cell represents that of full density, differentiation, and development.

The relation of use and disuse of the animal tissues, next to age, is one of the most important factors of tissue density and differentiation. Physiological exercise develops density and integration, while disuse brings softening and disintegration (atrophy). Gustav Jaeger, in 1878, published some observations on the hardening effects on the tissues of military training of German soldiers, and the effect of higher tissue densities in lessening the vulnerability of the troops to chill, colds, infectious diseases, etc. He quotes interesting tables from Beneke and Ranke in relation to this subject.

TISSUE INTEGRITY AND EQUILIBRIUM.

Any comprehensive concept of living substance, must be from the viewpoint of a constantly dependent product of an incessant process of integration and disintegration, of organization and disorganization, and of differentiation and confluence, the tissue integrity at any unit time being dependent upon the existing ratio of the two opposing processes. From this vantage ground we must view its status as an expression of the mean of the balanced action of the composing and decomposing factors.

With either factor constant, the state of tissue integrity is governed by the other factor according to its status of variation. All biologists concur that the living organism is dependent upon the favorable or unfavorable status of environment and its successful or unsuccessful adaptation thereto. This environmental influence and the reaction of the organism thereto, is exhibited through the medium of the factors of integration and disintegration, and thus through the status of its exhibited integration or the tissue integrity of the organism.

I hold that in large measure the material expression of adaptation to environment, of acquirement

of immunity and the attainment and hereditary transmission of acquired characters, is one of variation of tissue density and organization, in both their physiological and pathological relations, and they are thus the principal bases of hereditary disease.

In Hamberger's classic hemalogical observation, we have a vivid exemplification of the ease of reversal of variations of integration and disintegration. In a normal alkaline state of the blood, albumins and phosphates pass from serum to the cells and chlorides pass from the cells to the serum, and, conversely, if the blood is slightly acidulated, albumins and phosphates pass from cell to serum and chlorides from serum to cells. Also the foregoing factors being constant, he observed that oxygen produced the *former* and carbonic dioxide the *latter* result.

The alkaline and oxygen factors of our body organizations and synthetic integrations, and, conversely, the anoxemic and acid factors of hyalalbuminosis, disorganization, disintegration, and their incidental albuminurias and phosphaturias, the relation of the salt equilibrium of the body to edema and other familiar clinical observations, exemplify the practical value of a comprehension of these vital rudiments. Hypertrophy and atrophy are contrasting extremes of pathology.

The greater dependence of the nobler tissues upon incessant oxidation synthesis, is illustrated by the wet brains, distended integuments, and glandular decadence of chronic alcoholics who divert their available systemic oxygen to a counter oxidation of an excess of a highly oxidizable substance—the alcohol. It is a familiar physiological observation that the higher specialized tissues first succumb to suboxidation, and in direct ratio to their stage of organization.

The fall in general body oxidation as evidenced by the temperature depression directly following birth, incident to the adaptation of the body to the new environmental temperature, is attended with metabolic retardation and decrease of assimilation and synthesis in proportion as the superficial capillary blood is determined to the great venous trunks.

Thus we have the familiar cyanosis, relative polycythemia, icterus, edemas, hemorrhages by diapedesis, not by rhexis, tetanus infections, scleroma and fatty degeneration, especially of the epithelial structures, glandular organs, skin, etc., of the newly born, as a hyperesthetic reaction.

Whether it is an anemia or an unusual chill at full term, or unusual susceptibility to cold of a premature birth, the effect is the same. Extraordinary chills or vulnerabilities of previous suboxidations, circulatory inhibitions of cord kinks, etc., bring the more severe edematous, hemorrhagic, or sclerematic (coalescent) conditions of the superficial tissues, or general fatty degeneration, which is rare in man.

The observed exaggerated reaction to cold of the peripheral tissues of infants of premature birth, but illustrates the relationship of tissue density to reaction phenomena, of which we are to speak more presently, as expressed by the lowest tissue densities known to postnatal man.

In the words of Waller: *We can live seconds*

without oxygen, days without water, and weeks without food. This is illustrated by the observations of Schafer that resuscitation of the drowned is impossible after one minute of displacing the air of the pulmonary alveoli by water, owing to their tissue coalescence. So readily do the soft tissues of the lungs lose their organization when the incessant intake of oxygen is abruptly inhibited.

Acute dilatations of the stomach and heart occur under the temporary retardation of oxidation, incident to the stress of serious and abrupt respiratory and circulatory derangements.

All transition stages of persistent and insidiously attained lowered tissue densities and disorganizations are found, as representing every degree of oxidation synthesis, from all manner of etiological factors, local and general.

Enlarged, dilated, ptosed, and prolapsed organs represent the former, and generalized softness and flabbiness of tissues, atony, and flaccidity of musculature express the latter. Round shoulders, a drooping figure, spinal curvature, flat chest and abdomen, lengthened and relaxed muscles, flatfoot, weakness and apathy, a sluggish passive circulation, awkward and incoordinate movement, a shuffling gait, predisposition to fatigue, combined with premature and exaggerated vital reaction phenomena are common exhibitions of general tissue extension and expansion, and are the recognized *stigmata of degeneration* observed among the laggards and sluggards of school children.

THE DENSITY FACTOR OF TISSUE STRUCTURE.

Throughout the body the tissue density factor is an important one in varied respects. In relation to circulation the loss of the vascular tonicity of expanded and flabby tissue is familiar to all. Dilated vascular walls imply a passive hyperemia and a sluggish circulation.

Elongated muscles, ligaments, and aponeuroses imply weakness, incoordination, and general incapacity. The rounded shoulders, drooping figure, curved spine, shuffling gait, slovenly speech, and apathetic attitude exhibit the muscular atony. Gastric and other visceral and pelvic ptoses show the excessive elongation of supporting ligaments, and hernias exemplify the incapacity of supporting aponeurotic fascias.

It is of interest here that many years prior to the much heralded discovery of Dr. A. T. Still, of Missouri, Dr. Frederick Jolly (11), of Strasburg, discovered that in so called neurotic individuals of lax habit there occur vertebrate subluxations, which are due to elongated supporting ligaments.

The relation of tissue density to its *permeability* is one of great importance. The exudation in progressive order of water, serum, and blood from rarefied tissues is well known to us all in pathological cases, and edemas, hemorrhagic extravasations, and purpuras are not infrequent in some advanced cases.

The so called parenchymatous bleedings of rarefied tissues are the best examples of loss of tissue permeability to the blood. In these cases there are no definable jets or streams of blood but are so generalized as to simulate exudations from the pores of a fine mesh sponge. Instances of this type are those of the lungs of circulatory stasis of car-

diac discompensation, those of the large soft *post-parturient* uteri, the bleedings of hemophilia, etc.

Every stage phase of density in the order of the *biological series*, is expressed in a parallel permeability of the tissue to fluids. Ranging from the highest integrity of health, we have exhibited in pathology every transition stage of degeneration extending to death, at which time general transfusion and blending of the body fluids inaugurate general disorganization and disintegration.

The relation of density to osmotic pressures of tissues, is worthy of attention. Rarefied cells and dilated interstices, low surface tension and osmotic pressure, are responsible for innumerable deposits in such tissues of calcareous, urate, oxalate, and tissue and blood detritus and pigments, as well as bacteria, which often find themselves superior in vitality to the degenerate cell in the struggle for existence following the englobement (phagocytosis).

The problem of susceptibility to infection is closely related to the density of tissue in all respects, as to invasion, favorable soil, vital resistance, reaction weakness, impaired oxidation, autolytic powers, and all the other factors which go to make up the prophylactic capacity of high tissue integrity.

The vulnerability of rarefied tissue to inflammatory phenomena is worthy of further investigation—especially in the higher and more violent forms of inflammation, such as diphtheria and erysipelas, are the affected and vulnerable tissues observed to be rarefied. The proneness of edematous tissues to highly inflammatory infections, as erysipelas, is well known.

The surface tension and osmotic pressure properties of various tissue specific gravities and densities present other phases of interest to the physician, namely that of the selective action of medicines for rarefied tissues. I have in previous contributions on this subject, explained how ergot administered hypodermically is taken up and exerts its condensing action upon expanded tissues, always selectively and exclusively in medicinal doses.

Our attention is now directed to the interesting researches of Wassermann (14) in Berlin, who is apparently putting to practical application two previous postulates of the writer, namely the predisposition of rarefied tissues to deposits of solid particles, and the relation of catalytic properties to oxidation. Wassermann selected the fluorescein dyes for his experiments, and finally gave preference to eosin.

The violet light fluorescence of this group has been heretofore applied with varying success to malaria (esculin and fraxin) and to cancer (methyl violet), but not hypodermically, I believe, in either case. All of the fluorescent dyes undoubtedly act as catalytic activators or accelerators of oxidation, and should be expected to be specific in those cases only where catalysis is the remiss factor. Oxygen and alkalescence must be also provided when indicated. The selective determination to, and action upon the diseased tissues by these dyes, must depend upon the difference of surface tension and osmotic pressure.

The area of low density tissue is easily followed by the outline of the dye colored tissues.

Another example of the exhibition of tissue impregnation by virtue of its loss of surface tension and osmotic pressure, incident to rarefaction, is fatty infiltration. I regard a unit tissue expansion as a necessary preparatory event to all adipose tissue deposit, which is especially well marked in obesity.

The so called coarseness of the integument of ultrafat individuals is due to cutaneous expansion. The general low density and specific gravity of fat persons, as evinced by their ability to float in water, is well known. The same suboxidation factors of disproportion of fatty formation and fatty degeneration, are responsible for the rarefaction of tissues impregnated with it.

In fatty livers, for example, the liver parenchyma sometimes so far loses its integrity as to become of almost liquid consistence.

Amyloid, pigment, tissue disintegration detritus, blood, lymph, and water disseminations, are among other instances of infiltration of rarefied tissues of expanded cells and distended interstices. The dark skin pigmentations of tropical climates are examples of deposits of heat rarefactions. Elective dye stainings of cancers and other pathological lesions are illustrations of impregnations by virtue of pathological rarefactions. Normal tissues are exempt.

DENSITY AND CONTRACTILE PHENOMENA.

Contraction and expansion (extension) are fundamental expressions of the most fundamental property of irritability of living substance. The simple cell withdraws its deployed pseudopodia as a recoil, upon extrinsic perturbation, and commonly contracts itself into a compact spherical mass so tightly that it may, and not infrequently does, prove fatal to the organism. All actual death occurs in the physical phase of contraction.

Contraction and expansion in the unicell present a certain analogy to that of the muscle fibre, the spherical contraction of the cell comparing with the shortening and thickening of the muscle. The contraction of unicellular organisms, however, compares much more directly with the smooth than the striated muscle fibres. The striated or voluntary muscles differ principally owing to their contractions and extensions being based upon the existing equilibrium length of the muscle, whereas the smooth muscles simply contract and relax, analogously to the simple cell. In the striated, the condensations and rarefactions govern the equilibrium length.

In view of later applications, I would direct attention to the analogy existing between the contraction of rudimentary organisms, influencing the size of contained vacuoles, and that of capillaries in muscle and other tissue structures they so completely traverse in their ramifications. The absence of special circular muscle walls and the dependence upon the general contraction by the surrounding muscle substance, is common to both vacuoles and capillaries.

BASIS OF VASOMOTOR COMPRESSION BY CONDENSATION.

Verworn (7) cites several types of marine, and some fresh water forms of life which exhibit the remarkable ability of rising or sinking slowly in the

water at will, by virtue of changes or specific gravity of the cell substance. Others have been accredited with accomplishing the same end by distending their vacuoles with carbonic dioxide or ejecting it by some form of collapse, or by condensation contraction, as by cold. It is observed that simultaneously with the dilatation of the vacuole, the plasma becomes rarefied and duly impregnated with osmotic substances.

The slipper anamalcule, a quite common inhabitant of stagnant ponds, etc., exhibits two vacuoles and a communicating system of spindle shaped cavities which radiate from them through the abounding protoplasm, serving as feeders to the vacuoles. By virtue of alternate contractions and rarefactions of the surrounding protoplasm, these organisms maintain a current of water through them, which supplies them with oxygen and food, mechanically analogous to the systoles and diastoles of the heart in action upon the contained vacuoles.

Thus it is observed that the compression and dilatation of contained cavities and vessels, by virtue of simple condensations and rarefactions of non-muscular tissue involvement, is by no means rare in general physiology. We shall see later that peripheral tissues of the higher animals exhibit a capacity for dilatation and contraction of the superficial capillaries, not voluntarily, but as influenced by the emotions. To this, man is probably most susceptible of any animal.

We learn from marine physiologists that the inhabitants of deep sea bottoms attain so high a density in withstanding high water pressure as to prove fatal if too suddenly released from the environmental pressure, probably owing to too violent expansion.

Ameboid motion and the mode of locomotion of unicellular organisms involve alternate contractions and condensations.

Engelmann (2) and Schäfer (6) have determined that in the cross striated muscles of the higher animals, during contraction and extensions, alternate rarefactions and condensations of the two disclike compartments, termed the *isotropic* and *anisotropic*, occur in inverse ratio one to another. Schäfer has discovered minute tubes connecting these compartment discs, running parallel one to another, in the direction of the fibres. These tubes are dilated during contraction by fluids flowing through the discs shortening and thickening them in contraction waves, as they extend from one to another, with remarkable rapidity. The reverse phenomena of extension involve thinning and elongation.

The relation of muscle reaction to the mental function, as we shall see later, is one of time relation of muscle contraction, and in turn one of fluidity of one or more of what go to make up the density of the muscle aggregate. The foregoing then is important in connection with the physiological and pathological applications to come presently.

The density of muscle bears a direct relation to its inherent oxidation processes, upon which depends its synthetic anabolic integration in compensation with its catabolic disintegration, which are incessant, and vary only in degrees.

Ranke (5) found that muscle tetanized by ether,

strychnine, or galvanic current, showed an increased content of water, which he construed to be due to decreased internal resistance to absorption (lowered osmotic pressure) simultaneously recognizing a condition of tissue dissociation.

Tetanus, however, is a rapid destroyer of living substance, for it not only brings the respiratory processes of the rhythmic motion to a standstill, but all tetanic contractions are manifold more exhausting than remittent ones, thus admitting of no alternate periods of recuperation.

The analogy of early exhaustion of an open circuit battery when the circuit is kept closed, in contrast to a long life when operating an electric bell or other vibratory mechanism, is a very close one to living tissue capacity.

(To be concluded.)

THE NEWER TEACHINGS OF THE DISEASES OF THE ALIMENTARY CANAL.

By MARK I. KNAPP, M. D.; LL. B.; LL. M.,
New York.

It has always been my practice in seeking the explanation for certain symptoms or phenomena, first to exhaust all the available data of the domain of the exacter sciences and, as it so happens, these always proved sufficient. Whatever problem presented itself, I sought the explanation through the settled facts of anatomy, or physics, or chemistry. Especially the two latter sciences have served me well; they are the practical sciences which do not indulge in or permit speculation, and the physician, above all, must be a practical man. Here let me quote two great men:

Said Leyden to his students: "Meine Herren, um die Diagnose müssen wir nicht so zimmerlich sein; heilen sollen wir." "Gentlemen, about the diagnosis we must not be so punctilious; our duty is to heal."

Riegel, in his preface to his book on gastric diseases, says as follows: "Der Endzweck alles ärztlichen Tuns ist heilen und helfen. Der Praktiker hat das Recht den Fortschritt auf irgend einem Gebiete der praktischen Medizin nach dem Gewinn, der der Heilkunst daraus erwachsen ist, zu bemessen." "The final aim of all medical activity is to heal and to help. The practitioner has the right to measure the progress in any branch of practical medicine by the benefits thereby accruing to the healing art." In addition to these two sentiments, let me quote the gem of an editorial in this JOURNAL for September 9, 1911: "What is required is the acquisition of the scientific type of mind; the mind that accepts nothing from authority, but approaches every problem as a skeptic and yields only to irrefragable proof." The physician must be practical. However highly he may value his teachers, no matter how profound be his regard for the old teachings, the teachings must square with his practical experience and failing in this, the erroneous teachings must yield to better, exacter proof. We are physicians, sworn to do all in our power to better the physical welfare of mankind. Should ever the welfare of mankind conflict with our esteem for our teachers, our sworn duty bids us

take the right path. In my experience I was confronted with this latter, very unpleasant problem more than once and had to use a great deal of diplomatic artifice, whereby the welfare of the patient was uppermost in my mind. This can well be done without violating the code of gentlemanly and collegiate manners. The practical physician must at all times be ready to seize on his storehouse of knowledge of physics and chemistry. While our views in physiology and pathology are undergoing changes quite frequently, the set laws of physics and chemistry do hold their own. Our knowledge of physics and chemistry is constantly widening, but the laws once established are rarely changed. Physics has added the x ray and wireless telegraphy; chemistry is constantly adding new facts of analysis and synthesis; but such innovations in their respective domains do not deny previously established laws. Differing in this respect are the teachings of physiology and pathology, which occasionally, not to say often, controvert previously accepted views. The reason for this lies in the fact, that originally they were accepted without adequate proof. Our inherent desire to be dogmatic, our wish to dominate the field of our activity make us blind to a good many mistaken inferences, drawn, possibly, from otherwise correct observation. To look upon our own works critically, from the standpoint of a disinterested person, is well nigh impossible.

Again, the physician is not dealing with dead bodies as is the physicist or the chemist. The material which the scientific physician handles is very much more complex and depends upon a great many extraneous influences. Let us take for instance, the test for blood. Are all the given tests absolutely infallible and capable of but one interpretation? Must we not exclude the ingestion and presence of certain vegetables and drugs before we are permitted to draw our conclusions? Are the tests for bile not subject to the same criticism? Our present progressive researches in bacteriology have gainsaid and disproved many of the previous "truths" in that most fascinating study. What warranty have we as to the stability and viability of our present doctrines? How soon before these are in turn relegated to the scrap heap? Let me mention but one instance in illustration. When I was a medical student, the teaching was something like this: In a case of purulent peritonitis, write out the death certificate and fill in the date after. In those days of "scientific treatment" one surgeon vied with another in the kind and strength of the bactericide (unfortunately the Norman and Teutonic warlike spirit is still rampant in medicine); we surely killed the microorganism and,—the patient?—well, he died because his "vitality" was low. Nowadays, having shaken off, for the most part, the shackles of the bactericidal delusion, nowadays, when purulent peritonitis is often treated by merely drying off the pus with a clean aseptic towel, the patient simply refuses to die, apparently enjoying the society of the microorganisms, which, we know, are still sojourning in his abdomen. Nay, we now even transplant entire organs from one body into another with acknowledged success, although we know, or at least we ought to know,

that the organ, so transplanted, cannot possibly be either antiseptic or aseptic. Many tests have been devised for typhoid fever, for tuberculosis, for the pancreatic function and, for the present rage, syphilis. They are all of an evanescent nature. Some already have died out and the rest are doomed to a like fate. Such tests are, *a priori*, illogical; they are started from wrong premises. An agency of unknown constitution is employed upon a person whose constitution is likewise unknown; what may we expect? From time immemorial the medical profession has used the percentage system. One devises a new test and, truthfully gives us his percentages of good results. If he is a good fellow and therefore has some following he will be hailed as the great discoverer, only to be disappointed in the near future. Scientific facts have no percentages other than fully one hundred per cent. There are no exceptions in natural phenomena. Under the same conditions the same is always bound to result, irrespective of time or locality.

Let us not beguile nor flatter ourselves. Rules with exceptions are man made; phenomena of nature have no exceptions; and medicine does treat only with phenomena of nature. No difference at what period of time or season, or at what latitude, or at what altitude, hydrochloric acid can never be manufactured from the elements of sulphur and nitrogen; we must have somewhere the elements of chlorine and hydrogen. Never will twice two give any other result than four. Every science must undergo transitional, developmental stages and so also medicine. But let us keep that fact in mind, let us be open minded and unprejudiced, let us try, but let us not be axiomatic and put down a percentage of seventy-five, when we only had an experience of six cases. Let us put down the actual number of cases we had and the number of the good results, and let the reader draw his own conclusions. And, when we don't know a thing, let us confess it in a manly, straightforward manner. Let us not shift the blame upon patient bacteria or the innocent nervous system, simply because we must have a scapegoat. It is this unfortunate custom which brings medicine into disrepute and swells the ranks of the believers in the various fakes. The sick person, the medical patient included, wants to be cured and does not care how. Just because we cannot explain one or another symptom or condition gives us no license to lay the blame at the door of the nervous system. A disease is not nervous simply because we happen not to possess the means of identifying the true culprit. I do not deny the existence of diseases of the nervous system or the proved function of individual nerves, but I do maintain that the burden of proving one's contention rests on the one who makes such contention. If one maintains that a certain disease is nervous, the burden lies on him to prove, beyond a reasonable doubt, the diseased condition of the nerves, which he blames as being the cause of the disease.

It is entirely too serious a matter to laugh at the manner in which our writers attempt to prove the nervous character of a given condition. It is not that this or the other nerve has been actually found

diseased; quite the contrary. It is maintained that no pathological condition could anywhere be discovered. Notwithstanding this positive denial of the presence of any lesion, and contrary to all sane reasoning, a condition is branded "nervous" just because nothing could be found. Under such circumstances the irresistible conclusion forces itself upon us that "nervousness" and "nothing" are synonyms. If so, why then resort to that class of drugs which we call nervines? Are nervines also to be considered as the synonyms of "nothingness"? Do we wonder why patients hold physicians in contempt and go to worship strange gods? In order to elicit the truth, law has evolved, through centuries of experience, the salubrious rule that the burden of proof is upon the proponent. In other words, the law says that one must prove what one maintains, and, furthermore, makes the distinction where only property rights are at issue, and, where the very life and corporeal welfare of the person is involved. Where the issue is one of property, the law is satisfied with the proponent proving his case by a mere preponderance of evidence. But, where the question is the very physical welfare of the person, the very life of the individual, there the law demands proof of a much higher degree and demands that the proponent prove his case beyond any reasonable doubt. Does not medicine treat with the welfare and the very life of mankind? Can medicine, without stultifying itself, be less exacting than law in its demand of proof beyond a reasonable doubt? Why should not medicine demand at least the same degree of evidence that has proved necessary in law? It is bewildering when one reads how medicine analyzes the causes that lead up to the assumption of a "nervous" basis for the disease. One assumption is piled on the other; in vain does one try to find a single proved fact to underly the parent assumption; nothing but fantastic imaginations. Assuming that A and B, who had many quarrels before, had been seen entering together a house in which no one else was known at that time to be present and that subsequently A was found dead as the result of a blow with a brick. B, under these conditions, might properly be convicted of murder. Assuming now the same identical circumstances, except that the window was raised and a passer by, who was not noticed by anybody, had thrown the brick which killed A. Manifestly, in this latter instance, the inference drawn in the first illustration would be wrong.

It is true that in the laboratory the excitation or the severing of the vagus or the sympathetic will produce certain effects. But, how are we justified always to assume from the symptoms that the excitation issued from the same clinical cause? I cheerfully grant that in the final analysis all phenomena of an active nature are controlled by the nervous system. We can therefore never go wrong by ascribing all disease to some excitation or inhibition by the nerves or ganglia. But, such teaching is entirely too broad from the practical, clinical standpoint. Admitting this, the next question is, what was the eliciting influence? Our profession is too high, the highest, and dealing with problems of the greatest importance to mankind to permit

of any hiatus in our knowledge to be bridged over by common platitudes. Let us cheerfully admit our lack of definite data as to such specific fact rather than accuse or even suspect an organ because we cannot at present explain a certain phenomenon. If we are to assume that the "nervousness" is due to an actual but not yet discovered disease of the nerves, we must needs assume the actual existence of such hidden lesion. And, if it is existent, it must continue to exist until it is eradicated from the body by one means or another. So long as there is a lesion there must be symptoms; these two conceptions are inseparable. But, we are told, that the very characteristic feature of nervousness is its inconstancy in the manifestation of symptoms; the symptoms come and go. True, this is assumed, but its truthfulness has never been demonstrated.

I wish here to abstract a few passages from a recent, very able exposition on Neuroses of Inner Organs and Affections of the Nerves of Organs, by Professor A. Schmidt, of Halle, Germany, which appeared in the *Münchener medizinische Wochenschrift*, August 10, 1909. Says Professor Schmidt: "... But I believe that the majority of the practising physicians are convinced of the absolutely increasing number of nervous affections of inner organs. To be sure, personal experience can prove nothing and we have to rely entirely upon our *impressions*, the same as in neuroses in general. . . . It is yet to be determined whether also organic lesions of the brain, of the central nervous system, may produce similar disturbances of the functions of internal organs as the psychoneuroses? *Until now we have no proof for it*, but we have to take into account such possibility. . . . It is admitted by von Strumpel, that the meaning of the word *nervous* is not yet fully defined, and that we like to use it where an examination has hitherto failed to discover anatomical changes. . . . We reserve the term neuroses for such affections in which no anatomical changes can be found." This graphically sums up all our positive knowledge, upon which such a large number of diseases has been built up. What a preposterous conglomeration of delusions is given us as scientific facts! In what jurisdiction of logical reasoning would such ridiculous assumptions, without a single positively demonstrated and identified fact to rely upon, ever be tolerated, much less given any probative value?

The vagus, especially, has been singled out to bear the brunt of responsibility for the miseries comprised under the term of neuroses of the digestive organs. By doing so the writers at once positively identify the culprit; it is the vagus we are told. We are thus confined within the very narrow limits of a single nerve. We know the vagus, we know its origin, we know its course, we know its distribution. Those alleged neuroses are not ascribed to some derangement of some portion of the cerebrospinal system, which would necessitate the curious one to wade through the entire mass of that system with the chances of success very much against him. Nay, we are told it is the vagus. Notwithstanding this certainty, and the comparative ease of searching for the lesion, no lesion has yet been found anywhere in the course of the nerve. This, however, does not deter those who wish to

give the explanation of nervousness. As a dyspepsia is called nervous which is inferred from a general excitable condition of the patient, we must assume the presence of both, the dyspepsia and excitability. Excitability is ascribed to a peculiar influence upon the nervous system. We must reason, therefore, that the nervous system is somewhere at fault. Let us now begin elementary reasoning.

The nervous system, like all other tissues, requires nourishment. The nervous system does get the nourishment, without which it could no more live than any other tissue of the body. This nourishment is carried to it through the vascular channels. Whence does the nervous system get its blood? Is the blood for the nerves specially imported? Or is there a special selective arrangement in the heart which separates the good part from the blood and sends this alone to the nervous system? And, now, what is blood else than the end product of digestion? Practically, it is nothing else. If the digestive functions are bad, can we conceive that the product of such bad digestion is other than bad? When this bad product enters the blood channels, it cannot circulate as good blood; it circulates as bad blood. The nervous system, not having any distinct blood supply of its own, with the rest of the body gets the same bad blood supply. Receiving such bad nourishment, how can we imagine the nervous system not to suffer? It must suffer and its suffering is evinced in the instability of its functions which expresses itself outwardly in the manner which we term *excitable*. How can we expect that the nervous system should act well, when its nourishment is not good? The prerequisite of the good function of any organ is, that its nourishment must be at par, must be normal, must be good. Bad nourishment must have bad function as a result, and the bad nourishment of the nervous system must result in the bad function of the nervous system. This is elementary; there is no exception to this.

Medicine prides itself on its emergence from medieval mysticism and its substitution of pathology for the mere speculations of ages gone by. We look back with sympathetic indulgence upon the resourceful imaginations of our forbears in medicine. But wherein do we differ from them? If our forefathers assumed the existence of good and bad humors, they at least effected good results with venesection which therapy was based upon such theory. Can we say as much of our present groping around and flitting from one unintelligible theory to another? We pat ourselves on the back and prescribe stimulants, sedatives, etc. But no sooner have we exhausted ourselves in praise and exhilaration of the stimulating action of a certain drug, when we hasten to make amends for overenthusiasm by stating that such drug does not always act so. Why? The reason is, that such a division of the drugs is purely artificial, based on a subconscious egoism.

Our present and constant advance in chemistry should long since have abolished such an unscientific subdivision. A drug is not an element; it is a chemical compound capable of acting upon and reacting with other chemical compounds. If the chemical compound, represented by the drug, opium, does allay pain, it does so because of its

action upon or its action under some other chemical compounds of our bodies. Whenever the reciprocal elements resulting in the allaying of pain are present, the anodyne effect of the opium will ensue. But the banishment of pain will not take place if the necessary and reciprocal elements to produce such effect are not present. Not even the mere presence of the elements of chlorine and hydrogen forces the conclusion, that, of necessity, hydrochloric acid will result. True, we must have both these elements to start with. But, unless the peculiar chemical conditions are at the same time present, hydrochloric acid will not result. In order to be scientifically correct, we might state that under certain conditions which seem generally to prevail, opium has the quality of also allaying pain. This would do away with the setting forth of opium as an anodyne and then looking for excuses why it does not act so in other cases. Similarly, and with like utter disregard to scientific reasoning, have recently some writers first assumed that atropine and physostigmine act only upon the vagus and then followed up this reasoning by deducing from the good results following the administration of these drugs in certain conditions that such certain conditions are due to some bad influence of the vagus. The unpardonable error here lies in the fact that it remains yet to be proved whether the first proposition is true without exception.

Again, why must we blame the nervous system for symptoms and conditions we cannot otherwise explain? Is it true that such symptoms and conditions cannot be otherwise explained? Are we irretrievably committed to the grave fallacies of *nervous* and *nervousness*? Do we not possess scientific data which will give us a truer explanation for the phenomena which we explain as being nervous? Is it true that the basis for pathological manifestations must necessarily be an anatomical entity? Since the alimentary canal harbors solid, fluid, and gaseous bodies, shall we go amiss if we assume that the laws of physics generally applicable are equally applicable to such bodies when they are within the alimentary canal? Why must we separate ourselves from the teachings of physics and chemistry? Do the laws of physics and chemistry come into abrupt abeyance the moment our own bodies are at issue? Does gravity cease to operate when the bottom has been removed from under us? Does a bullet penetrate a piece of wood but not our bodies? Does water in a vessel fill the bottom first, but the ascitic fluid rush first toward the diaphragm? Does gas inflate a balloon but fail to inflate the intestine? Is not the entire knowledge of physiology based upon the laws of physics and chemistry? Why, then, not exhaust all our known resources before we wander off into regions unknown?

Take, for illustration, the cardiospasm. We are unable to determine its cause; try as we may, we have not succeeded in laying an anatomical foundation for it. Why despair and accuse the vagus which has heretofore refused to give us discovery (this term is borrowed from jurisprudence)? A person has been suffering from diarrheas for years. All our patience has been exhausted in a futile

search for an anatomical basis. Why take the short cut, and conclude upon the culpability of the nervous system, which fails to show any lesion? A patient has been suffering for years from what is erroneously known as mucous colitis. No cause can be assigned for it; why call it nervous? That all our actions, voluntary as well as involuntary, are controlled by the nerves is not denied. But the nervous system itself merely represents an anatomical structure and is incapable of initiating anything spontaneously; it acts in response to an excitation. Whether the excitation is of a mechanical nature, as, for instance, the pressure upon a nerve or nerve centre, from whatever cause; or whether it is of an anatomical nature, such as inflammation or sclerosis; or whether it is of a chemical nature which may be fleeting, evanescent; whatever else be the excitant, without any excitant to cause it to act, the nerve does not act of itself. Unless the nerves themselves are diseased, a condition which must be proved to exist and not merely assumed, the part that the nerves play is only that of conducting an impulse; but there must be an impulse. Whether the cardiospasm is due to an impulse transmitted to a ganglion, or to a nerve, or to the sympathetic or to the vagus; in any case the presence of an impulse must be presupposed. And, in the absence of a demonstrable lesion, we must turn for an explanation to the other agencies, which, physiology teaches us, exercise concurrent jurisdiction in the maintenance of our health and life. We must first exhaust physics and chemistry before we are justified in yielding to our innate love of fascinating mysticism.

In the subsequent chapters I will attempt to prove that we can get along exceedingly well and explain all or almost all the symptoms that are manifest in diseases of the alimentary canal, without having recourse to the mythical nervousness or some chimerical impulse of the vagus or sympathetic.

INSANITY AND HEREDITY.

By JOHN B. MACDONALD, M. D.,
Concord, N. H.

Insanity, to-day, forms a subject of exceeding interest because of the light thrown upon it by investigators of the problems of heredity. As an independent and distinct disease entity it is losing its identity. With our present understanding of the subject, the arbitrary lines formerly drawn between insanity, feeble-mindedness, and such mental abnormalities as criminality, etc., prove but insubstantial, artificial divisions founded mainly upon symptoms, —divisions serving to outline clinical groups, but not based upon underlying causes. Misleading divisions, therefore, they have proved, giving rise to errors in prognosis, management, and treatment; for efficient management, adequate treatment, and intelligent prognosis depend upon correct understanding of causes.

Until very recently the medical man has regarded insanity as a distinctly medical condition, as such offering the prospect of improvement, recovery, and cure under medical treatment. From the early days

of the Worcester (Mass.) State Hospital when from seventy-five to ninety per cent. of cases measured the then asserted possibility of cures of recent cases, down to the present time when a recovery rate below twenty per cent. of admissions seems to demand an apologetic explanation in hospital reports, the promise of cure has been kept to the ear and as often broken to hope. This attitude, certainly not born of selfish motives, may and should merit praise when we reflect that it is characteristic of the earnest medical mind to hope even against hope so long as there remains a cause, a symptom, a single pathological feature not explained or understood; or it may revive the ancient accusation that the medical mind is peculiarly liable to the tendency to reason and conclude by precedent, and is therefore in a measure bounded and restrained by traditions.

However this may be, there are signs that we are about to execute a right about face movement in our dealing with insanity. The studies of heredity and the startling deductions drawn from biometrical and Mendelian investigations seem to prove to the satisfaction of all thinking persons that the insanities (excepting the small part we may call acquired insanity) feeble-mindedness, criminality, and like degenerative conditions are simply branches of one family tree,—defect; and the questions of how best to deal with the insane, the feeble-minded, and degenerate resolve themselves into one problem—the problem of the defective, or “the unfit.”

Against the ponderous force of the evidence submitted by students of eugenics, ideas and opinions formerly held regarding curability of various forms of mental diseases (admittedly degenerative in origin and tendency) and racial improvement along the lines of training, education, and all that is comprised by the term better environment, become feeble and unavailing. The conviction is forced upon us that inherent character and material civilization have little or no relation or connection; that environment is of much less importance than heredity in the mental, moral, and ethical evolution of mankind; that treatment of defective conditions by medical means is in large measure useless, since it aims to restore what the sufferer never did, and never can possess.

The theories of eugenics rest solidly upon Weismann's law, which represents that the germ cells which propagate the individual are independent of the body cells which make up the structure of the system; that education and other acquired characteristics have no effect upon the heritage of the germ cells, which are distinct and apart and propagate only their own defects and virtues. Inheritance, then, depends upon certain determiners in the germ cells, and upon certain of these no amount of education, training, or favorable environment can have influence. The study of genealogy aims to test these theories and to trace out some of “the secrets of descent and destiny,” and the results of the investigations pronounce in effect that our destiny is in our descent.

Dr. Charles L. Dana, in the *Medical Record* of 1910, wrote as follows:

The laws of heredity as discovered by Mendel and elaborated by his followers show that you cannot, by mixing hybrids, produce a pure stock, that there will always be a

majority of hybrids, a minority of pure stock, and another minority of bad and abnormal stock. If for example, we mix the Anglo-Saxon with, let us say, the Spaniard, we never get a pure blended stock comprising the best qualities of either, but we get a hybrid stock, with a minority of individuals showing Anglo-Saxon traits in predominance, and another showing Latin traits predominant. Furthermore, if we bring into our nationality races or stocks with distinctly abnormal and antisocial traits, these can never be bred out of our nationality by interracial mingling.

Coming to the physical and mental diseases, the same laws are supposed to apply. We cannot by the best possible methods of training and education make a poor stock with mental abnormalities a good one, and if we mix an abnormal stock with a good one such mixture will never entirely breed out the bad.

Galton's law of ancestral inheritance is simply this: That of all the heritage which an individual possesses one half, on the average, comes from his parents, one quarter from his grandparents, one eighth from his great grandparents, and so on. Man has what Galton calls a “Nature” or individual character and personality. This is made up of three things: First and most important is his heritage or his inherited characters. Second, certain changes or additions due to accidents of his conception, and growth before birth. Third the acquired traits resulting from his education and environment. The part of man's “Nature” belonging to heredity is the large and fundamental part especially as regards general characters and species.

A congenital predisposition to insanity, according to Morselli, exists in more than half or in about two thirds of the insane; and a morbid heredity constitutes its most frequent cause. The peculiar condition founded upon a morbid heredity, and having the capability of transmitting defect to the descendants, we call the neuropathic make up. It shows itself chiefly under the manifestations of feeble-mindedness, epilepsy, grave hysterias, constitutional psychopathic states, as mental instabilities, perversions, inversions and obsessions, manic-depressive insanities, paranoid and involuntional states, etc. The forms in which mental abnormalities of this type may appear are not independent hereditary entities, but are closely related one to the other and to criminality, so that what may appear as one form of mental abnormality in one generation may appear as a different morbid entity in the succeeding generation.

To the neuropathic make up we must attribute the alarming increase in population of our insane and defective; and, as we would expect, in the ranks of this class we find the largest numbers of recurrent recoveries, so called, discharged as improved, much improved, and capable of self support,—and of readmissions. The neuropathic make up provides the soil and seed of degeneracy since it bears its taints and its defects within its germ cells; and the slight restrictions we have imposed upon individuals of this class, the special protection and fostering care extended by the State to the class, are largely responsible for the spread and increase of defect and degeneracy. Humanitarian and philanthropic agencies, too, have, through the laxity of the present system, wrought incalculable injury to the race in that they have made more easy and possible the tainting of good stock by mixture with bad.

Optimists warmly assure us that the race is improving. But let us examine our census reports and learn the lessons that cold figures convey. The general population of our State in 1900 was 4,115,888; in 1910, 4,305,721, an increase of 18,989 or about 4.5 per cent. The number of registered insane in 1900

(exclusive of the number in prisons, jails, and private institutions) was 760; in 1910, 1,033; an increase of 273 or 35.1 per cent. Very likely people are more willing nowadays to commit their insane to State hospitals. But even allowing for that, not even the most indifferent, nor the most infatuated believer in "cheerful yesterdays and confident to-morrows" can regard the situation with placid equanimity. And, mark you, these figures do not take into the account feeble-mindedness and confirmed criminality, which have a common origin and a close relationship to the degenerative insanities.

Going outside of our own State we find similar conditions prevailing. From an excellent paper on the mentally defective by Doctor Drewry, of Petersburg, Va., I quote the following facts and figures:

From 1904 to 1910 the population of the United States increased eleven per cent., while the number of insane persons was augmented during the same period by twenty-five per cent. During the past quarter of a century there has been a rapid increase in the hospital accommodations for the insane, still the increase in such accommodations has not kept pace with the increase in the insane population. From 1900 to 1910 the population of Rhode Island gained 26.6 per cent. while for the same period the number of patients in the State Hospital gained 53.1 per cent. In New York Dr. A. W. Ferris, former president of the New York Commission in Lunacy, reports that the increase in insanity since 1890 has been 104 per cent., while for the same period the increase in the general population has been 47.6 per cent. In Alabama, the increase of admissions into hospitals for the insane during the past ten years has been forty-five per cent., while the population increased about sixteen per cent. In Virginia the general population was augmented 11.2 per cent. from 1900 to 1910, while the registered insane advanced fifty per cent.

Doctor Drewry estimates there were six times as many individuals sent to the State hospitals in Virginia for the first time between 1900 and 1910 as between 1870 and 1880, therefore, he says, in a single generation the number of insane persons sent to the hospitals had increased about 500 per cent. I am not prepared to say what proportion of the total insane population of the United States consists of persons readmitted to State hospitals, but in a general way it is correct to state that from twenty to twenty-five per cent. of admissions to all State hospitals are cases of readmission.

Turning again to our own State, we find that the total number of insane cases admitted to the State hospital from October 1, 1900, to September 1, 1910, was 2,649; 618 or 23.3 per cent. of the total admissions were cases of readmission. Herein we are tempted to think we have one possible explanation of the increasing growth of degeneracy from which valuable suggestions for future guidance may be drawn. Subtracting the number of readmissions from the yearly admissions to State hospitals would substantially lower the alarming rate of increase of insanity. Were it possible to deduct from the tables of statistics the number of insane descendants of these same readmitted persons the reduction would be so marked as, I believe, to show an actual decrease in insanity commensurate with our better habits of living and improved environment.

The total discharges of insane cases from the New Hampshire State Hospital during the period 1900 to 1910 were 1,330, of which "recoveries" numbered 606 cases. Of the "recoveries" 210 cases

or 33.1 per cent. of the total were cases of recoveries from other than first attacks.

During the same period the number of cases discharged "not recovered" was 723, or 54.3 per cent. of the total discharges. Of these 437 or 32.8 per cent. of the total discharges were recorded as "improved" and "much improved," and 286 or 21.5 per cent. of the total discharges were dismissed to the community "not improved." And it is more than probable, ay, almost certain, that the majority of such nonrecovery discharges were of neuropathic or defect transmitting persons. It is fair to assume that the repeated recoveries occurred in persons in the early and middle periods of life—that is, in the sexually productive periods of life. The assumption is justified by common experience and by the fact that 100 cases or practically eighteen per cent. of the total recoveries were cases of repeated recoveries ranging from the third to the fourteenth recovery. And recurrency in itself indicates a neuropathic or defect transmitting taint.

As to the ages of those discharged as "not recovered" we have no data from which to draw an accurate estimate. Excluding cases of gross brain lesions and other forms of acquired brain diseases—that is, not essentially hereditary in predisposition—the greater number of discharges "not recovered" would probably be cases of persons in the reproductive period of sexual life.

Of the cases of insanity from gross brain lesions the proportion of discharges, "recovered," "improved," and "much improved" must be negligible. They constitute a large proportion of the life residents in hospitals for the insane whose chief effect upon the movement of insane population consists in swelling the admission and death rates.

As distinguished from the essentially hereditary and defect transmitting insanities, the other acquired mental disorders—the infection and exhausting psychoses, the toxic as alcoholic and drug psychoses, the psychoses of autointoxication-uremic, polyneuritic, etc.—constitute, with the exception of alcoholic cases, but a small proportion of the total admissions. Discharges of alcoholics have been very generally rated as recoveries, those not thus discharged becoming largely a part of the life residents of the hospital. Basing our opinion upon the nature of the disease, the probable termination of the other acquired psychoses referred to above would most likely be recovery, or chronic mental disorder and life residence. Probably, then, one fourth of the total number discharged "not recovered" would more than cover the part of that total formed by cases of acquired mental disorders.

Thus, we may say, about three fourths of the total discharges "not recovered" were cases of mental diseases generally considered as hereditary and defect transmitting, and of these cases it is quite safe to say the majority were persons in the reproductive stage of life.

These figures should not excite surprise. Under our own present system the patient who has improved to the extent that he presents the appearance of normality may practically compel the hospital authorities to discharge him. The guardians or friends who pay patients' expenses may remove them from the hospital whatever their condition.

County commissioners, city and town officials hold the same authority in the case of county or town patients supported by the State, and in more than one instance this has been exercised as a result of the importunities of patients' friends. Moreover, the discharging of patients is forced upon the hospital in order to accommodate the new cases each year. There never has been a time when our State hospitals have not been overcrowded, and there never will be until the growth of degeneracy is checked.

A consideration of these estimates enables us to imagine the vast possibilities of propagation of vitiated stock by that portion of our nationality which at one or more times formed part of the population of hospitals for the insane. Hospital statistics are of use in enabling us to form opinions of possibilities; they do not enable us to arrive at definite figures of fact in regard to this point. This is not to be wondered at considering that investigations of this kind require a very thorough and extensive field work service involving great labor and expense. But enough has been done by investigators to show the terrible price society pays for its indifference to the blight of degeneracy. The genealogy of the notorious Jukes family, prepared by Richard Dugdale, shows from 1720 to 1874 some one thousand two hundred defective descendants from one Max, a shiftless vagabond, drunkard, and defective. Three hundred and ten were in poor houses; 300 died in childhood; 440 suffered from vicious diseases; 400 were early victims of their own excesses; fifty were notorious prostitutes; seven were murderers; sixty were thieves who spent an average of twelve years each in prison; 130 were convicted more or less often of crimes; and of the total descendants very few seemed to be decent. This single family cost the State of New York \$1,250,000, or one thousand dollars for each of its degenerate members up to 1877, and, as Davenport states in his studies of heredity, their protoplasm has been multiplied and dispersed during the subsequent thirty-four years, and is still marching on.

A professor in Berne University has traced the history of a family which gives striking testimony to the force of heredity. In the end of the eighteenth century a woman died, who for forty years had been "a thief, a tramp, a drunkard." From this woman there came 834 descendants, 707 of whom have been traced from youth to old age. Of these, 106 were born out of wedlock; 142 were beggars, and sixty-four lived on charity. Among the women 181 lived loose lives, and in the family have been seventy-six convicts and seven murderers. He estimates that in seventy-five years this family has cost the German authorities in alms houses, law courts, prisons, and other institutions about a million and a quarter dollars." Doctor Goddard, of the Vineland (New Jersey) Training School, has traced out similar conditions in degenerate families in America. From the literature of defect instances like these may be multiplied. The New Hampshire State Hospital is now conducting an excellent field work service, the results of which promise to be fully as enlightening and interesting as the findings above quoted.

From our estimate of the number of possible de-

fect transmitting cases discharged from State hospitals in the reproductive period of life, and bearing in mind the well known fact that of all classes the degenerate and defect transmitting are the least likely to govern their desires and passions by altruistic considerations of social and racial welfare, the claim may be advanced with some show of justification that under the existing system remedial and corrective agencies have to a great degree failed in their purpose. Viewing the field of insanity and defect in the light of the laws of heredity the present day conditions may be, not inaptly, described in the words of the Shakespearean simile on glory—being like unto a circle in the water which never ceases to enlarge itself.

Our estimates indicate that the insanity or defect furnishing part of our population must be well limited to certain strains; that the increase of insane population may be largely accounted for by the fact that civilization with its humanitarian and philanthropic agencies has practically reversed the natural law of "the survival of the fittest," so that to-day the unfit stands an equal if not a better chance of surviving; that remedial and corrective agencies under existing conditions are indirectly instrumental in increasing the numbers of the unfit, inasmuch as they serve to ameliorate, not cure, the manifestations of morbid heredity and degeneracy—and most important consideration of all, improve the physical fitness of the unfit, thereby enabling them the better to exercise the rights and privileges of normal individuals, and enhancing and making more possible the growth and multiplication of poor and degenerate stock.

This condition of affairs leads Dr. Havelock Ellis, the great English scientist, to observe that "the social reform that has been concerned with the improvement of the conditions of life has had the altogether unexpected and undesired result of increasing the burden it was intended to remove. Not only are we making the way smooth for the fit, in even greater measure we are making it smooth for the unfit. We have been helping the unfit to compete with the fit. We have been encouraging them to propagate their kind—to pass on their unfitness to future generations. We have been expending enormous enthusiasm, labor, and money in improving the conditions of life with the notion in our heads that we should thereby be improving life itself, and after seventy years we find no convincing proof that the quality of our people is one whit better than it was when, for a large part, they lived in filth, were ravaged by disease, bred at random, soaked themselves in alcohol, and took no thought of the morrow. Our boasted social reform, we are thus tempted to think, has been a matter of bricks and mortar—a piling up of hospitals, asylums, prisons, and workhouses—while our comparatively sober habits may be merely a sign of the quietly valetudinarian way of life imposed on a race which no longer possesses the stamina to withstand excess."

The adequacy and efficiency of the existing system of dealing with the problem of the unfit is thus fairly open to question. Despite all that has been done in the way of curative, preventive, and corrective measures the evil is spreading wider and eating its way deeper into our nationality. The

experience of the past affords no hope of improvement of conditions in the future, if we go on as we are going. The burden of support and maintenance of remedial and corrective agencies is becoming one of the most serious economic problems of the age. The heritage of evil which, by our present system, we transmit to posterity is appalling to contemplate. Leaving out of consideration the economic question, the ethical aspect of the problem—this "watering the blood of the race," as Doctor Elliot terms it, this crime against the race—forms a subject worthy of the darkest chapter in the history of mankind.

What can be done, then, to stop this fast spreading and far reaching evil? Temporary detention in hospitals, followed by improvement and discharge but make a bad matter worse. "Cures" and "improvements" prove uncertain and fallacious. We are forced to agree with Doctor Rosanoff, of Kings Park Hospital, that "the prognosis of insanity (and we may add of all defect) of whatever nature or origin is, as a rule, gloomy. Very few cases, indeed, end in permanent recovery. Further, it must be pointed out that treatment may be palliative, but does not materially affect the prognosis, and that in a given case the course and termination will depend simply upon the nature of the disorder and may be predicted without reference to the management of the case." In our own State, while statistics show 19.7 per cent. recoveries of the total insane population of our State hospital during the ten years under review (606 recoveries out of a total insane population of 3,074), recoveries from alcoholism formed 19.1 per cent. of the total recoveries; while 33.1 per cent. of the total were "repeaters" or temporary recoveries. Were all the cases of recovery from acquired forms of insanity deducted from the total the percentages of recoveries would be insignificant. The purely "hospital" plan of dealing with the degenerative insane and defective, implying possibility of cure and restoration, does not therefore seem to offer a solution of the problem. For it is expensive, it is simply a palliative measure, and it certainly tends to increase the very burdens it is intended to remove.

The question is a medical one, obviously, in certain respects; but even more forcefully it is a sociological and biological question. Medical care of the insane is surely necessary, perhaps more necessary than for any other class. But hospitals and purely medical treatment alone will never solve our problem. The question has biological, sociological, and economic aspects which demand a reorganization of our forces, whereby prevention and some relief from the burdens and handicaps of supporting an ever increasing army of indigents may be obtained. The resources of medicine have been exhausted in the single handed struggle to cure and improve, where in reality—following physical improvement by medical treatment—the teacher who might discover and train such mental faculties as the sufferer possessed to the end of making him partially or wholly self supporting, and the biologist and sociologist who might formulate and apply preventive measures, constitute the chief forces promising hope for the future. This is not meant to convey the idea that medical supervision of the in-

sane and defective should be abolished, for nothing in my opinion could be more undesirable; but rather to enforce the lesson of experience, that "chasing the rainbow" of curability should be subordinated to, or at least associated with effective measures for prevention and safeguarding the future of the race. Nor is it designed to convey an impression that State care of the defective is unnecessary. Not until the State assumes and exercises full control over the lives and destinies of its unfit will the burden ever grow lighter.

Segregation, or permanent detention, and unsexing or rendering impossible the multiplication of the unfit by way of interfering with the processes of reproduction, seem to be the only ways of making prevention practical and effective. Segregation of the defect transmitting throughout the reproductive period may be expensive, but properly enforced, says Doctor Davenport, of the Carnegie Institute, "there is reason to anticipate such a reduction in defectiveness in fifteen or twenty years as to relieve the State of the burden of further increasing its institutions, and in thirty years most of its properties especially acquired to accommodate all the seriously defective could be sold." But such segregation should mean something more than mere custodial care. Mere custodial care is wasteful and extravagant. Segregation should include industrial training and reeducation in habits of useful occupation in order to make as much as possible of the mental faculties remaining to the sufferers, and to render them entirely or partially self supporting. And here hospitals for the insane may study to advantage the methods pursued in schools for the feeble minded where reeducation and industrial training are the main features of management. Dr. E. R. Johnstone, of the Vineland Training School, makes the statement that thirty to fifty per cent. of the feeble minded can be made self supporting after ten years' training. Fully as much it would seem might be accomplished with the degenerate insane, who in most cases have already formed to a greater or lesser degree, habits of industry and occupation prior to commitment. The experience of Massachusetts, with its successful colonies for the chronic insane at Gardner, and other places, not only points out a means of some relief from the burden of support of the defective, but shows also the immense value of occupation and industrial education in the management and treatment of the insane. Abandoned farms were purchased by the State, workshops, offices, and hospital wards erected, farm buildings already standing repaired and occupied, and here at a cost of much less than that of hospital accommodations and under the most ideal conditions—country life, pure air, outdoor occupation, as well as indoor work—a great deal is being done for the physical as well as mental improvement of that class called "chronics," generally regarded as the most hopeless in our hospitals. Under this method the general health of patients improves, the cost of maintenance is greatly reduced, the returns from patient labor contributing largely to their support. Segregation of those with protoplasmic defect, in farm and working colonies, training in industrial occupation, and this as a large and important adjunct to the hospital, seems to be a rational, economical way of cop-

ing with the issue, if we are to take effective measures to weed out degeneracy.

Asexualization is already enforced in some States. Under certain precautions sterilization is legalized in six States of the Union—Indiana, Connecticut, California, New Jersey, Ohio, and Utah. In most of these States these laws apply only to confirmed criminals, but there is a growing inclination to extend their provisions to degenerates generally. Before the passage of the law authorizing vasectomy in Indiana, many criminals and defectives had submitted to the operation, voluntarily sacrificing their procreative power. Vasectomy for men and salpingectomy for women are probably the best, simplest, and most desirable surgical means of preventing procreation. Vasectomy does not deprive a man of sexual desire, nor pleasure, nor of sexual secretion, but it does deprive him of means of impregnation. The functions may be restored if restoration be considered advisable. Doctor Sharpe, of Indiana, who has performed the operation upon over 500 men, states that mental stamina is increased after the operation, and that physical as well as mental benefits are conferred.

Some of the advocates of vasectomy and salpingectomy do not hesitate to contend that in four generations they would be the means of wiping out nine tenths of the crime, insanity, and degeneracy in our land.

Whatever the means employed to enforce it, prevention seems to be the essential in any scheme for lessening the numbers of the degenerate. Whatever the sentimental objections that may arise regarding the rights of the individual, the situation resolves itself into sentimentalism and the generation of the unfit on the one side, and prevention and a regeneration of the race on the other. The welfare of the nation depends upon whether or no rational action be taken in this matter and rational action must be in accordance with the laws of science. At the outset it may not be possible to apply preventive measures to all the known classes of the defective and defect transmitting. But no one can doubt the advantages to our nationality were the feeble minded, the epileptic, the degenerate criminals and patients with certain degenerative forms of insanity commonly called "functional," such as recurrent insanities, dementia præcox, psychopathic states, etc., prevented from propagating their defective protoplasm. "Concerning heredity in the functional forms of insanity," observes Doctor Davenport, "there is no doubt. But the mental defect that is inherited is not always of the same type. In the same family may be found cases of manic-depressive insanity, senile dementia, alcoholism, and feeble mindedness. It would seem to be the neuro-pathic taint that is inherited. This is the conclusion to which Cannon and Rosanoff have come in their study based on house to house investigations of the families of patients at a State hospital. They omit from consideration the "organic" class of cases as probably purely exogenous in origin. Aside from these they find that when both parents have any form of insanity all of their children will "go insane." If one parent is insane and the other normal but of insane stock, half of the children tend to become insane; when both parents, though normal, belong to an insane stock about one fourth of the

children become insane." The typical laws of heredity are followed here." (Davenport. *Heredity in Relation to Eugenics*.)

Before the first step toward effective prevention can be taken the public mind must be instructed in the consequences and dangers of "racial taint." Heretofore the effect has been to minimize the danger, to remove the stigma, as it was called, from insanity; indeed this was one of the arguments advanced in behalf of the hospital plan of treatment of the insane. But adequate and intelligent legislation upon this subject depends upon an intelligent understanding of conditions, and a sense of public responsibility founded upon correct knowledge. When this has been attained the stigma falls not upon the sufferer, the unfortunate victim of circumstances over which he has no control, but upon the social system which makes such misfortunes possible; and this is just as certain as it is to-day that the existence of a preventable disease like typhoid is a reproach and a discreditable reflection, not only upon the sufferer, but upon the sanitary intelligence of the community.

The writer has drawn largely upon the publications of the Eugenics Record Office of America, articles in the *Survey*, and in the *Medical Record* and *American Medicine*, by such men as Dr. Charles L. Dana, of New York, and Dr. Frank Wade Robinson, of Cornell University; and others; also upon published reports of the Vineland Training School, of New Jersey, the great value of all which in directing public attention to the important problems of heredity and race regeneration he hereby wishes to acknowledge.

Since this foregoing paper was read before the New Hampshire Medical Society an article by one of the leading alienists of Massachusetts appeared in the *Boston Herald* (May 12th) questioning the reliability of estimates of the increase of degeneracy, and specifically denying the correctness of statements to the effect that insanity is on the increase. According to the writer of the article in question, the increase is apparent rather than actual. Stating that it is easy to get an impression that there is a great increase of insanity from hospital records, he proceeds to say "that the mistake made is that an increase in the number of insane in the hospitals is regarded as the same thing as an increase in the number in the general population. . . . But the large number of patients in the State hospitals cannot be taken as a criterion of the increase of insanity in the general population. It is largely a question of admission and discharge rate. What we should seek to ascertain would be the 'occurring' or new cases admitted, etc."

Following this suggestion, let us see how the number of "occurring" or new cases admitted compares with the general population:

Number of "occurring," or first admission cases admitted to New Hampshire State Hospital during decade ending March 31, 1890, 1,108.

Number of "occurring," or first admission cases admitted to New Hampshire State Hospital during decade ending September 30, 1900, 1,274.

Increase of "occurring" or new cases, 166 or 14.9 per cent.

Number of "occurring," or first admission cases admitted to New Hampshire State Hospital during decade ending September 30, 1910, 2,061.

Number of "occurring," or first admission cases ad-

mitted to New Hampshire State Hospital during decade ending September 30, 1900, 1,274.

Increase of "occurring" or new cases, 787 or 61.7 per cent.

General population State of New Hampshire, 1890. 376,530

General population State of New Hampshire, 1900. 411,588

Increase 35,058
—or 9.3 per cent.

General population State of New Hampshire, 1910. 430,572

General population State of New Hampshire, 1900. 411,588

Increase 18,974
—or 4.6 per cent.

Against the opinion of the *Boston Herald* contributor, let us place the opinion of such an authority as J. Rogues de Fursac, M. D., formerly chief of clinic at the medical faculty of Paris, physician in chief of the public insane asylums of the Seine department: "It is not surprising that the number of insane is constantly increasing in the so called civilized countries. However, this increase is not so great as appears at first glance. For its accurate estimation it is necessary to keep in mind three factors that are often neglected, viz., the increase of the population, the progress of the science of statistics (and the housing of patients, many of whom formerly lived at large and did not enter into the statistics). However, the latest and most reliable statistical data furnish irrefutable proof of the fact that insanity is on the increase and show also the rate at which it is increasing."

An enumeration has been made of all mental defectives (idiots and imbeciles as well as insane) existing in the Canton of Berne, Switzerland, on May 1, 1902, in their homes as well as in the various asylums. A comparison of these statistics with similar statistics obtained under identical conditions in 1871 gives the following results:

	In 1871.	In 1902
Total population of the Canton of Berne	501,501	589,433
Number of mental defectives.....	2,804	5,029
Number of mental defectives per 1,000 of population	5.6	8.5

In other words, in thirty years, the total population of the Canton of Berne increased by seventeen per cent. and the number of mental defectives by seventy-nine per cent." (De Fursac, *Handbook of Psychiatry*, third edition, p. 7. Translated and edited by A. J. Rosanoff.)

TEN SEX TALKS TO GIRLS.*

BY IRVING DAVID STEINHARDT, M. D.,
New York.

I.

In approaching matters sexual one is usually handicapped by the prevailing, but totally erroneous idea that matters pertaining to sex and the sexual relations are not to be spoken of plainly, but in a vague and mysterious way which instead

of enlightening and instructing in a proper way merely arouses a dangerous curiosity which demands a complete understanding, which understanding is usually obtained elsewhere rather than at the proper place owing to this false idea of modesty on the part of those who should instruct. There is no such false idea of modesty prevalent among those who would prey upon the ignorance of the innocent and virtuous. This latter being a fact only too well known to have the most conservative attempt to deny it, it seems to me that it is the duty of those who know, to spread a complete knowledge of sex and sexual matters in a simple and instructive manner, which can be fully understood by our listeners and will therefore prove profitable in preparing them for their future duties, in your case as wives and mothers, and at the same time, give an education which will enable them to protect their health and virtue, if they will. Those who refuse to profit by the proper knowledge offered, must expect to reap the consequences of their foolishness or stubbornness, or whatever it is that prevents them from profiting. These consequences are not pleasant, but usually are a mixture of poignant mental anguish and severe physical pain. In my talks to you I shall endeavor to be interesting and speak in the same way to you as if a cooking lesson, let us say, was under discussion. This means I shall be as thorough as I can and shall want you to ask questions at the end of each of my talks, if I have not made myself plain. I am here to instruct you in the subject of sex and sexual matters as they relate to the female and you must feel that you can ask questions of me as freely as you would of your instructor in any other subject.

Better to understand that which is to come later in my talks, you must first have a little idea of those parts of yourselves which enter into the realms of sex and sexual relations, those special organs which are peculiar to the female members of the human race. We must also include among these the breasts, which although present in the male, usually only develop and function in the female. We shall begin our study of the female anatomy from within and gradually travel outward as does the ovum, a matter I shall explain later. Starting with the ovaries, therefore, we find that they are two in number, one on the right side of the pelvic cavity, which is that part of the body about two inches below the navel, roughly speaking, the other on the left, a little below the level of the front tips of the hip bones, and each on its respective side, about midway between the tip of the hip bone and middle line of the body. The ovaries are somewhat oval in shape and, roughly speaking, each is about one and a half inch in length, three quarters of an inch wide, and but a third of an inch thick. Each of them weighs on the average about one quarter of an ounce. They are very well supplied with bloodvessels and nerves, the latter of the highest order as many of you can testify, who have in any way received a blow in this region. Passing from the ovaries we come to the tubes. These are like what their name signifies. They are two in number, a right and a left, and each is about four inches in length. The size of the tube opening is

*Delivered by invitation before the Florence Memorial Aid Society of the Hebrew Educational Institute of Brooklyn, N. Y., the "Evergreens" of the Emanu-El Brotherhood of New York, and elsewhere.

The author is willing that anyone desiring to give talks of this kind use all or any part of these that may be desired. In giving these talks, the author always encourages the asking of questions at the end of each. In this way anything said during the talk which was not clear to the audience is explained more fully.

very small, about large enough to pass a bristle through. That part of the tube near the ovary has a bigger opening than the inner part which is joined to the uterus, or womb, as that organ is generally named when spoken of by the public. Another interesting point to note in the anatomy of the tubes is the fact that their inner surfaces are lined with a skin which we call a mucous membrane, from which are given off little whiplike processes which propel, by their motion, anything in the tubes towards the womb. From the tubes we pass on to the uterus or womb, by which latter name I shall call this organ from now on, as this is the name most familiar to you. This very important organ lies usually in about the median line of the body tilted slightly forward at its upper part. In shape, in the virgin, it has been compared to a pear turned upside down. It is about three inches long, two inches wide in its broadest part, and about one inch thick. It is hollow, of course, and in its normal state weighs about an ounce to an ounce and a half. The top of the womb usually extends an inch or thereabout above the level of the ovaries, its apex, or lower end, about two inches below and into the vagina. We usually speak of the womb as consisting of two parts, viz., the body and the neck. A slight constriction externally, marks off this division. I said the lower end of the womb extended downward into the vagina, so next in order in our anatomy lesson is the vagina.

The vagina is really part of a passageway which extends from directly behind the two folds of skin which conceal from external view, in the female, the real genital organs, up to, around, and above the lower portion of the womb, allowing the lower opening or end of the womb to be suspended free into it. That part of this passageway which lies above or beyond the hymen is called the vagina and is the larger part of the passageway. The part in front or below the hymen is called the vestibule. Above the vaginal opening is another opening for the purpose of the passing of the urine from the bladder. This is known as the urinary orifice or opening. I mention this here, because I have found that so many women believe that the sexual opening and the urinary opening are the same, instead of being two very distinct openings for two very different systems of the body. Now to finish up our anatomy lesson, let us change our method of going from within, outward, and start from the outside and see how carefully Nature endeavors to protect and conceal the actual female genital organs.

In the mature female subject we find the entire genital region covered externally with a growth of thick, coarse, and usually somewhat interlacing hair. This hair grows out from either side of the median line of the body. Carefully dividing this hair at its normal dividing point and brushing it to one side or the other we find two folds or lips composed of thickened flesh, which come close together in the median line of the body effectually shielding from view that which lies back of them. We call these folds the labia majora or greater lips. Carefully separating these folds, we come to another, similar, but smaller pair of curtains, if I may be permitted to use this simile, and it is only

on separating this second pair of lips that the entrance to the vagina lies before us. This second fold is designated the labia minora or lesser lips. This entrance to the vagina is usually partially closed by a semicircular piece of skin, although this shape may vary, which is known as the hymen. The significance of the hymen will be discussed later. I believe, with the descriptions you have just listened to, plus the little drawings I shall now pass around, you have a sufficient knowledge of these particular parts of your anatomy for the purposes of that part of our talk yet to come. Let us pass on to the physiology and function of the various parts whose anatomy has just been discussed.

If the wonders of your anatomy surprised and interested you, still greater astonishment and interest await you, for if Dame Nature is a wonderful builder, she is still more wonderful in the workings of what she constructs, and we shall see how everything moves in a perfect cycle to a certain end. How, when this end is achieved, another cycle of events is started from this end to another goal, and so on until a result is reached from which there can be no further advancement. Once again, we shall start on the inside of the body in our studies, and as in our anatomy lesson, the ovary will be the first organ to be discussed. We shall consider its physiology and function. In the ovaries are developed the contribution of the female to the human race. Unlike some of the lower forms of life, this female part of creation cannot develop alone into a human being of even an imperfect sort, but only by commingling with the contribution of the male to creation can it become a being of life and energy. The ovaries, therefore, are both factories and storehouses. In them certain substances are developed, many at a time, into ova or eggs. In the process of ripening, these ova are each contained in a separate compartment in which it matures. When they become mature they rupture this envelope and also the surface of the ovary, and are discharged into the pelvic cavity, as we call this lower part of the body, as I have already explained. You can get some idea how small is this human seed when I tell you that each ovary is supposed to contain thirty-two thousand of them, in process of growth. I have merely given you a very bare outline of what goes on in the ovary. The details of the growth of the ovum or human seed in the ovary are most interesting, but would be out of place in our lesson, as you are not endeavoring to become finished students of medicine, but merely want to get some idea of yourselves, in order to be able to look after your health and happiness in an intelligent way. When the mature ovum has been discharged from the ovary, it is attracted to, and taken up by the tube, the open free end of which is, as I have already told you, larger than the end that is attached to the womb. When the ovum enters the tube the little whiplike processes that we spoke of in our anatomy lesson, gently propel it through the tube towards the smaller end where the tube joins the womb and from there it enters the womb. All this time certain changes are taking place in the ovum, so that Nature allows it about one week to travel these four inches from the ovarian end of the tube to

and into the womb. You note that it is the function of the tubes to convey the ovum or human seedling from the ovary to the womb. The womb, not unlike the ovary, is both a place of development and a storehouse, under certain conditions. In it, the human seed properly fertilized begins its growth ultimately to bloom forth into a baby and when complete, it is retained in the womb until the physiological moment arrives for its birth. The womb also has certain functions in conjunction with the menstrual period or, as many of you call it, the monthly period. The vagina has certain secretions whose duty it is to destroy anything foreign that gets into it, and which might get up into the womb unless destroyed. The vagina also plays an important part in the sexual relation, as it is here that the male fertilizing fluid containing the essential elements for the growth of the ovum is deposited to favor the development of the aforesaid ovum into a human being. The other parts mentioned in our anatomy lesson, also have certain minor functions to play in the organism, but not important enough to have you burden your minds with them, the most important parts and their functions we have now discussed in a general way, and in just sufficient detail to have you better understand what is to follow.

I have not discussed the breasts particularly, because their function, to furnish nourishment in the shape of milk to infants, you already know. How this milk is formed within the breasts is not essential to our talks nor to an understanding of them, therefore I omit this detail. The anatomy of the breasts, in a broad way, might be described as being a number of small reservoirs from each of which comes a pipe which carries the milk into a still larger collecting channel from which other pipes finally take it to the nipples. The technical name for these pipes is ducts. Only at certain times, of course, do the breasts take on their physiological function, i. e., when there is a baby to be fed.

The significance of the hymen at the entrance to the vagina is, that its presence unmutated, usually indicates a virgin girl—in other words a girl who has not associated in a sexual way, with the opposite sex. Its construction and position is such that the sexual act or anything approaching it will destroy its integrity. It is rarely destroyed in any other way but by an attempt to put anything at all into the vagina. Some are so shaped that even a fine surgical instrument could not be passed through the opening without injuring the hymen.

II.

In our first talk together you received some idea of the internal female sexual organs and of the parts leading up to them. You were told in a brief way what each one had to do normally. You were also told that while certain low forms of animal life were so constituted that they contained the essential parts for creation within themselves, in the higher forms of life, the elements necessary for creation were in separate bodies and those separate bodies were designated male and female, as their classification. To the female was given the very high honor and privilege of growing the human seedling which is later, after fertilization, to grow

into the human being. To the female was also given the very great privilege of sheltering within her, while it is developing, the human plant which comes forth in full bloom at birth as a lovely baby. To be able properly to accomplish these great things, a healthy body is needed and especially do you need healthy genital parts. Nearly all of you start off at birth with such parts, but ignorance and neglect oftentimes cause unhealthy changes as you grow older, which while easily rectified if taken in time, cause unnecessary and avoidable pain, sorrow, and trouble if allowed to become chronic. Therefore, how to avoid these pitfalls will be a good topic to talk upon and will be time well spent for you who will profit by what I am going to tell. All of you remember that as little girls, your breasts were but little, tiny, spotlike protuberances on the chest wall, and that your body was free from any growths of hair. You could run and jump like the boys and join in all their games with the greatest zest. As you began to grow older however, a certain inborn consciousness came over you that, somehow or other, boys were different from girls, and their games were hardly to your liking any more. You felt that little acts of comradeship you formerly allowed without a second thought, did not seem now just right. You did not know wherein they were wrong, but yet something inside of you made you feel as if you were no longer a little girl. Perhaps you noticed about this time that your breasts seemed to be getting larger and in the genital region a few coarse hairs were making their appearance.

These processes continued until the breasts had got to be such a size as to be really noticeable and the coarse hair, which is named pubic hair, had become increased, and hair was appearing in other parts of the body. Suddenly one day, with or without preliminary notice, you discovered you were losing some blood, and that the place where it was coming from, was that mysterious place that no one would talk to you about at home, and that you did not like to ask anybody about, away from home. You had heard in the street, perhaps, some coarse remarks about certain things, but you did not understand them except to know by that same inborn sense of modesty, that they were indecent remarks. This bleeding bothered you very much. In fact it may have frightened you until someone told you that girls had this happen every month, and also told you how to wear napkins for several days. That is probably the extent of the knowledge most of you have, even now, of the menstrual or monthly periods. A few of you may have vague ideas of what you should and should not do at this time. I am going to try and enlighten you further regarding this time of your life.

Ignorance of this function and the proper care of yourselves while it is present, is harmful, and in some cases very serious results have been known to occur. Perhaps it has seemed strange to you that only after a certain age, this function became established, and you have wondered why this is. The answer is very simple. You had not yet reached that period of complete development at which your organs were ready to function. And by functioning I do not mean only the menstrual period but their main function—the act of assisting in creation.

Nature gives warning of this ripening of these organs, and observant mothers who combine common sense with their powers of observation, will then have a serious talk on sexual matters with their daughters. It is the foolish modesty or ignorance of mothers in this regard, that makes these talks necessary. This selfsame false modesty or real ignorance has cost many a girl her life happiness, and started her on the road to shame and degradation, whereas sexual knowledge imparted to her at the proper time would have resulted in one more happy woman instead of an addition to the already large number of human wrecks. This arriving at the age of puberty, as it is called, is different in various parts of the world. The average age for instance, in India, for a girl to show by internal and external signs that she has arrived at this stage of life, is nine years. In Iceland, on the other hand, the average age is sixteen years. In our own country, this phenomenon usually manifests itself between the thirteenth and the fifteenth year of age. In some girls it may come a little bit earlier, in others a little bit later. The external signs of puberty are the growth of the pubic hair, and of hair in other parts of the body, the enlargements of the breasts, and a filling out, as it were, of the general body contour. Internally the ova are arriving at the stage of ripening, the pelvic organs have developed and are getting ready for their function of menstruation. Mentally the sexual sense has become more developed and the girl becomes more selfconscious and retiring. Very soon after this, she may menstruate for the first time. But even before this act really occurs, there may be months when even though there is no show of blood, she has all the symptoms of an approaching menstrual period. She complains of vague pains everywhere and anywhere, many times more severe in the back. She may have headaches and her eyes have dark rings under them. The breasts seem to have suddenly filled out, and may be painful. She feels depressed, languid, and drowsy. She complains of that tired feeling and prefers to lounge around rather than be very active. Mentally, she is also sluggish, her lessons or other duties being poorly attended to. Our little girl is liable to be very irritable at this time and easily moved to tears. The appetite may or may not be affected. Some girls also have a tendency to diarrhea at this time, whereas others become more constipated. In the pelvis and its contained contents there may be a sense of fullness and weight present. The first time a girl menstruates the loss may be a good deal of mucus tinged with blood; later however, as the habit becomes established, the blood will predominate. After menstruating the first time, several months may elapse before a second period, or the habit may continue to occur thereafter every twenty-eight days. It usually lasts for from four to six days, with the greatest loss of blood on the second and third days. Menstruation occurring oftener than once in four weeks, or lasting a greater or lesser time than that above mentioned, usually indicates something wrong. So does a very great loss of blood after the third or fourth day.

What will help to make a healthy girl so that when she grows up, her menstrual periods will be

normal and her later duties shall be easy of accomplishment? In the first place, every child, male or female, should be taught a fixed habit of daily bowel evacuation. It is a most important function, and neglect of it causes not only trouble in relation with the genital organs, but with the general health as well; and therefore its importance is twofold, for with poor general health, the genital organs suffer also. You all like to be clean without, and therefore why not be clean within? Neglect of external cleanliness is less harmful than internal uncleanness, but cleanliness without and within is essential to good health.

Another bad habit among women is to endeavor to avoid passing their urine as often as they should. For some mysterious reason they seem to try and see how many hours they can go without absolutely being forced to do so. I am amazed at what some of my female patients tell me regarding their ability to retain their urine. This is bad for several reasons. A distended bladder means it needs more room in the pelvis than is normally allotted to it, and therefore, to obtain this room, it pushes the womb out of place. Again, this constant stretching of the walls of the bladder beyond its normal limits, means that gradually the walls of the bladder will lose their normal strength or tone and urinary incontinence will result which may be temporary or become chronic. Anemia, which may be due to constipation (and a good many cases in the female subject are), or any other cause, is a detrimental factor to the normal act of menstruation and accounts for the sufferings of a good many women at this time. Our present efforts to educate women to very high collegiate attainment are at the expense of their physical health and normal development and therefore also at the expense of their future offspring. I know many will disagree with me in this statement, and point out shining examples to prove their point of view, forgetting the great number of others whose mental and physical condition substantiates my statements.

Anything which tends to cause congestion of the pelvic organs is harmful, whether it is false sexual excitement aroused by music, pictures, touch, masturbation or what not. I call it false sexual excitement, because it is not to be satisfied or completed by a normal sexual contact which can only legitimately take place between husband and wife. The way a girl dresses is also a factor in sexual health. You cannot lace tightly without distorting the body and its contained organs. If you are brought up to wear no corset at all you are indeed blessed. Warmth in dress is also an essential. These delicate organs are not rendered better able to perform their functions by chilling.

Another thing which helps to spoil the chances of a normal menstruation in a girl is the cursed institution of child labor in our industries. If the hereafter is as we are told by our preachers, a good many employers are going to have a hard time explaining to Almighty God why they should not be condemned to eternal hell fire, to suffer the most terrible tortures of the damned, as a very mild punishment for the number of ruined childhoods they have caused; for the pain and suffering they have given to these little children of God, and the hap-

pinness and health of which they have robbed them. In fact our civilization is not nearly so high as we flatter ourselves it is, otherwise our women would not be permitted to do all the various kinds of labor they are engaged in now, without regard to their health, happiness, or the well being of posterity. God created you to be wives and mothers, and not stenographers, saleswomen, office clerks, factory hands, etc. You were created by Almighty God to be man's companion in his home, and a healthy, knowing mother to the happy, healthy children you should be able to bear him, and therefore your training previous to marriage should be to that end, and not that of either an industrial slave or social butterfly. In neither case do you nor can you get the proper quiet and ease that should be yours at the menstrual period, and lack of this is detrimental to your health.

I am still old fashioned enough to decry the advent of woman into the business world, or her plunge into so called society as it is constituted today—one mad whirl of dancing, gambling, and other supposed pleasures. I hope that some day we will get to the old order of things, viz., business for the men, the home and its duties for the women, and a neighborly sociability that means pleasure to all without moral and financial ruin, as does society to-day. You will all be healthier women for it, because employers having less to think of in money matters will be more apt to think that women are women whether in the home or elsewhere, and if their wives and daughters need to give themselves special attention at certain times, so do their female employees. With lessened social duties their wives and daughters will also have more time to realize the necessity of taking care of themselves, and will do so. When they do, the incomes of many physicians, health resorts, and sanitariums, will be lessened. In fact, the number of the insane will also be diminished. It is a most beautiful time to look forward to and I hope we will live to see this advance in our civilization: a time when each of us will look after the welfare of the other from no selfish motives, but because we wish to advance the cause of humanity and be the ancestors of a constantly improving race.

MERCURIC SALICYLATE INTRAMUSCULAR INJECTIONS IN SYPHILIS.*

A Method of Relieving Some of the Pain and Discomfort.

By J. L. WOLLHEIM, M. D.,
New York,

Adjunct Visiting Physician, Home for Aged and Infirm; Assistant Urologist, German Hospital Dispensary.

While at the present time the entire civilized world is at high pitch over the apparently marvelous effects of salvarsan, and while admitting these temporary and occasionally brilliant results to be due to salvarsan, it appears to me that mercury is

always going to be used, with or without it. My interest in this subject is deep and it occurs to me that in the past most of our cases have run a severe course, and in consequence we have seen, and even see to-day, the very worst cases of syphilis, because the methods of treatment have been poor or poorly carried out. There seems to be among the largest percentage of general practitioners, a slipshod way of treating their syphilitics, in consequence of which we have the discouragement of the patients and their early loss in the belief that syphilis is curable.

Of the various methods of treatment of syphilis, I believe that mercury in the form of an insoluble salt in suspension, together with "606," is the ideal one, at least for the present. I feel that patients often discontinue treatment because of the pain and discomfort following these weekly or semiweekly injections and that the profession should bend all efforts to remove or mitigate these symptoms, if possible. This, however, it appears to me, is not as easy a matter as at first thought one would suppose. I have tried various forms of suspension bases in the strength of ten per cent. mercuric salicylate, with a wool fat, liquid petrolatum base, and feel that the base, modified after Levy-Bing, three parts of the first and seven parts of the second, is as good as any, because the organic oils tried, sesame and olive, show no advantage. Now, to relieve some of the pain of the mercuric salicylate, I have added quinine and urea hydrochloride in two per cent. strength. Quinine and urea hydrochloride, as you all know, is nontoxic and, above all, is nonhabitforming, and its anesthesia is occasionally prolonged up to fourteen days. The only place in the entire literature of quinine and urea hydrochloride which I have been able to review, in which the drug was used to relieve pain in syphilitic curative injections was where Walson (*Journal of the American Medical Association*, June 3, 1911), of St. Louis, used it in the soluble bichloride, and his results were practically one hundred per cent. painless in one hundred injections.

With the insoluble salicylate of mercury, however, we cannot claim such brilliant results as yet. The majority of syphilographers believe that the insoluble preparations, calomel, gray oil, mercury salicylate, are preferable to soluble ones, but their drawback is the pain they cause.

From my own observation and that of a number of my friends and colleagues, I believe that fifty per cent. of the injections are painful or uncomfortable, and to reduce this percentage, even to twenty per cent. is well worth trying. Dr. Fred Wise, of this city, who has used mercury salicylate injections regularly for years, states as follows: One hundred per cent. have pain on the first injection. This proportion of pain and discomfort following injections diminishes with the second and third, so that after the third injection fifty per cent. are painless and fifty per cent. have pain and discomfort. I fully concur in this statement, and I believe it is the universal experience. In my work I have used five suspensions, and these will be explained to you in full.

Suspension No. 1. The mercury salicylate was

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suspended in liquid petrolatum and wool fat, as in regular suspensions as commonly employed, and to this was added quinine and urea hydrochloride. This suspension was early discarded because of the latter coming down in crystals and blocking the needle. Injecting crystals is a little hazardous.

Suspension No. 2. This suspension represents the following formula:

Quinine and urea hydrochloride,	2.00;
Distilled water,	2.00;
Wool fat, anhydrous,	20.00;
Mercuric salicylate,	10.00;
Liquid petrolatum, q. s. ad.	100.00.

The requisite quantity of quinine and urea is added to the distilled water to cause it to dissolve. Then this solution is added to the anhydrous wool fat until it is all taken up. To this is added the requisite quantity of mercury salicylate, and finally the petrolatum, and the mixture is sterilized.

This suspension is the one with which most of the injections have been given and is an elegant preparation from a pharmaceutical standpoint.

Suspension No. 3. This is the same as No. 2, except that olive oil is used. This, however, is a little too heavy and thick and is absorbed too soon, and if it stands unused for some time after exposure, the upper layer of oil may become rancid.

Suspension No. 4. This is the same as No. 2, except that sesame oil was used instead of liquid petrolatum. Perhaps the same fault as before.

Suspension No. 5. To avoid the possible chance of the quinine and urea hydrochloride and the wool fat being decomposed by the heat of sterilization, it occurred to my chemist to prepare a suspension aseptically as far as possible. Bottles, corks, and all glassware were previously boiled. Petrolatum and water also boiled. Anhydrous wool fat from a fresh container is presumably sterile. It is made exactly as No. 2 except the final sterilization is omitted. This suspension promises better results than No. 2.

In this paper I report the results obtained in over 550 injections, over 440 given by myself in the German Hospital Dispensary, department of Doctor Oulmann, and in private practice, and over one hundred given by my colleagues, Doctor Oulmann, Doctor Broadman, Doctor Seckel, and Doctor Avary, in private practice.

In dealing with the symptom, pain, which, as you all know, is one of the most variable of all symptoms and is entirely subjective, the best way to test the patient's susceptibility is, it seems to me, to test the reflexes and the results will show that all those with exaggerated reflexes not due to organic, brain, or spinal diseases stand pain very poorly or not at all. These patients will, as a rule, complain of even a prick of a pin, to say nothing of an injection of oil with an insoluble salt, a needle necessarily heavier than that of a regular hypodermic, and two inches of penetration. Again, some patients seem to be more sensitive on one side of the body than on the other, so much so that when receiving a large series of injections, they appear to be annoyed only on one side. Again, some patients with syphilis are downcast, neurasthenic, introspective, and imaginative, and will not stand any inconvenience. Some are asthenic, if I may coin the word *syphilasthenic*, and cannot stand pain, be it ever so

slight. These statements are made to excuse some patients who feel conscious of having been stuck with a needle. It is also made to emphasize the fact that comparison is very important and that in this work I have always asked the patients to compare these injections with previous mercury salicylate injections and almost invariably, they prefer the quinine and urea addition. I have on a number of occasions injected patients with the regular suspension on one side and the quinine and urea suspension on the other and a favorable proportion preferred the latter. Patients who never had any injections previously showed signs that they feared the injections, thought that pain was part of the process, and were reluctant about reporting, because they feared that the injections were to be made painful if they reported negatively. Close questioning, however, brings forth the information that the injections are tolerable in nearly all cases where there is no induration locally and even in many cases of induration following injection, the pain is somewhat easier to bear than without the quinine and urea. This is explained by the fact that the combination, in this strength, often causes an anesthesia up to two weeks, according to Hertzler (*Journal of American Medical Association*, October 23, 1909).

My summary of the various suspensions is as follows:

INJECTIONS IN PRIVATE PATIENTS.			
Suspensions.	No. given.	Pain —	Pain + or ?
I	2	2	0
II	133	101	32
III	24	23	1
IV	20	17	3
V	27	22	5
	206	165	41

INJECTIONS IN HOSPITAL PATIENTS.			
Suspensions.	No. given.	Pain —	Pain + or ?
I	0	0	0
II	297	223	74
III	10	5	5
IV	50	35	15
V	0	0	0
	357	263	94

Of the 357 injections given in hospital patients, 297 were of No. 2.

Now, as some of these suspensions were not given in a sufficiently large number of cases I do not believe we can judge the merits of the individual suspensions. I believe, therefore, in order to show that quinine and urea do assist in relieving or preventing the pain and discomfort in a large proportion of cases, we had better tabulate the entire number of injections:

206 private injections....	41	pain or discomfort
357 hospital injections....	94	pain or discomfort
563 in all	135	or 23+ % pain or discomfort
430 injections of No. 2 with	106	pain or discomfort or
24+ %		

This percentage of painful injections is lower, it appears to me, than any insoluble mercury injections.

Now, to prove that this percentage of painful injections is lower than the regular mercury salicylate percentage, I report to you a series of injections (not tabulated in the foregoing tables) which I made, giving the patient simultaneously an injec-

tion of No. 5 on one side and the regular mercury salicylate suspension in wool fat, liquid petrolatum, as furnished by the hospital or made by my chemist, on the other side, with the following results:

Sixty sets of simultaneous injections, M X each side, once per week, showed:

- A—15 painless on both to be expected occasionally.
 B—3 painful on both moderate double infiltration local reaction to Hg. or Q. & U. as shown by Hertzler, or both.
 C—5 painful on Q. & U. side and not on regular side.
 D—36 painful on regular side and not on Q. & U.
 A+B=51 comparatively painless with Q. & U. Merc. Sal.
 or 84% comparatively painless, and
 16% comparatively painful.
 A+C=20 comparatively painless with regular suspension,
 or 33% comparatively painless, and
 66% comparatively painful.

This table includes a large number of injections given in the dispensary by myself, and a number given in private by Doctor Oulmann and myself. Our private results were even better than our hospital results, because we dealt with a more intelligent class.

I am very skeptical about some statements made by a few that their injections are always painless. These authors have not taken pains to inquire into the pain which their patients suffered. I am sure that the regular salicylate injections, whether given into Galliot's point or into the inner third of the buttock, deep into the muscle bundles with an irido-platinum needle, all glass syringe, and strict asepsis gives more pain than some are wont to admit. With this technique and the quinine and urea mixture, I feel the discomfort is less in a large percentage of cases.

A few statements made by intelligent patients who received both injections may not be amiss.

Mr. G., who had thirty regular mercury salicylate injections, and later on eight mercury salicylate and quinine and urea, says as follows: "First thirty were each like a kick in the region stuck and lasted four days; last eight, hardly knew I was treated."

Mr. H., who had twenty-eight regular injections and five mercury and quinine and urea injections, says: "Last five are decidedly better than other injections."

Mr. S. (Doctor Avary's patient) had had a previous course of injections one year ago, with the ordinary mercury salicylate petrolatum suspensions, which, according to his statement, caused him much more pain than the quinine and urea suspensions.

Mr. G. (hospital case) had gray oil and mercury salicylate injections at London and Aix la Bain and all were painful. He says of No. 2, "Hurt decidedly less than others."

Mr. D. (hospital case) says: "Not half as painful as previous injections."

Mr. H. (hospital case), who had many injections before, says: "No previous injections gave so little pain or inconvenience."

Mr. B. (hospital case) had some regular injections before. He says: "Sure that these injections hurt decidedly less than regular suspensions."

To show that quinine and urea hydrochloride does not impede the action of mercury, I say to you that such cases as gumma of the testicle, gumma of the nose (three cases), specific chorioido-retinitis, with total blindness, syphilis of the cerebellum, specific periostitis of the clavicle (two cases), gumma of the parotid, a large number of early and late lesions of the skin, and numerous early and late throat lesions cleared up under mercury salicylate with quinine and urea. There was one private patient (Doctor Broadman's) and one

dispensary patient, who were able to take these injections, whereas previously they could not tolerate the regular suspension. For this I cannot account.

There is on the market an imported proprietary ampoule, containing mercury salicylate, which gives only a little pain. Its objections are, however, that it is proprietary, is expensive, contains less than ten per cent. mercury salicylate, cannot be withdrawn easily, and, as far as I can ascertain, its base and entire composition, except the salt, are secret.

CONCLUSIONS.

1. That with the insoluble mercury suspensions we can never hope for one hundred per cent. absolutely painless injections, because of the drugs and their causing indurations, which are painful in the extreme.

2. That these indurations, as a rule, are made more tolerable by quinine and urea.

3. That quinine and urea certainly alleviates in many cases, or entirely obviates in some, the pain and discomfort of most of the mercury salicylate suspensions.

4. Quinine and urea is nontoxic and nonhabit-forming; does not affect the therapeutic action of mercury on syphilis, and is of distinct advantage when added to suspensions.

5. That from these observations in over 700 injections, the subject is promising for further research.

My sincerest thanks are here given to Dr. Ludwig Oulmann for many kind suggestions and for having so kindly placed his hospital material at my disposal—to Mr. James Lurie, of the Nauheim Pharmacy, for many kind suggestions of a chemical nature, and to my colleagues previously mentioned for their accurate reports.

Since this paper was read two colleagues reported to me that each had seen the No. 5 suspension block the needle or syringe. One explained that it happened only when his needle was too hot after boiling; in the other case I failed to block the doctor's needle or syringe with his suspension, taking some time for passage through the needle. While outside of needle blocking with No. 1 I have had no difficulty, I would suggest a cold needle, injecting a little more quickly than with the regular suspension, and a very thorough shaking of the suspension.

338 EAST SEVENTY-NINTH STREET.

THE CORPORATION OF BARBER SURGEONS IN ENGLAND AND HOLBEIN'S PAINTING.

By CHARLES GREENE CUMSTON, M. D.,

Boston.

Member of the Societies of Medical History of France and Germany, etc.

Edward the Fourth, in the year 1461, granted the charter of incorporation to barber surgeons, and the barber and surgeon continued in the same firm for three centuries, and so long as this union lasted surgery, instead of advancing, decidedly retrograded.

The prudent reign of Henry VIII produced con-

siderable change in the state of England, by the increase of the population, and a consequent increase in the number of artisans. Then, too, syphilis at this time first made its appearance and produced most fearful ravages. The necessity for surgeons consequently increased, and a few there were who confined themselves entirely to that profession.

These few were, in fact, ten in number, whose portraits have been handed down to us in one of the finest of Holbein's efforts of pencil, where these ten worthies are represented on their knees before Henry VIII, who confirmed the charter of the Surgeons of London. This celebrated painting was in the possession of the barbers, who gave one hundred and fifty guineas to Baron to engrave it; one hundred in money and fifty by subscription. It was

TINCTURE OF IODINE THE BEST SURGICAL DISINFECTANT.

BY FRANK THOMAS WOODBURY, M. D.,

Fort Screven, Ga.,

Major, Medical Corps, United States Army.

(Concluded from page 105.)

CASE I. The writer had a case of complete paralysis and anesthesia extending downward from two inches below the nipple line due to laceration of the spinal cord, from a gunshot wound at the third dorsal vertebra. Two exploratory operations were performed, and on the fourth night an acute cystitis developed, engendered by the use of a catheter by the nurse to relieve retention. A daily irrigation of the iodine salt solution, which was doubled in strength on the sixth day, caused the urine to become normal by the tenth day, or with just five irrigations. This was the more remarkable, as the patient died from ascend-



HOLBEIN'S PAINTING OF KING HENRY VIII CONFIRMING THE CHARTER OF THE SURGEONS OF LONDON.

once borrowed by King James the First, and his letter on this occasion states "that the portrait of the King was both like him, and well done."

The writer is fortunate enough to possess one of these very rare prints, a good reproduction of which is here shown. The original measures twenty and three quarters by thirty and one half inches with margins. It is a large line engraving and was presented to the Masters and Governors of the Mystery and Commonalty of Barbers and Surgeons of London. The date of publication is October 1, 1736. The king is seen in regal robes, wearing crown, collar, and jewel, sword of state held in right hand, while with the left he presents the Charter to Doctor T. Vycary, who, with others, is kneeling at his side.

871 BEACON STREET.

ing degeneration of the spinal cord two days after the urine became normal. The gunshot wound never showed heat, pain, redness, or swelling, and, aside from the leakage of spinal fluid, there was but little soiling of the dressings and no odor.

CASE II. A sentry was struck on the head by a crowbar. He received a contused lacerated wound extending from the border of the hair above the left eye to the vertex along the sagittal suture, completely laying bare the skull; also a contused stellate wound over the left occiput, and a depressed stellate fracture at the anterior fontanelle, radiating toward each eye and backward to the vertex. There was considerable flow from the nostrils of a watery blood which, as the nose itself was not injured, pointed to a fracture at the base of the skull by *contrecoup*. The patient was partly conscious when brought into the hospital, so that it was necessary to anesthetize him. The long hair was clipped off with scissors and the entire wound and scalp were flushed with iodine salt solution. The wound was enlarged for exploration by the hand, which was sterilized by dipping in tincture of iodine. The depressed fracture was raised

and the head bandaged without further treatment. The patient's pulse which had been sixty-two, jumped to eighty on removal of the pressure.

After the operation, the patient rallied somewhat though he did not recover mentally, being dazed and giving evidence of much headache. He vomited a quantity of bloody material, evidently swallowed from the fracture in the ethmoid region. He received a hypnotic and an anodyne to enable him to rest during the night. The following day his temperature and pulse were normal and his mind was clearer, though still slightly dazed. The dressing, which was much soaked with bloody serum, was changed. The wound was sweet and clean, and was irrigated with the iodine salt solution. Patient rested during the day and took liquid nourishment; catheterized once and had an anodyne at night. Condition on the next day, improved generally; wound dressed as before. The third day, still further improvement noted; some large silkworm sutures were inserted to exert traction on the wound edges. Patient rested well during the night and the following day had a full diet, as he was hungry; otherwise same as the day before. On the sixth day the patient was put in a wheeled chair. The wound contained a little pus welling up from the occipital region. The wound was painted with tincture of iodine. The next day the wound was dressed twice, owing to persistence of a few drops of pus in posterior angle. The patient walked up one flight of stairs to the dressing room. Following day condition unchanged. The head was shaved. On the ninth day an acute phlegmon developed over the left sternocleidomastoid, which was treated by painting with tincture of iodine and a Bier's bandage to the neck. The scalp wound was cleaner. The following day the phlegmon had subsided and the scalp wound seemed to be granulating well. The case then passed into other hands. It was reported that he progressed slowly, with a little pus always present, until six months found him with the wound nearly closed, and with apparently no mental or muscular symptoms.

Bovee (3) applied the full strength of the tincture to the cervix, vagina, and vulva in the treatment of acute gonococcal infection in both pregnant and nonpregnant women with signal success. In primary perineorrhaphy applications of fifty per cent. alcoholic dilutions of the tincture were used without regret. Irrigations of the puerperal uterus with a 0.5 per cent. strength of the tincture is being used by him at the Columbia Hospital for Women (Washington, D. C.). In chronic gonorrheal endometritis, he says: "Curettage may be done with impunity if thorough application of the full strength of the tincture of iodine be applied efficiently (avoiding too much dilution by blood and serum) and promptly to the endometrium. The danger of exciting the slumbering infection in the endometrium by the curettage and thereby endangering the previously fortunate tubes to invasion is practically nil. One of the most signal advantages of this plan of sterilization is in the treatment of intestinal fistulae."

Hildebrand (63) reports the use of five per cent. tincture of iodine as an injection into gonorrheal arthritis. After an exacerbation of symptoms for a few days the motility improved and no adhesions resulted; one kneejoint being found normal on autopsy six months after this treatment.

The almost miraculous restoration to form and function of badly mashed and infected tissues when treated by tincture of iodine alone, and that without the classic symptoms of inflammation, prove that tincture of iodine is not the irritant to tissue one would suppose on *a priori* grounds, but that its wonderful alterative function here has its fullest play.

Reclus (64) observed the remarkable recupera-

tion of tissue with the tincture of iodine, even when applied after signs of local inflammation and even septicemia had developed. He cites a case of fulminating gangrene of the scrotum in a patient already moribund, due to an infected hematocoele, where incision with the actual cautery lighted the gases of decomposition with a blue flame. After emptying the clots he painted the enormous cavity with tincture of iodine (ten per cent.). Recovery was apparently complete in forty days. He thinks that in every ambulance train and railway station there should be a flask of tincture of iodine which should be renewed every week. The writer (42) has already reported cases illustrative of this in his practice (NEW YORK MEDICAL JOURNAL, March 26, 1910, December 3, 1910, and February 11, 1911), and more could be cited from every surgeon's experience with this method. For this reason tincture of iodine is the antiseptic of choice in railroad, industrial, and military surgery.

Another not inconsiderable factor in favor of this method was pointed out by J. L. Stretton (56), viz., that the former method of preparation entailed a preliminary stay in the hospital of about three days, during which the hospital bore the expense and considerable of the valuable time of the nurses and internes was given to it. By the iodine method the hospital saved a good round sum in a year and patients are spared the misery caused by the old method.

CASE III. A recent case of the writer illustrated this point. The patient entered the hospital at 7 p. m. On the following morning she had an enema, the uterus was dilated and curetted and painted inside with tincture of iodine, followed by an irrigation of the iodine salt solution. The abdomen was then painted with the tincture and opened in the median line. A portion of a cystic right ovary was excised for cystic degeneration dilated with the tincture and sutured with silk. A peritoneal band, connecting the right broad ligament with the cecum, was divided and painted and the appendix was removed. Tincture of iodine was the only disinfectant used by the surgeon in this case. On the tenth day after the operation the woman walked out of the hospital with her suit case in her hand.

At the thirty-sixth annual meeting of the American Gynecological Association, May 25, 1911 (reported in the NEW YORK MEDICAL JOURNAL, July 29, 1911), Dr. Lewis S. McMurtry, of Louisville, said that last summer he had made a vacation visit to the clinic of the Mayo brothers and all of the patients prepared for abdominal section were painted with tincture of iodine (fifty per cent. solution) in one room and the operations were done in the other room. The other patients were treated in the ordinary way which was now in vogue by surgeons everywhere, simply cleansing the skin without nailbrush and without traumatizing the skin. The patient received a warm bath the day before. The skin was washed off with soap and water the night before, and then when the patient was brought to the operating table he or she received another cleansing with soap and water, and the results were the same by the two methods." This certainly entitles us to consider tincture of iodine a boon in emergency work where there is no time for elaborate preparation.

R. Alcock (*British Medical Journal*, February 3, 1912) states it to be his opinion, confirmed by cases

which he cites, that the perspiration engendered by surgical dressings brings up bacteria which may infect a previously aseptic wound. He therefore uses no dressings whatsoever and paints the wound daily with tincture of iodine. The writer has tested already this treatment and corroborates the excellent results.

The writer, in a former paper, outlined an operative technique which he has found it unnecessary to modify, since subsequent experience has only confirmed him in it. This does not mean that he has had no cases of suppuration, since bacteria are at times so well intrenched as to defy the penetration of any antiseptic, and by the very nature of our work it is necessary for germ and germicide to meet. Gonorrhea in the male is one such instance.

To remove the stain from clothing and hands several preparations have been suggested, hyposulphite of sodium, ammonia water, peroxide of hydrogen, and three per cent. phenol in water. Stretton (56) uses a one per cent. solution of cyllin, which is a forty per cent. phenol preparation. A large drug house in Chicago has sent me some tablets which dissolve in water and decolorize the hand or fabrics stained by iodine. I have found them very satisfactory. A firm in Brooklyn has put up a hospital stain solvent in the form of soap which is also effective for fabrics.

When iodine is applied to tissues saturated with mercurials it causes a considerable chemical reaction with much irritation, and upon the skin it sets up a violent dermatitis.

The authority of Grossich, and his personal assertion that the use of tincture of iodine to sterilize the skin before operation was his method, caused his name to be attached to this technique (*Berliner klinische Wochenschrift*, October 25, 1909).

Monde medical for January, 1910, attributes to Chassevant, in 1906, the recommendation to use a one to fifteen solution of iodine in chloroform as a skin sterilizing agent before incision.

M. Walther, in an address to the Paris Surgical Society, March 24, 1909, reminded the society of his method of sterilizing the skin by means of tincture of iodine. He reported a number of successful laparotomies in which this method was used, and closed his paper by giving an account of the experiments which he had made and of the bacteriological and histological results at which he had arrived (*vide Lancet*, p. 1080, April 10, 1909).

The writer first reported the use of tincture of iodine to sterilize the skin preparatory to a Cesarean section in the *NEW YORK MEDICAL JOURNAL* for May 4, 1907, the operation having been performed December 20, 1906, and gave his technique in the same journal, March 26, 1910.

Waterhouse and Fenwick (*Lancet*, April 16, 1910) report using a two per cent. tincture of iodine in grain alcohol to sterilize the skin before incision. I am credibly informed by Dr. G. S. White, of Savannah, that at least twenty years ago Doctor Fowler, surgeon to the Mount Sinai Hospital, for a time used tincture of iodine to sterilize the abdominal skin, especially the umbilicus, before laparotomies, but later on changed to other procedures. I am unable to find any report by him in medical

magazines of this fact, which, however, doubtless many can corroborate.

SUMMARY.

What are the essential and indispensable properties which a substance must possess to be a surgical disinfectant?

It must be bactericidal in simple solutions with harmless liquids.

It must form solutions with great osmotic power, that is, power to penetrate and reach the deep seated bacteria.

The solutions of this substance must not be poisonous in bactericidal strength.

The solutions must be equally bactericidal in any accessible infection in any tissue of the body.

The disinfectant must not be histolytic, even on debilitated tissue, but should favor cellular recuperation and organization when in solutions of sufficient strength.

It must have prophylactic power when used before any symptoms of infection have appeared.

The solutions of this substance must be simple in formula and easy to prepare.

The substance in antiseptic solution must be cheap.

It must be readily obtainable.

It must be readily and safely transportable in ordinary containers without deterioration.

It should not be irritating to those using it, nor form compounds with other chemicals used in surgery, which may be dangerous. With these points in view, we may reasonably entertain the belief that iodine (and particularly the two per cent. alcoholic tincture and the five per cent. watery solution) comes nearest to fulfilling the requirements of surgical disinfection of any of the substances offered for that purpose.

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THE PHYSICIAN AS AN INVESTOR.

By DOUGLAS FENWICK, ESQ.,
New York.

This is a fertile topic. It suggests more than one meaning, each offering thought for a half hour's talk. In its broadest sense, it suggests the physician as a director of the public welfare, guardian of causes which contribute to the general good. But I am constrained to draw a technical meaning, and disclose the attitude of the physician toward investments; as a "prospect" for the private banker or bond dealer, and finally the scope and character of investments suited to the individual under discussion and the course best calculated to promote his individual good and material progress.

I spent some months a few years ago traveling through this and adjoining States, selling bonds. In that work, a salesman is expected by his firm to look up as many probable buyers of bonds as possible, and I made it a point to call upon as many physicians as I could. Their intelligence and ability were apparent; their knowledge of human nature clearly shown. But for men of their standing and wisdom I found a surprisingly large proportion singularly unable to discuss or pass intelligently upon those forms of investments known as high grade bonds and standard stocks. Income seemingly was the first consideration. The fact that security of principal becomes impaired in proportion as income increases failed to receive the consideration due. Mining and oil stocks of large return offered alluring possibilities which were not always resisted. The cunning appeal of the irresponsible promoter through well prepared advertisements, expensive literature, or eloquent talking representatives found many hard earned dollars of the physi-

cian who was quite willing to take a chance. This suggests a psychological question whether that element springs from an application of daily principles in the practice of the profession? There were few who confined their investments to sound securities of moderate yield. I have thought of it frequently and believe it due to the fact that the physician is so absorbed in a profession requiring thought and study for long hours along lines other than strictly business matters. His personal affairs are, for intervals, subordinated to the interests of his patients to the exclusion of his own good.

Accepting this fact, it reflects glory on the profession, but it is in a sense a misfortune to the individual members. I hesitate to apply to the profession a psychological fact drawn from principles which its teachers enunciate, but I am sure you will pardon a reference to so called mental habits. The trend of one's thoughts is reflected in one's teachings and actions. A mind devoted to a profession requiring constant study and work for others eventually loses to an extent the normal perspective and fails to nourish that element of selfishness essential to its normal well being and material independence. The clergyman, the teacher, members of the law, offer examples. They do not think business; they do not practise business. As with many a physician, he neglects or ignores a selfish business interest. Failing in that, it is improbable that he display caution or shrewdness or business acumen in handling that which he does not conserve.

I call up a case in point. My physician is a young man who has won lucrative practice by strictly business methods. He engaged expensive offices in an attractive part of the city, studied hard, utilized the latest discoveries and took good care of his patients. He adopted and applied systematic business methods. Statements were rendered regularly and payment was insisted upon. He told me he lost few patients by so doing. He said to complaining ones he had studied hard to give them the latest advances in medicine. It cost him money to do so. He gave them service and he expected to be paid. He has succeeded when members of the profession predicted his failure. And while you may not welcome the suggestion from a lay member, I believe that if physicians practised strict business methods, they would find the time spent in that part of their work sufficiently diverting from their regular duties to arouse an interest in acquiring and developing a reserve fund for emergencies. They would be conscious of a growing interest in the selection of securities for their surplus earnings, which should prove a wholesome diversion from their daily work. For there is a subtle pleasure in clipping coupons when one owns the bonds and accepts them as reflecting one's individual efforts.

This brings me to the last phase of the topic, the question of what class of investments is best suited to the physician, and how he is to decide. I should emphasize the wisdom of buying only high grade securities. No mistake is likely to result from the purchase of gilt edged bonds or standard stocks, seasoned by prosperity and panic. The laws of this State specify exactly what bonds may be bought by savings banks, and just how many of each one issue may be taken. These laws constitute a model

for other States. Trustees of estates are told by law to buy only savings bank bonds, unless indeed a discretionary trust. The return is not large, ranging from four per cent. to 4.75 per cent., but it assures, so far as seems possible, the preservation of the principal in an investment. I should mention high class stocks, although I regard them less suitable than good bonds, because of reasons which I have not time to mention. Many good bonds are offered not legal for savings banks. These may be purchased with comparative safety. But in putting your money into investments it is advisable to talk the matter over with a good banking house and be governed largely by the advice received. Such may safely be done, provided you are convinced as to the responsibility of the banking firm. There are many absolutely reliable and responsible ones which act as dealers of bonds and recommend their own lists; others will recommend and purchase the bonds from the stock exchange. However, do not look for too large a yield unless you are willing to take chances with your principal. Rather select such a security as will not cause you sleepless nights and one which you can take to your banks and borrow on if necessary. In other words buy such as will not fail you should you be dependent upon it when your energy is wasted and your vigor declining, and which will be a tribute to your business judgment when passed upon by your executors.

34 WALL STREET.

"NEURALGIA OF THE TESTICLE" CAUSED BY ADHESIONS.

BY EDGAR G. BALLENGER, M. D.,
Atlanta, Ga.,
AND OMAR F. ELDER, M. D.,
Atlanta, Ga.

From reference to the literature we have failed to find *adhesions* given as a cause of "neuralgia" of the testicle, and as we have recently operated upon a patient in whom this condition seemed to be the sole cause of the neuralgic pains which had been present for twelve years, we desire to report briefly the history of this case.

CASE. Mr. X., aged fifty-two years, fell astride a fence twelve years ago, at which time there was some swelling and pain present in the left testicle. Two weeks later, as the swelling subsided, the pain became more intense. Since that time there have been three attacks of pain and swelling which simulated epididymitis. The patient never had gonorrhea, although there was chronic prostatitis due to colon bacilli and staphylococci.

The dull, aching, dragging pain in the testicle had been present since the injury, and while never severe, was very annoying to the patient, interfered much with business affairs, and made a neurasthenic of him. The history and complaints of the patient were almost identical with those often related by patients who have had previous epididymitis. It seemed clearly a "textbook case" of neuralgia of the testicle.

So great had been the annoyance of the patient and so insistent were his pleadings to have this organ removed, we agreed to do a unilateral orchidectomy in spite of the apparently normal condition of his testicle, and in spite of our previous refusal to remove the apparently normal organ. His excessive nervousness, which seemed to arise from this condition, and his age seemed to justify such an operation. Upon incising the tunica vaginalis about fifteen c.c. of clear hydrocele fluid escaped. The testicle

was slightly enlarged and normal in appearance, except for two adhesive bands extending from the globus major to the anterior surface and the internal side of the testicle at about the junction of the upper and middle thirds. The larger band was nine millimetres wide and sixteen millimetres long and the smaller one six millimetres in width and eleven in length.

Such adhesions to the ovary would have at once been given as sufficient cause of neurosis and ovarian pain, and we are firmly of the opinion that the supposed neuralgia of the testicle experienced by this patient was in reality due to these adhesions. Having faithfully promised the patient to remove the testicle we excised it in spite of our belief that perhaps the adhesions might have been incised and the tunica so adjusted and stitched that a cure could have been effected without orchidectomy. The patient made an uneventful recovery and is now free from pain.

In the future when we are called upon to treat patients with neuralgia of the testicle, we will make an incision into the tunica vaginalis, with cocaine anesthesia, and thus determine if adhesions are present. In nearly every instance of the so called neuralgia of the testicle there is a history of previous inflammation or trauma which would obviously be the condition most likely to cause adhesions.

1013-14 NATIONAL BANK BUILDING.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

- CXXIV.—How do you treat streptococcal sore throat, in view of the possible sequela? (Closed July 15th.)
CXXV.—How do you treat gonorrheal "rheumatism"? (Answers due not later than August 15th.)
CXXVI.—How do you treat bronchial asthma? (Answers due not later than September 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to Question CXXIII has been awarded to Dr. Samuel Blumenfeld, of New York, whose article appears below.

PRIZE QUESTION CXXIII. THE CONTINUOUS EXHIBITION OF ALCOHOL.

BY SAMUEL BLUMENFELD, M. D.,
New York.

Before considering where it is advisable to prescribe continuous doses of alcohol it is fitting that we recall to mind some of its physiological actions.

Alcohol is a food only in such quantities as can be oxidized. It is itself assimilable and aids the assimilation of other foods. Alcohol itself will not maintain life for a long time, but in combination with milk or egg, it will.

In the stomach alcohol produces a sensation of warmth and increases the gastric and pancreatic juices, thus also the digestive power and appetite. Large doses, long continued, alter the gastric and pancreatic secretion, decrease digestive power and appetite. Alcohol is rapidly absorbed from the stomach.

It acts as a stimulant to the heart, but ordinarily does not increase the blood pressure. Exceptionally it raises the blood pressure because alcohol stimulates the heart and paralyzes the vasomotor centres. In overdose it depresses both heart and vasomotor centres. Locally alcohol has antiseptic properties and is not corrosive in action.

In acute diseases continued doses of alcohol are beneficial because it enables the system to stand strain of short duration, as it is a stimulant to vital powers. It assists the maintenance of power because it is itself assimilable and aids the assimilation of other foods. For these reasons alcohol is beneficial from the beginning of the disease in typhoid and typhus fevers and in lobar pneumonia and bronchopneumonia. I have obtained excellent results from small doses often repeated, because such doses have steadily sustained effects. I use it in combination with milk, three ounces, and whiskey, one drachm, repeated every two hours. By using this combination there is less tendency to asthenia because it improves the appetite and digestion; less tendency to sordes, restlessness, and nervous manifestations. In pneumonia, alcohol is also used as a cardiac stimulant when the pulse becomes rapid and feeble, the first sound at the apex less distinct, the second pulmonic sound less accentuated, and there are marked nervous symptoms. Excellent results are obtained in using whiskey, one half ounce, in increasing doses. Continued doses of alcohol make a valuable cardiac stimulant in all cases showing signs of heart failure, in doses proportionate to age of patient and urgency of case. The amount of alcohol used must be limited according to the tolerance of the stomach.

In pyemia, septicemia, and exanthemas, and in all acute diseases where the typhoid state has developed, alcohol in the form of whisky given in repeated doses proportionate to urgency of case and age of the patient, does a deal of good, because it lowers the temperature, quiets the nervous and circulatory systems, and is a substitute for food. It enables the system to stand drain; at the same time it checks such drain, thus increasing resistance to disease.

It is important that we watch the effects produced by alcohol to note whether it is beneficial or not. Alcohol does good, if after its use the dry tongue becomes moist, if it lowers temperature and pulse rate, and quiets the nervous disturbance. Should, however, the nervous disturbance become more marked and the tongue and skin dryer, alcohol does harm and the dose is to be diminished.

In all asthenic fevers, erysipelas, diphtheria, and influenza, whiskey in repeated doses does good, be-

cause under its use there is less tendency to asthenia. It acts as a stimulant to the heart and prevents death from prostration.

In phthisis and scrofula alcohol is of great value in continued small doses with the food or with cod-liver oil, or milk punch, to which is added one tablespoonful of whiskey. Alcohol does good here because it acts as a food, aids assimilation of other foods, and so prevents emaciation.

In chronic diseases continued doses are dangerous in making the patient an habitué to the use of alcohol. It should, therefore, never be given to relieve such chronic affections as melancholia, chronic neuralgia, or chronic dyspepsia. Its use in chronic diseases is indicated only as substitute for natural food, to aid assimilation of other foods, and so prevent wasting of the system. For this reason it is of value in chronic dyspepsia in small continued doses. Its use in chronic dyspepsia is not without danger of making the patient an habitué, a condition far more serious than the disease itself.

Alcohol to the aged in moderate, repeated doses, diluted, acts as the mother's milk to the infant. It increases the gastric digestion and appetite. It is the abuse, not the proper use, that makes one an habitué to the use of alcohol. If used judiciously and while watching the effects therefrom, the physician may prevent any of its dangerous effects.

SUMMARY.

Alcohol is beneficial in continued doses as:

1. A cardiac stimulant in all conditions showing signs of heart failure.
2. As a stimulant, whipping up the vital powers to stand a strain of short duration.
3. As a digestant by increasing the gastric and pancreatic secretion and improving the appetite.
4. As a food, because it is itself assimilable and aids the assimilation of other foods. It is used in combination with milk or egg. By this action it prevents death from asthenia.
5. As a tonic in convalescence from acute diseases in the form of wine; a wineglassful after meals.

In conclusion I wish to state that alcohol should not be used in any chronic diseases, because of the patient's danger of becoming an habitué, a condition far worse than the disease itself.

42 SEVENTH STREET.

Therapeutical Notes.

Treatment of Scarlet Fever.—A. F. Plicque, in *Bulletin médical* for May 1, 1912, calls attention to the danger of giving powerful drugs of any sort, especially for continued use, in the early stages of this disease. He quotes Jules Simon as having stated that nearly all children in whom serious internal complications developed in the course of scarlatina had been subjected from the start to energetic treatment with powerful remedies, in particular with opium. More than any other infectious disease, scarlet fever seems from the outset to hinder elimination by the kidneys as well as the skin. Even if the latter is dry, the output of urine is almost always much reduced. The problem is, therefore, to

find measures both sufficient and harmless for the treatment of the more disturbing symptoms such as insomnia and headache, pyrexia, and throat inflammation. Tepid baths (28° to 32° C.), of twenty minutes' duration and given every evening, or if necessary morning and evening, will often induce sufficient sedation. The unpleasant sensation of heat in the skin is also allayed by such baths, though still more effectually by rubbings with the following liniment:

R Cold cream,
Neutral glycerin, } of each 50 grammes
M. ft. linimentum.

The liniment should preferably be used lukewarm. Addition of orange flower water to milk and other fluids may be of some slight use. But in cases with marked insomnia, headache, and restlessness, bleeding by the application of leeches to the mastoids, in order to relieve brain congestion, is the most important measure. Among hypnotics, chloral hydrate, which if anything tends to relieve the brain, still has its advocates, guarded by alcohol to prevent cardiac depression; these drugs are, however, renal irritants. In extreme cases resistant to bloodletting, the following preparation of musk, credited to Simon, may be used:

R Musk, 0.2 to 1.0 gramme (according to age);
Yolk of egg, No. 1;
Boiled water, 100 grammes;
M. To be used as an enema.

For the relief of hyperpyrexia, somewhat cooler baths (23° to 25° C.), of ten minutes' duration and given more frequently, will generally prove successful. The shock of cold baths is best avoided in the early stages, though cold sponging is permissible, and cold water may be poured on the forehead during the tepid baths. Quinine is the best of the antipyretic drugs; while the fall of temperature is not very marked, a favorable action of malaise and the inflammatory symptoms is exerted. In young children Simon's advice is to use granules, each containing 0.01 gramme of quinine sulphate, which may be given in honey or jam; 0.05 gramme is to be administered for each year of the child's age. Quinine hydrochloride may also be given in enemas, double the dose of the sulphate by the mouth being used.

Hydrogen peroxide, diluted two thirds with some alkaline fluid, is the best disinfectant for the throat in scarlatina.

Delivery in Breech Presentation.—C. C. Turner, in the *Pennsylvania Medical Journal*, for May, 1912, writing on the management of breech presentations, states that where the membranes have ruptured and there is very little dilatation of the cervix, progress being consequently slow or nil, a Voorhees bag may be inserted in the cervix or the latter manually dilated under ether anesthesia until it and the lower segments are entirely paralyzed. After one finger, then two fingers, the thumb, three fingers, four, and finally the whole hand have by degrees been inserted. A very good plan, when the fist of the operator is smaller than the fetal head, is to use an ordinary china egg held in the hand. Hand and egg are pushed through the cervix, and, the egg being now held in the palm, are gradually withdrawn, complete dilatation being thereby secured.

After dilatation one foot is pulled down and the body delivered. The posterior shoulder and arm should always be delivered first by carrying the feet and body well up and over to the opposite side. The procedure is then reversed and the other arm delivered in the posterior position, after which delivery is completed by pivoting the head under the symphysis.

A frank breech in a primipara should always be broken up by pulling down a foot, otherwise the breech may form a wedge and become tightly impacted in the cervix.

Uses of Magnesium Oxide in Children.—Deguy, in *Gazette médicale de Nantes* for June 15, 1912, is credited with the following combination to be used as an antacid in children.

R Magnesii oxidi,
Sodii bicarbonatis, } ana 0.2 gramme.
Creteæ præparate,
M. et pone in chartulam No. 1. Sig.: One such powder is to be taken with each meal.

For laxative purposes, one of the following formulæ would be suitable:

I.
R Magnesii oxidi, 4 grammes;
Sacchari, 40 grammes;
Aque aurantii florum, 20 grammes;
Aque distillatæ, q. s. ad 100 c. c.
M. ft. solutio.

II.
R Magnesii oxidi ponderosi, } ana 4 grammes;
Sacchari, }
Anisi pulveris, }
Sennæ pulveris, 16 grammes;
Aurantii foliorum pulveris, 12 grammes;
Olei menthæ piperitæ, q. s.
M. Sig.: One half teaspoonful at night.

III.
R Magnesii oxidi, }
Sulphuris sublimati, } ana 0.25 gramme.
Potassii bitartratis, }
M. et pone in chartulam No. 1.

Treatment of Laryngeal Tuberculosis.—The following measures are suggested in *Union médicale du Nord-est*, April 30, 1912, for the relief of pain in tuberculosis of the larynx:

1. Apply to the larynx a solution composed of:
R Extract of opium, } of each 0.5 gramme;
Extract of belladonna leaves }
Distilled cherry laurel water, 20.0 grammes.
M. ft. solutio.

2. Spray into the larynx a solution of 0.3 gramme of morphine hydrochloride in 500 grammes of distilled water (Moure).

3. Insufflate into the larynx, by means of a suitable tube, a little of the following powder:

R Lead acetate, 2.0 grammes;
Morphine hydrochloride, 0.2 gramme;
Milk sugar, 10.0 grammes.
M. ft. pulvis.

The mucous membranes should previously have been cleansed by means of a spray of potassium chlorate or sodium bicarbonate.

Another procedure of value in laryngeal tuberculosis is cauterization of the ulcerated surfaces, either with silver nitrate, with the galvanocautery, which acts more quickly, with tincture of iodine, or with the following preparation:

R Iodine, 0.3 gramme;
Potassium iodide, 3.0 grammes;
Glycerin, 10.0 grammes.
M. ft. solutio.

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IMPROVING OUR STATISTICS.

The monthly *Bulletin* of the Department of Health of the City of New York reviews the important work done by this efficient body since January 1, 1910, in milk, food, and general sanitary inspection, in the handling of infectious diseases, in the work of the Bureau of Records, and in general administration, and concludes with the vital statistics of the metropolis for the month of May, 1912. During the preceding month, April, the headquarters of the department were removed to the new eight story fireproof building at Centre and Walker Streets, which has been leased by the city for five years. In these commodious quarters, near the other city departments, and in the centre of population from which come the greatest number of citizens to the headquarters office, the department enters upon a new era in its history, and there is no doubt its record for achievement will be greater than ever before.

As a matter of great importance, one in which the United States has lagged behind, and in which we venture to express a hope that New York may set a good example, we note a report on prosecutions for failure to report births. It is not pleasant to read that seventeen of these civil actions were brought against physicians, only two being against midwives.

Sections 1237 and 1239 of the Charter require

that births shall be recorded within ten days. Fines amounting to \$280 were imposed, and in addition there were fifty-six cases pending at the end of the year. Since January 1, 1911, 359 such actions have been brought, resulting in fines in 303 cases. Only nineteen actions have been discontinued after sufficient excuse for the dereliction. From 1905 to the beginning of 1910 only two such cases had been prosecuted by the Department of Health. Reasons for the stricter attitude now assumed by the department are found in the great hardship that may be inflicted, if certificates of birth are not recorded. In recent years, numerous demands have been made upon the department for statements as to the dates of births of children born in this city. This information was required in order to obtain certificates of admission to the public schools and for the issuance of employment certificates to children between fourteen and sixteen years of age. These demands brought to the knowledge of the department many instances of failure on the part of the medical attendant to file the required certificate, and in consequence thousands of citizens were put to considerable trouble and expense. In hundreds of cases in which the medical attendant had in the meantime died, it became legally impossible to file records of birth, even in the Book of Delayed Certificates.

It will be seen that there are good reasons for accuracy in vital statistics, directly affecting the citizen as an individual. When we finally have our national health bureau, an important part of its work will be the collection of such statistics, when for the first time in our history the incidence of disease will be accurately mapped out, a procedure that is likely to bring to light facts that will enable the authorities to undertake a rigid and scientifically managed campaign of prophylaxis, beside devising effective measures to stamp out epidemics as they arise. With infection under control the citizen may subsequently indulge in any incantations he pleases and no objection will be officially made to the assumption by the healer of any school or no school of the credit for individual cures.

CRUELTY TO INDIGENT CONSUMPTIVES.

Seldom can it be said that physicians are guilty of cruelty in the line of their professional work; probably never with truth, unless the fault lies in carelessness and inattention. In sending indigent patients far advanced in pulmonary tuberculosis on a long and costly journey to the Southwest, medical men are guilty of just such cruelty.

Much has been written and spoken lately regarding this evil, but it is still too prevalent. A case

in point is described in a recent issue of the *Journal of Outdoor Life*.¹ A young man of twenty-three years, in an advanced stage of tuberculosis, reached Nebraska on his way from Elyria, Ohio, to Colorado. He carried a letter from his home physician addressed to whom it might concern, asking all who could to help the young man on his way, as a change of climate was absolutely necessary for him. He was stranded in the Nebraska city, sick and penniless. Conditions in the county hospital to which he had to be sent were bad and probably hastened his death.

This is only one instance of many. Less than three years ago the National Association for the Study and Prevention of Tuberculosis² estimated that 7,180 persons hopelessly ill with tuberculosis were sent annually to die in California, Arizona, New Mexico, Texas, and Colorado, most of them by order of their physicians. At least half of these had cases absolutely hopeless under any conditions; about sixty per cent. were so poor as to be unable to secure the necessities of life. Thus over 4,000 consumptives were sent to the Southwest each year either to starve or to become dependent on public charity.

The resources of most of the charitable institutions in the Southwest are drained in caring for patients who in their own homes in the East would be self supporting. The association strongly urges that no consumptive go to that region who has not enough money to pay his passage and provide at least fifty dollars a month for at least a year after arrival.

No patient with an advanced case of tuberculosis should be sent to a distant climate without abundant means of support. The disease can be cured or arrested in any part of the United States, and at home the patient can often help support himself while modifying his manner of living to combat the disease. In addition he is with his own family and among friends. If he is to become a public charge anywhere it should be in his home community. His chances of recovery, especially if advanced in the disease, are greater at home, and he should not suffer the unnecessary cruelty of being sent to a distant State to become a burden on public charity and to die among strangers.

Attention may be directed to a transportation agreement signed by nearly 500 charitable societies and public relief officials, in accordance with which it is agreed not to pay transportation for persons to other cities until, after correspondence or telegraphic communication, it is certain that they will be provided for at their destination.

PALLIATIVE TREATMENT OF HAY FEVER.

A couple of weeks hence, victims of hay fever—or hyperesthetic rhinitis as it is termed in scientific circles—will flock to the White Mountains, the Catskills, the Adirondacks, Nantucket, Mount Desert, etc., or undertake a prolonged sea voyage, to escape the distressing symptoms of the disease. Unfortunately even these favored sufferers do not always obtain complete relief. As to those who, less well supplied with this world's goods—the vast majority, are obliged to stay at home, they will have to submit to the torments certain pollens impose upon them through the intermediary of their hyperesthetic mucous membranes.

Textbooks are replete with "abortive" remedies; but experience has shown that, at least in the great majority of cases, they fail to fulfill their mission, while adding often to the symptom complex various unpleasant phenomena. Apart from the surgical measures which in a small proportion of cases procure relief through the removal of intranasal pressure, it may be said, in fact, that no prophylactic treatment capable of insuring lasting benefit has as yet been devised. We are thus relegated to palliative measures, a few of which, fortunately, have proved to be of value. It is to these that we wish briefly to refer.

Whatever be the underlying cause of hay fever, two salient features demand attention, viz., the engorgement of the nasal mucosa and the oversensitive condition of the latter to certain external irritants. To control these means relative comfort to the patient. The first is readily met by applying epinephrin ointment, one to 1,000, now available in tubes supplied with a tip which, introduced into each nostril, reaches to the inferior turbinate. A quantity no larger than a pea, projected over the latter and allowed to flow posteriorly by tilting the head backward, soon relieves the obstructed nostril by causing its swollen mucosa to contract. But even this powerful agent would prove useless were it alone depended upon, since the mucosa would none the less be exposed to the external irritants. To prevent this it should be protected, by covering it, at frequent intervals, with a film of oil containing a mild anesthetic. A five to ten grain to the ounce solution of menthol in fluid petrolatum applied every hour with an oil atomizer, will sustain the effect of one application of the ointment for a considerable time, often several hours, even while the mucosa is exposed to quantities of irritating pollen and dust, as during a railroad journey.

The itching in the inner canthi is sometimes distressing. Cold water from the spigot, allowed to

¹E. S. Hall, *Journal of Outdoor Life*, July, 1912, page 1391.

²National Association for the Study and Prevention of Tuberculosis, press service bulletin for September 2, 1909.

flow freely to the eyes through a small rubber tube, quickly overcomes this symptom. The wearing of blue glasses affords protection against this and the other phenomena of the disease. Meats, coffee, and tea should be avoided. Asthma sometimes complicates the situation; but if the foregoing measures are faithfully carried out, five grains of potassium iodide and five minims of tincture of belladonna every three hours will overcome it.

A CAUSE OF THE FAILURE OF THE LLOYD GEORGE PROJECT.

We learn by cable that the physicians of Great Britain have successfully juggled Mr. Lloyd George's insurance bill by the refusal of over twenty-seven thousand of them to accept the pittance of \$1.44 per capita for medical and surgical attendance on each insured person. This action on the part of the profession renders it impossible for the government to extend to the people what was considered the chief benefit of the act. The refusal was made official at a plenary session of the British Medical Association at Liverpool on July 23d.

We think it worthy of note that this advanced socialistic measure of Lloyd George was rejected, not as a matter of principle, but merely because the physicians did not consider the proposed fee large enough. If it had been raised to \$2.04 per capita, no opposition would have been made and socialism in Great Britain would have taken a notable stride forward. This deserves thought. Future suggestions of the kind will undoubtedly be considered as this one was, not in the least upon *a priori* grounds, but as they affect each individual voter; a very narrow view, no doubt, but inevitable in the present individualistic philosophy of the majority of civilized mankind.

PITUITARY EXTRACT IN THE TREAT- MENT OF RICKETS.

Noting that pituitary extract is rich in phosphorus, Klotz, of the faculty of medicine at Tübingen, has been using it, in combination with calcium carbonate, in the treatment of rickets. According to *Semaine médicale* for July 17th, he has tried this treatment in five children between the ages of one year and two years, who were unable not only to walk, but even to stand erect. In so short a period as from eight to fifteen days, these children actually began to walk, while after five or six weeks their transformation was remarkable. The sensitiveness of the bones was diminished so that they no longer cried when placed on their feet, their weight, lowered by diarrhea, quickly increased, their muscles became firmer, from a condition of gloom and apathy they became cheerful, the fontanelles began to

close, and the teeth were notably stimulated in their growth. As in osteomalacia, where the pituitary extract seems to be equally efficacious, Klotz attributes the results to the phosphorus rather than to the calcium.

ANESTHESIA BY QUININE AND UREA HYDROCHLORIDE.

We publish in this issue of the *JOURNAL* a communication in which stress is laid upon the anesthetic effects of a combination of urea hydrochloride and quinine when used along with the generally painful injections of mercury salicylate. In the *Lancet* for June 15th, F. W. Forbes Ross wrote that he had found the one per cent. solution of quinine and urea hydrochloride of great value in inducing prompt and effective anesthesia after traumatism, mentioning cases of scalding in particular. There is no doubt that the combination in question has a profound anesthetic action, and it has been used for some time in operations on the nose, throat, anus, and rectum, sometimes by injection, but also, in much greater strength, by merely rubbing on the mucous membrane. It has been superseded by other local agents, however, in the hands of most operators, but as used by our contributor it has obvious advantages over cocaine and allied drugs.

A SINGULAR COMPLICATION IN THE USE OF NEOSALVARSAN.

Sicard and Leblanc reported to the Société médicale des hôpitaux on July 5, 1912, the singular complication of severe lead poisoning observed in a patient after the administration of several small doses of neosalvarsan. Investigation, according to *Presse médicale* for July 10th, disclosed that their distilling apparatus was constructed of a glass unusually rich in lead silicate, which entered into solution when the overheated glass was not sufficiently cooled by the refrigerator. Thenceforward the experimenters used a different glass and were careful to test its content of lead before use, by means of the blow-pipe.

A DISH IN HYPOCHLORHYDRIA.

The art of cooking is at a low ebb in the United States outside of the larger cities, which leads to great waste on account of inability to use "left-overs." With French thoroughness Hamaide and Nigay, in *Journal de médecine de Paris* for July 6, 1912, when prescribing a soufflé as the main dish for the midday meal of a hypochlorhydric patient, give the recipe. So simple, so inexpensive, and so palatable a dish ought to be known to our readers. We are directed to take about three ounces of roast fowl or ham, or one of the less fatty fish, parboiled in salt water, and to grind it fine. Then three mealy potatoes are mashed and mixed with the meat or fish, a dash of nutmeg is added, then enough hot milk to make a thick paste, and the yolks of two eggs well diluted are dropped in, along with the white of one egg whipped to a froth. This delecta-

ble mixture is placed in a buttered dish and cooked, either in a double boiler or in the oven, for twenty to thirty minutes.

ERRONEOUS REPORTS CONCERNING DIABETES.

A report has been freely circulated that a "cure" for diabetes has been worked out by investigators at Cornell University Medical College. Dr. W. M. Polk, dean and director of the college, asks us to state that the institution knows nothing of the "cure" or of the measures pursued to establish its value.

Medical Law.

VIII. CIVIL MALPRACTICE.

An unusual case, growing out of an x ray injury, is presented in *Jones vs. Tri-State Telephone & Telegraph Co.*, 136 Northwestern Rep. 741. The plaintiff, an employee of the defendant, had been injured while in the performance of his duties. A physician called to attend him diagnosed the injury as a displacement of the sacroiliac joint, and used heroic treatment that is asserted to have resulted in forcing the joint into place. Plaintiff was making good progress toward recovery, when the general manager of the defendant requested him to submit to an x ray picture being taken. Plaintiff and his physician opposed the request, but the manager guaranteed that taking the picture would not injure plaintiff and threatened to discharge him if he refused to submit. After much hesitation and resistance plaintiff submitted and a doctor employed by defendant for the purpose of taking the picture, applied the x ray over plaintiff's abdomen. Plaintiff asserted that the current was left turned on for more than seven minutes, and that he sustained a severe burning of the tissues, and, as a result, was suffering from paralysis of the bowels.

The case is unusual in that it is not an action against the physician who applied the x ray, but against the employer. In commenting upon this feature of the case Mr. Justice Bunn said:

The doctor was the servant of the defendant. The case is the same therefore, as if defendant's manager, or any other agent or employee, had inflicted the injury, and the rule of *respondent superior* applies, rather than the law relative to the liability of a physician or surgeon to his patient, or to the liability of a master who employs a physician to treat his servant.

Upon the question of liability the Justice, continuing, said:

The instrumentality was under the exclusive control of defendant, and there is sufficient evidence that injury to the subject is not a necessary result of the taking of an x ray picture, if proper instrumentalities and proper care are used. Certainly we cannot say that plaintiff's injuries were not the result of the exposure. These facts are enough to make the case one of *res ipsa loquitur*, and to make the burden on defendant to show that there was no negligence. Defendant did not show this, at least conclusively. Indeed, there was sufficient evidence of negligence, even without the *res ipsa* rule, to make a case for the jury.

X. THE PHYSICIAN AS WITNESS.

In the case of *Richardson vs. Metropolitan St. Ry. Co.*, 147 Southwestern Rep. 1126, the Kansas

City Court of Appeals held that a physician, in testifying to an examination of a patient who had been injured in a street railway accident, was properly permitted to repeat complaints and exclamations of pain uttered by the patient at the time of the making of the examination, these being distinguished from statements made by the patient of pain suffered at some time in the past.

In this case objections were made to the form of hypothetical questions put to the physician, until he was asked if the injury set forth in the question might have produced plaintiff's nervous condition, which question he answered in the affirmative. This form of the question the court held to be proper.

Mr. Justice Ellison, in commenting on the evidence offered in the case, said:

We can see no objection to a showing of plaintiff's condition and the effect produced upon her in an attempt to walk on the street in the heat. We think it sufficiently recent from the injury and sufficiently connected to have a tendency to show her condition as affected by the injury.

In the case of *Owensboro City Ry. Co. vs. Tucker*, 147 Southwestern Rep. 916, an objection was interposed to a hypothetical question framed upon an inquiry as to whether or not the condition in which the witness found the patient could have resulted from the injuries which the evidence disclosed he had suffered, but the Court of Appeals of Kentucky held the question to be proper.

News Items.

- Changes of Address.**—Dr. Louis René Kaufman, to The Paulette, 150-156 West Eightieth Street, New York.
Dr. T. A. Maloney, to 28 Alden Street, Springfield, Mass.
Dr. James S. Sanders, to Park's Block, Westfield, Mass.
Dr. Thomas J. Roche, to 421 State Street, Bridgeport, Conn.
Dr. George E. Lane, to 290 Mill Street, Poughkeepsie, N. Y.
Dr. Edward Brace, to Ellington, Conn.
Dr. Hastings H. Hart, to 7 Colden Avenue, White Plains, N. Y.
Dr. J. M. Latta, to 414 Butte Building, Wichita, Kas.
Dr. J. C. Cully, to Oxford, Miss.
Dr. Arthur H. Terry, to 411 Convent Avenue, New York.
Dr. Benjamin C. Andrews, to Bay Shore, L. I.
Dr. W. Selden Hodlett, to Danville, Va.
Dr. T. R. Holland, to 603 Cumberland Street, Lebanon, Pa.
Dr. F. M. Orton, to Ashland, N. H.
Dr. Henry S. Turrill, to Grand Gorge, N. Y.
Dr. John R. McDill, to 470 Jackson Street, Milwaukee, Wis.
Dr. L. B. Rowe, to Orfordville, Wis.
Dr. David T. Berube, to Dover, N. H.
Dr. C. E. Maxwell, to Portlandville, N. Y.
Dr. C. T. Womack, to Martinsville, Va.

Birmingham Medical College.—Plans are on foot to incorporate this institution as the medical faculty of the University of Alabama, the main buildings of which are situated in Tuscaloosa.

Michigan State Medical Society.—At the annual meeting of this society, held at Muskegon, July 8th, 9th, and 10th, Dr. W. H. Sawyer, of Hillsdale, was elected president; first vice-president, Dr. D. G. Cook, of Holland; second vice-president, Dr. J. F. Denslow, of Muskegon; third vice-president, Dr. Samuel Osborn, of Lansing; fourth vice-president, Dr. C. E. Holdsworth, of Traverse City. The next meeting will be held in Flint, in September, 1913.

Vermont Health Officers' School.—The fourteenth annual session of this school will open on Monday evening, August 26th, in Burlington.

Enlarging Isolation Hospital of Toronto.—A new wing has been added to this institution, giving accommodations to 125 patients, at a cost to the city of \$125,000. Communication with the old building is by an underground tunnel.

Infant Mortality in New York.—Deaths from sunstroke for the week ending July 13th amounted to only forty-two, as compared with 288 for the week ending July 15, 1911. The striking reduction in infant mortality which has characterized the statistics so far this year also continued during that week, when deaths from all causes under one year totaled 309, compared with 359 for the corresponding week of 1911. This result is attributed in large part to the work of the fifty-five infants' municipal milk stations supplemented by other stations operated under private auspices and in general to the work of the Babies' Welfare Association which, for the first time, has united all forces striving for the reduction of the infant death rate.

The general death rate for the week ending July 13, 1912, was 14.02, against 18.22 for the corresponding week of 1911, the difference of 4.20 being equivalent to a decrease of 416 deaths. Over half of the year 1912 has elapsed and the death rate is 14.90, compared with 16.35 for the first twenty-eight weeks of 1911.

Missouri Medical Association.—The fifty-fifth annual meeting of the State medical society of Missouri was held in Sedalia recently. Officers were elected as follows: Dr. Robert M. Funkhouser, of St. Louis, president; vice-presidents, Dr. J. S. Wallace, of Brunswick, Mo.; Dr. H. S. Crawford, of Harrisonville, Mo.; Dr. J. N. Baskett, of Hannibal, Mo.; Dr. C. C. Conover, of Kansas City, Mo.; Dr. J. T. Timberman, of Marston, Mo. Councillors—Eighth district, Dr. N. W. Cape, of Maplewood, Mo.; Thirteenth district, Dr. F. E. Murphy, of Kansas City, Mo.; Twentieth district, Dr. F. J. Lutz, of St. Louis; Twenty-third district, Dr. C. Allen, of Bernie, Mo.; Twenty-fourth district, Dr. J. B. Wright, of Trenton, Mo.; Twenty-second district, Dr. J. S. Cannon, of Farnfeld, Mo.; Twenty-seventh district, Dr. J. H. Elliott, of West Plains, Mo. Delegates to American Medical Association—Dr. C. R. Woodson, of St. Joseph, Mo.; Dr. H. L. Reid, of Charleston, Mo.; Dr. A. W. McAlester, of Kansas City, Mo. Member committee on public health and legislation—Dr. B. B. Parrish, of Kirksville, Mo. Members committee on defense—Dr. Joseph Grindon, of St. Louis, Mo.; Dr. W. B. Dorrsett, of St. Louis, Mo.; Dr. R. E. Scheluter, of St. Louis, Mo. Secretary and editor, Dr. E. J. Goodwin (re-elected); treasurer, Dr. J. F. Welch, of Salisbury; orator in medicine, Dr. Albert H. Hammel, of St. Louis; orator in surgery, Dr. E. F. Yancey, of Sedalia, Mo.

Personal.—Dr. William H. Woglom, of Brooklyn, has been appointed first assistant in New York of the Imperial Cancer Research Fund of London.

Dr. W. A. Kennedy, of Kingston, Ont., has been appointed lecturer in pharmacology and therapeutics in Queens University.

Dr. Vernon M. Parkinson has been appointed house surgeon of the Mount Vernon, N. Y., Hospital.

Dr. George E. MacArthur is the new member of the Ipswich, Mass., Board of Health.

Dr. Josephus A. Wright is the new superintendent of Sydenham Hospital, Baltimore.

Dr. William H. Shanahan has been appointed house surgeon of the Maine Eye and Ear Infirmary at Portland.

Dr. Henry R. Douglass, of Newville, Pa., has been appointed milk inspector at Harrisburg.

Dr. O. J. Furman, of Shortsville, N. Y., has been appointed to the medical staff of the Kings Park, L. I., Hospital for the Insane.

Dr. Herbert J. Smith has been elected clinical professor of dermatology at Medico-Chirurgical College of Philadelphia.

Dr. Merrick Lincoln, of Worcester, has been elected medical inspector for the eleventh district of Massachusetts at a salary of \$2,000 per annum.

Dr. E. P. W. Richter, of Saginaw, Mich., suffered painful injuries in the recent Père Marquette Railroad accident, and was removed to the Burleson Hospital in Grand Rapids.

Dr. A. Rose has been appointed an associate editor of a medical lexicon to be published in Berlin.

Dr. M. Neustaedter to the Medical Profession.—Doctor Neustaedter writes that since his last report many new facts have been observed in connection with experimental poliomyelitis. As he is continuing his research work at the Cornell Medical College along these lines, the profession is asked to aid by informing him of any case of poliomyelitis that may be met with (especially a suspected one), so that he may have the sweepings collected.

Bushwick Hospital, Brooklyn.—Ground was broken a few days ago for the new building of this institution, which will be nearly three times as large as the old and vastly better fitted for the use to which it will be put. The building, when equipped, will have cost \$125,000, according to the present plans. The structure will have a cellar, basement, and five floors. The offices, board room, dining room, reception room, internes' rooms, and children's ward, with ten beds, will be on the second floor. Fourteen private rooms, two semiprivate rooms with accommodations for from two to four patients, and the maternity ward with accommodations for eight patients, will be on the third floor. The wards for men and women will occupy the fourth floor. Two operating rooms and bedrooms for the nurses will be on the fifth floor.

American Association of Clinical Research.—The fourth annual meeting of this body will take place in New York, at the Academy of Medicine, on November 9, 1912. The sessions will be held from 9 a. m. to 1 p. m., from 3 p. m. to 6 p. m., and from 8 p. m. to 10 p. m. The evening session will be open to the public. Notable contributions on the Negri bodies, on certain fluids for tubercle bacilli in the urine, on adjustment and function, on psychoanalysis and *traumbedeutung*, on a pandemic of malignant encapsulated throat coccus, on the single remedy, on indicanuria and glycosuria, on disease conditions expressive of correct diagnosis, on biochemical problems, on the two most far reaching discoveries in medicine, and others are to be given. Every member of the association is cordially invited to contribute a paper. The title should be sent at once to the permanent secretary, so that the programme may be completed. As soon as completed, the programme will be mailed. Members will please make an effort not only to contribute a paper, but to be present at the coming meeting, to bring friends, and to assist in the most important movement of medicine as represented in the aim of this association, the systematic, scientific investigation and advancement of medicine by conclusive clinical and clinically allied methods. Friends should be invited to become members, and their support will be cordially appreciated.

The Red Cross Seals.—Seventy-five million Red Cross seals are now being printed for the holiday sale in 1912. The National Association for the Study and Prevention of Tuberculosis, which in cooperation with the American Red Cross will conduct the sale, makes this announcement and states further that the outlook this year is bright for a larger sale than ever before. The seal this year is said to be the best of its kind that the Red Cross has issued. The design is in three colors, red, green, and gray. A Santa Claus head in the three colors is shown in the centre surrounded by holly wreaths. In each corner is a small red cross. The seal bears the greeting Merry Christmas, Happy New Year, American Red Cross, 1912. The campaign for selling Red Cross seals will be carried on in practically every State and Territory in the United States, and even in Porto Rico, the Canal Zone, Hawaii, and Philippine Islands. No less than 100,000 volunteer agents, including department, drug, and other stores, motion picture theatres, and individuals, will be engaged in the work. Before the sale is completed, it is expected that at least 100,000,000 seals will have been printed and distributed, beside several million posters, display cards, and other forms of advertising literature. Last year over 32,000,000 seals were sold; in 1910, over 31,000,000; in 1909, about 32,000,000; and in 1908, the first year of the sale, only 13,500,000. In all, the sale in four years has realized nearly \$1,000,000 for the antituberculosis campaign, since all of the money from this movement goes for the prevention of consumption. New York State sold the most seals in 1911, disposing of 6,356,368; Ohio came next with 3,500,480; Wisconsin third with 2,913,144, and Illinois fourth with 2,101,632. Texas showed the greatest percentage of gain, having increased its sale from 100,000 in 1910 to over 1,250,000 in 1911. Indiana showed the second greatest gain, with an increase from 683,750 in 1910 to 1,215,545.

Pith of Progressive Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL

July 11, 1912.

1. FARRAR COBB: Cancer of Uterus. Operable Cases. Operation of Choice. Study of 300 Cases at Massachusetts General Hospital from 1890 to 1910.
2. C. A. PORTER: Surgical Treatment of Cancer of Uterus.
3. F. B. LUND: Advantages of Abdominal Hysterectomy.
4. W. P. GRAVES: Hopeful Aspects of Cancer of Uterus.
5. WILHELM M. EVELSON: Another Conception of Anaphylaxis.
6. CHANNING C. SIMMONS: Means of Determining End Results of Operations on Hospital Patients.
7. FRANCIS W. PALFREY and JAMES B. AYER: Chronic Infective Endocarditis with Ulceration of Chordæ Tendineæ.

1, 2, 3, and 4. Abdominal Hysterectomy.—

Cobb, Porter, Lund, and Graves agree that Wertheim's abdominal hysterectomy is the operation of choice in cancer of the uterus, including cancer of the cervix, because it shows a smaller mortality and a larger proportion of cures than other methods. By a cure is meant nonrecurrence within five years.

5. **Anaphylaxis.**—Barton does not agree with either the French or the German idea as to the nature of anaphylaxis, but thinks it consists of the formation of proteolytic ferments, or enzymes, in certain tissues of the body, especially the epithelial and perhaps the endothelial. The enzymes, or ferments, endow the cells in which they are formed, or the fluids into which they are excreted, with an increased capacity for digesting foreign proteid. He considers that the symptoms of anaphylaxis are partly reflex results of the tremendous physiological aberration which this vicarious digestion induces, and partly the result of the products themselves acting in a toxic manner upon the cells of the central nervous system and other organs.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

July 13, 1912.

1. THOMAS W. HUNTINGTON: Hospital Problem.
2. JOHN A. HARTWELL and J. P. HOGUET: Experimental Intestinal Obstruction in Dogs: Treatment with Large Amounts of Normal Saline Solution.
3. WALTER B. CHASE: Resistance of Patient as Guide to Operative Procedure.
4. JOHN B. DEANER: Hysterotomy.
5. M. H. FLETCHER: Unclean Mouth and Its Evil Results.
6. JOHN S. MARSHALL: Wanted: Sense of Asepsis.
7. H. J. BOLDT: Diseases of Fallopian Tubes.
8. H. C. BACUM: Etiology and Treatment of Superfluous Hair.
9. ERNEST D. CHIPMAN: Cutaneous Reactions.
10. WILLIAM C. FISHER: Care of Mouth of Sick.
11. ARTHUR D. BEVAN: Dilatation of Large Bowel.
12. GEORGE W. CHILE: Results of Operations, Especially Abdominal, Performed on the Principle of Anoci Association.
13. JOSEPH C. BLOOMGOOD: Dilatation of Duodenum in Relation to Surgery of Stomach and Colon.

1. **The Hospital Problem.**—See this JOURNAL for June 8th, page 1219.

3. **Resistance of the Patient as a Guide to Operative Procedure.**—See this JOURNAL for June 8th, page 1221.

4. **Hysterotomy.**—See this JOURNAL for June 8th, page 1220.

7. **Diseases of the Fallopian Tubes.**—See this JOURNAL for June 15th, page 1293.

11. **Dilatation of the Large Bowel.**—See this JOURNAL for June 8th, page 1220.

12. **Results of Operations, Especially Abdominal, Performed on the Principle of the Anoci Association.**—See this JOURNAL for June 8th, page 1219.

MEDICAL RECORD.

July 13, 1912.

1. MAX EINHORN: Indications for Operations in Diseases of Digestive Tract.
2. S. ADOLPHUS KNOFF: Immigration of Tuberculous into United States, Problem for Every Nation.

3. JOHN ALLAN: Anesthesia in Submucous Resection of Septum Nasi.
4. SAMUEL H. BROWN: Visual Acuity and Montessori Method of Instructing Children.
5. WILLIAM A. BOYD: Folie à Deux, with Report of Case.
6. PERRY B. HOUGH: What Part Should General Practitioner Take in Campaign for Conservation of Vision?
7. TOM A. WILLIAMS: Unusual Case of Tabes with Toxic Complications in Etiology.

1. **Indications for Operations in Diseases of the Digestive Tract.**—Einhorn calls attention to the large number of operations done in these cases and expresses the opinion that a great many surgeons have operated when not exactly right. He has met with patients who having undergone one or two operations with unsatisfactory results, practically suffer from the same symptoms they previously had, the operations not being those of necessity, but of choice. Two points are important in these not absolutely necessary operations. The first is that while a diagnosis is desirable it is far from being necessary, reliance being placed upon making the diagnosis after the abdomen is opened. The second is the theory that cancers develop upon the bases of ulcers, especially in the stomach, giving rise to the expression of a precancerous stage and to the opinion that this precancerous stage must be removed to prevent the arrival of the cancer. Exception is taken to both these points; diagnosis in many cases cannot be made by opening the abdomen and not more than one ulcer in twenty becomes cancerous. Concerning the early diagnosis of gastric cancer, it is often impossible to make an exact diagnosis. An exploratory incision for purposes of diagnosis is justifiable only in a small percentage of cases; in the great majority it is not indicated. If the surgeon is in doubt the abdomen should not be cut open. The great value of the clinician's work is allowed; they should be the first to recognize the condition in which operation is necessary. As to the general indications for operative intervention two broad principles still hold: First, operations on the stomach for malignant diseases should be done as early as possible, after the diagnosis is made, if it is feasible; second, in all benign affections the contrary principle should prevail: First, exhaust all medical means and measures, and if relief does not follow, then it is time for surgical interference which can accomplish something of good. In malignant affections before making a radical operation search should be made for evidences of a general infection, which would render it useless, such as a secondary metastasis in the liver, glands, and other organs. In some cases, however, a palliative operation may be feasible and advisable. It is not right to tell a patient that he has a malignant disease or a fatal malady. In acute hemorrhages medical treatment is advised, as the mortality in cases operated in is very great, and exceptionally small in cases medically treated with rest and abstinence from food. In perforations operation is advised as soon as the diagnosis of perforation is made, whether of stomach, duodenum, lower intestine, gallbladder, pancreas, appendix, or bladder. Surgery is indicated if there is a very severe process, an acute infection, perforation, or a process which leads to perforation. Chronic ulcer of the stomach should be treated medically, except when repeated hemorrhages endanger life, due to ulcerations not at the cardia and not to conditions in the

esophagus or along the cardia when gastroenterostomy is indicated, provided the ulcer is situated near the pylorus or in the duodenum.

2. Immigration of the Tuberculous into the United States.—Knopf protests against the action of the Treasury Department in classifying pulmonary tuberculosis with dangerous contagious diseases, holding that this decision is not based either on clinical experience or on scientific experiments. While he is strongly opposed to allowing foreign governments to unload their poor and dependent consumptives on us, he asserts that it is inhuman, and even cruel, to prevent a well to do patient, no matter in what stage of the disease, from entering whether he comes as a visitor or to enter a sanatorium or to settle in some of our healthful climates. To prevent the propagation of the disease and the procreation of a tuberculously predisposed race, the author recommends sterilization (vasectomy for the male and ligation of the Fallopian tubes for the female) if these persons insist upon marrying while ill with a directly or indirectly transmissible disease such as tuberculosis. It should be an international policy to segregate the hopelessly ill to prevent them from infecting others and from procreating.

3. Anesthesia in Submucous Resection of the Nasal Septum.—Allan mentions three methods of inducing local anesthesia. 1. Packing the nasal fossæ with gauze which has been soaked in a solution of the anesthetic; 2, injection under the mucous membrane or mucoperiosteum covering the septum nasi of a weak solution of the anesthetic; 3, Freer's method in which crystals of cocaine hydrochloride are directly rubbed up and down on the mucous membrane of the septum. The author invariably employs the first method, using a gauze soaked in a 20 per cent. solution of cocaine and a one in 4,000 solution of adrenalin chloride. In certain cases general and local anesthesia must be combined. In these cases the author uses either chloroform or a mixture of chloroform and ether, giving only enough to dull the senses and abolish reflex action.

6. The General Practitioner and the Conservation of Vision.—Hough believes that the medical man in general practice should be able to diagnose and treat the more common complaints of the eye. If too busy to give patients personal care, he should take time to advise them of the necessity of proper treatment and to refer them to an optician or an oculist, explaining to them the difference between the two.

BRITISH MEDICAL JOURNAL

July 6, 1912.

1. J. F. JORDAN: Puerperal Infection.
2. R. W. MURRAY: Etiology of Torsion of Testis.
3. J. W. G. GRANT: Acute Epididymitis Produced by Muscular Strain.
4. ANDREW DALFOUR: Sleeping Sickness.
5. F. W. EDRIDGE-GREEN: Necessity of Use of Color Names in Test for Color Blindness.

1. Puerperal Infection.—Jordan classifies the disease by dividing the cases into three groups. The first contains those cases which are mild in their manifestations and which end easily in recovery. The second, those which are acutely infected and end fatally. The third, those that are severely infected or severe for a long time, these usually, but

not always end in recovery. He has taken cultures from twenty-one cases which have come under his care and streptococcus was isolated from seventeen, or eighty per cent. This streptococcus is not of the usual type, and is not found in other conditions, hence he suggests that it may well be termed *Streptococcus puerperalis*. From the remaining cases, there were isolated staphylococci and *Bacillus coli*. As a result of recent work Jordan is inclined to believe that considerable benefit is to be obtained in the treatment of these cases by the use of an autogenous vaccine. He has shown that even in cases in which it does not produce the prompt effects which sometimes follow its use, it tends to minimize the secondary surgical complications, such as abscess; that is, if such develops it is readily cured by surgical measures and does not have the usual grade of malignancy that is seen in most cases of this type.

2. Torsion of the Testis.—Murray has reviewed the reports of the details of the cases of this condition so far observed. He cites the views concerning the causation of the condition as expressed by the several observers and analyzes the evidence upon which such views are based. He comes to the conclusion that the condition is, in part at least, congenital in origin. His view is that there is an imperfectly developed testis, having a long mesorchium. In all but one of the cases reported the testis has been undescended. These several factors render slight twists of the testicle on the cord probable, with a resulting diminution in the capacity of the vascular supply. The fact that the condition occurs most frequently after a strain, or at the time of puberty, is in accordance with this explanation, for it is this which supplies the sudden congestion which leads to the development of thrombosis of the vessel and the acute symptoms of the condition.

LANCET.

July 6, 1912.

1. L. S. DUDGEON: Pathology of Immunity (Lecture IV).
2. F. W. JONES: Vascular Lesion in Middle Meningeal Hemorrhage.
3. W. K. HUNTER: Angina Abdominis.
4. M. L. HEPBURN: Ophthalmology of General Practice.
5. W. J. SIMPSON: Etiology of Vaccinia; Cultivation of Microbe of Variola.
6. C. FOSBER: Examination of Diphtheria Specimens; New Staining Technique.
7. C. B. LOCKWOOD and W. D. HARMER: Removal of an Endothoracic Thyroid Tumor.
8. A. DALFOUR: Blood Puzzle Solved. So Called X Bodies.
9. I. D. HARRIS: Ultraviolet Light in Treatment of Alopecia.
10. H. G. LAWRENCE: Unusual Case of Prolonged Fever.

1. Pathology of Immunity.—Dudgeon completes his series of lectures in this, the fourth. He finds that in the majority of instances the body fluids obtained from the infected focus are devoid of opsonin and complement, but in some acute infections of very short duration, and in certain bacterial conditions affecting the serous cavities, the body fluids are found to be as potent as the blood serum. For example, exudates from gonorrheal joints are particularly active and retain their activity for a longer time than is the case with any other pyogenic infection. Many of the exudates formed in the animal body by the action of bacterial infection contain aggressins, though this is not necessarily the case. If the exudate contains a full supply of active complement and opsonin it seldom

contains much aggressin. Hence some exudates possess an activity beneficial to the host while others, those containing much aggressin, are detrimental. It is a noteworthy fact, however, that the action of aggressive exudates is not necessarily specific; and various exudates and blood sera may produce an aggressive effect apart from any question of specificity. He speaks of the recent writings upon the dangers of autoinoculation, particularly in tuberculosis, and remarks that this subject has been viewed upon one side only. It is the opinion of Dudgeon that the radical operative manoeuvres so often resorted to in cases of infection, such as acute peritonitis, promote a grade of autoinoculation greater than any caused by exertion in tuberculosis, and are very frequently the cause of the bad results of operative interference. In addition, the operation may be removing a fluid in itself beneficial. This view is confirmed by the observations of some surgeons. The violent efforts at removal of the infected fluid often lead to the absorption of a fatal dose of the bacteria and their toxins. There is strong evidence that following the injection of living or dead bacteria, or filtered exudates or blood serum, active opsonin and complement, together with a supply of the animal's body cells are to be found at the site of the infection. The same is true of the injection of leucocytes.

2. Vascular Lesion in Middle Meningeal Hemorrhage.—Jones suggests, from the evidence derived from three cases, that this form of hemorrhage is not due to a rupture of the artery or of one of its branches, but to a rupture, single or multiple, of the venous sinus. This passes in the groove along with the artery and has as one of its walls the thin outer layer of the dura. This layer is attached to the bone, and blows easily rupture the attachments more or less freely. There is also an oozing of the extravasated blood into, and even through the inner layer of the dura. The slow development of the hemorrhage and the absence of brisk bleeding seen upon operation confirm the idea of venous hemorrhage rather than arterial.

4. Ophthalmology of General Practice.—Hepburn believes that the general practitioner should be able to treat certain diseases of the eye with some skill and intelligence, but he draws the lines close. He thinks that the general practitioner should exclude from his scope the greater part of refraction work, all detailed ophthalmoscopic examination, and all but a few operations on the eyeball and its appendages. He then proceeds to outline, in a very clear way, some of the most important points in diagnosis and treatment of those conditions which remain to the general practitioner.

5. Vaccinia.—Simpson cultivated a diplobacterium from cattle ill with a disease which was apparently smallpox. From cultures of this he infected other cattle and successfully used the serum as a vaccine on children, as subsequent vaccination with known variola vaccine failed to "take." He was also able to pass human variola virus through the cow and obtain vaccine which was effective, which confirms the beliefs of the older observers but is opposed to those of the later school.

6. New Stain for Diphtheria Bacilli.—Ponder finds that the use of toluidin blue gives a better differentiation than any means yet devised, and is

at the same time simpler. He uses toluidin blue, 0.02 gramme; glacial acetic acid, one c.c.; absolute alcohol, 2 c. c.; and distilled water to make 100 c. c. A smear is taken fresh from the throat and, when fixed on a cover glass, is stained by placing a thin drop of the stain directly upon it and inverting it to make a hanging drop preparation. This is then examined by artificial light, the blue of the fluid tending to neutralize the yellow rays. The diphtheria bacilli stain a light blue with red granules, and are refractive. It is possible to differentiate them from pseudodiphtheria bacilli at once. The stain also gives good differential results when the bacilli and spirochetes of Vincent's angina are being sought.

9. Ultraviolet Light in Alopecia.—Harris gives half hour exposures of the bald areas to the ultraviolet rays, protecting the area with small blocks of ice. He has treated nine patients with excellent results in all but two. In one of these the treatment failed, in the other it was discontinued after the hair had begun to grow. The treatment is stopped in a given area and transferred to another when the skin becomes painfully hyperemic. The duration of the treatment varied from three weeks to thirteen months.

JOURNAL DE MÉDECINE DE PARIS.

June 29, 1912.

1. LEGRY: Icterus by Retention.
2. BRINDEAU: Tuberculosis Complicating Pregnancy.
3. TROLLER: Treatment of Syphilis by 600.
- July 6, 1912.
4. VIATOR: Exotic Gastronomy.
5. LEON POULIOT: Metrorrhagia of Pseudouterine Origin.
6. SMIESTER: Umbilical Hernia of Newborn.
7. PIERRESON: Death during Epileptic Fit.

3. Salvarsan.—Troller regrets the publicity given to this agent by the lay press, which has greatly misled patients, and begs his readers to explain to the latter that it is merely an energetic succedaneum to mercury and does not shorten the length of treatment in the least.

5. Pseudouterine Metrorrhagia.—Pouliot points out that hemorrhage from the genital organs is not always due to uterine disease. Occasionally there is noted an excessive menstrual flow just after the establishment of puberty. There is also a menorrhagic chlorosis accompanied by hemorrhage. Other conditions which produce it are lithemia, mitral stenosis, hypothyroidism, partial myxedema, and even dyspepsia. Any liver disease may be accompanied by genital hemorrhage. Arteriosclerosis in women at the climacteric may cause hemorrhage of an alarming nature, leading to the fear of malignant disease. Tonics for the general health and astringents locally are indicated in most of these cases, but any general systemic condition should be met by the proper medication.

PARIS MÉDICAL.

July 6, 1912.

1. LÈREBOULET: Diseases of the Blood.
2. GILBERT, CHARROL, and BERNARD: Selenic Hemolysis.
3. WEILL and GARDERE: Viscosity of Blood in Child.
4. VASSART: Arteria Pectoris and Cardiac Dilatation.
5. LAUBRY: Erythremia or Vaquez's Disease.
6. AYNARD: Ultramicroscopy of Blood.
7. SCHWARTZ: Transfusion, Technique and Indications.
8. RIEUX: Therapeutics of Leuchemia.

8. Treatment of Leuchemia.—Rieux avers that there is no specific treatment for this condition and the only possible medication is symptomatic, the best means being to diminish by x rays the ab-

normal activity of the glands producing white corpuscles, and to exhibit tonics for the general run down condition. Iron and arsenic are useful. The x ray process is tedious and to produce the best results should be begun early.

PRESSE MÉDICALE.

July 3, 1912.

1. SERGENT: Syphilitic Mediastinitis in Relation to Aortic Aneurysm.

July 6, 1912.

2. NICLOUX and FOURQUIER: Chloroform Anesthesia.

2. **Chloroform Anesthesia.**—Nicloux and Fourquier, after extensive experimentation on animals, have decided that postanesthetic accidents from chloroform are due to profound diminution in the alkalinity of the blood and rapid subtraction of its mineral constituents. Administration of sodium bicarbonate gave negative results, but the authors think they are on the right track.

SEMAINE MÉDICALE

July 3, 1912.

1. CHEINISSE: Diet in Chronic Nephritis.

July 10, 1912.

2. FARNARIER: Nascent Iodine Vapor in Cystitis.

1. **Diet in Chronic Nephritis.**—Cheinisse says that if we except renal opotherapy we have no direct remedies in this disease, the medicine administered being directed rather toward the complications. Hence the importance attributed to diet. Dechloridization has been proved to be a correct principle, although when prolonged it alters the gastric secretion. Some are disposed to doubt the advisability of permitting the white meats to the exclusion of the red, but they still seem to be less harmful. Shellfish, even fish in general, sweetbread, kidneys, brain, cabbage, asparagus, game, horseradish, cress, spinach, sorrel, mushrooms, spices, parsley, fennel, brandy, red wine, are best forbidden. The amount of liquid taken should be small, especially if there is cardiac dilatation.

2. **Nascent Iodine Vapor in Cystitis.**—Farnarier has had excellent results in cystitides which resisted all other treatment by means of this vapor which is introduced into the bladder by an apparatus specially constructed.

CENTRALBLATT FÜR ALLGEMEINE PATHOLOGIE UND PATHOLOGISCHE ANATOMIE.

June 15, 1912.

1. H. POINDECKER: Heterotopic Gastric Mucosa in Small Intestine.
2. J. W. MILLER: Answer to Ribbert's Comments on the Histology of the Kidney in Hemoglobinuria.

June 30, 1912.

3. R. BENEKE and E. STEINSCHEIDER: Anaphylactic Action of Poisons.
4. F. M. HANES: Presence and Significance of Anisotropic Lipoids in Liver of Chicken Embryos.

1. **Gastric Mucosa Present in a Polyp of the Small Intestine.**—Poindecker's case is one of a polyp of the small intestine, removed by an operation. The microscopical examination showed it to be a benign, glandular polyp of the mucous membrane, possessing a glandular structure similar to that of the gastric mucosa. The method of origin is discussed, particularly in reference to Schridde's theory of heteroplasia.

3. **Anaphylactic Action of Poisons.**—Beneke and Steinschneider found that a few hours after injecting snake poison, there was a general waxy change in the muscles. This was most marked in the neighborhood of the site of injection, but as a

result of the presence of the poison in the blood there was a widespread muscular involvement. The examination of a large number of bodies of guinea-pigs that had died in anaphylactic shock showed also a more or less severe alteration in the striated muscle. The same conditions were present in cases of icterus neonatorum. The primary injection of poisonous sera, pepton solution, etc., immediately causes severe changes in the muscle. A reinjection for the anaphylactic reaction attacks the already injured tissue and produces, on that account, a particularly well marked general toxic effect.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT.

May 23, 1912.

1. K. HEILBRONNER: Early Symptoms of Organic Diseases of Kidneys (To be concluded).
2. W. A. FREUND: Treatment of Carcinoma.
3. A. STÜHMER: Clinical Experiences with Neosalvarsan.
4. MARTIN GOLDSTEIN: Luminal, New Hypnotic.
5. ALEXANDER STROUBELL: Clinic of Electroshock.
6. DETERMANN and BRÖKING: Does Absorption of Iodide Influence Viscosity of Blood?
7. J. TSUZUKI: Treatment of Beriberi with Antiberiberin.
8. CARL JACOBS: Pulsating Diverticulum of Esophagus.
9. FR. VON FILLINGER: Further Information on Diminution of Resistance of Erythrocytes after Alcohol.
10. BERGER and M. SCHWAB: Bloodvessel Surgery.
11. FRIEDRICH DESSAUER and HERGENHAIN: Technique of Taking of Distant Roentgenograms.
12. B. LAQUER: Sja Hygiene in Engadin.
13. W. FEILCHENFELD: Medical Ethics.

May 30, 1912.

14. A. ALSU: Distinctive Diagnosis of Abdominal Cramps and Their Treatment.
15. K. HEILBRONNER: Early Symptoms of Organic Diseases of Kidneys (Concluded).
16. E. TOMARKIN and S. PESCHIC: Distinction between Human and Bovine Types of Tubercle Bacillus through Cutaneous Injections in Guinea-pigs.
17. A. BITTORF: Fatty Faeces in Basedow's Disease.
18. CURT MOEWES: Quantitative Determination of Albumin in Urine and Its Practical Use.
19. A. T. JURASE: Death after Intravenous Hormonal Injection.
20. REINHOLD LEDERMANN: Syphilis as Cause of Diseases of Heart and Vessels.
21. BERNHEIM: Experience with Neosalvarsan.
22. GUSTAV STUMPFKE: A Case of Syphilitic Reinfection after Salvarsan.
23. ORLOWSKI: The Practical Value of Acid Urine Titration.
24. M. VON LENHOSSEK: Etiology and Prophylaxis of Hemorrhoids.
25. PAUL HERZ: Surgery of the Cerebral Meninges of the Brain.
26. W. MERKENS: Tearing of the Urethra through Blunt Power from the Rectum.
27. M. CLAUDIUS: Iodide Chronic Catarrh.
28. A. DUTOIT: Tuberculosis of the Optic Nerve and the Retina.
29. J. SCHWALBE: Against Patent Medicines.
30. G. MAMLOCK: With Napoleon in Russia.

3 and 21. **Clinical Experiences with Neosalvarsan.**—Stühmer's experience with neosalvarsan is similar to that of other authors reported in these pages. The effect of the remedy is increased in animal experiments and at least equal to that of old salvarsan in man; resorption seems to be much quicker; an intramuscular injection produces a good deal less inflammation.—Bernheim gives a preliminary report on his experience with neosalvarsan. He does not approve of Schreiber's method, which requires four injections, one to be given every other day; he thinks the intervals between injections should be of longer duration.

4. **Luminal, a New Hypnotic.**—Goldstein remarks that luminal does not seem to possess a sedative action, but he thinks that it will be of clinical use in patients suffering from excitement, fear, and hallucination disturbances.

6. **Does Absorption of Iodide Influence the Viscosity of Blood?**—Deternmann and Bröking have made experiments to determine whether iodine preparations possess an influence upon the viscosity of the blood. Their results have been negative.

7. **Treatment of Beriberi with Antiberiberin.**—Tsuzuki remarks that antiberiberin therapeutics

has shown its value in the treatment of beriberi in Japan. It possesses a preventive and curative effect upon beriberi in man and polyneuritis in animals. As to the preparation of antiberiberin he states: "The basis of the preparation is the original solution of antiberiberin which is produced by a patented method from the alcoholic extract of rice bran. It is black in appearance, has an acid reaction, and is hard to dry; soluble in absolute alcohol and in water." The chemical qualities have not been discovered. He says that there does not exist a maximum dose. Antiberiberin is put up in the following way: 1. Solution for injection, contains in one c. c. 0.1 gramme antiberiberin original solution; 2, one gramme of powder contains 0.025 gramme; 3, one pill of 0.16 gramme contains 0.05 gramme; 4, one capsule of 0.6 gramme contains 0.05 gramme; 5, one gramme of nuka extract (rice bran) contains 0.2; and, 6, one gramme of rice bran powder contains 0.005 gramme. The daily treatment consists of one injection; six to ten antiberiberin powders; thirty to forty-five antiberiberin pills; three to five antiberiberin capsules; one to two grammes nuka extract, and eight to twenty-five grammes rice bran powder. Sixty-two beriberi patients have been treated under this schedule, of whom forty-two recovered entirely and in twenty such sequelæ remained as paresis, etc., which were finally overcome. The average treatment lasted twenty-three days, while the sequelæ were cured after forty-five days. Of seventeen patients treated with antiberiberin, thirteen were improved and four cured, while of twelve control patients, not treated with antiberiberin, two died, two remained stationary, and eight were improved. Tsuzuki concludes that beriberi is found in rice eating people; men are oftener attacked than women and more young people than adults. East Asiatics are oftener attacked than Europeans. The condition of life plays a great rôle; hard working people, or people living in poor circumstances, furthermore, debilitated people, are often attacked. Polyneuritis is produced through feeding with polished rice. Cocks are more easily attacked than hens, and chickens under one year of age are oftenest subject to the disease. A certain kind of chickens, for example, egg producers, are more easily attacked than another kind, for example, broilers. Chickens living in a cage become more easily victims than chickens which have plenty of space in which to roam about.

16. Distinction between Human and Bovine Types of the Tubercle Bacillus through Cutaneous Injections in Guinea-pigs.—Tomarkin and Peschic reports their results as follows: Of fifty-two guinea-pigs vaccinated with the human type bacilli, seven became tuberculous, while of twenty-six vaccinated with the bovine type all became tuberculous.

19. Death after Intravenous Hormonal Injection.—Jurasz reports a death after intravenous injection of hormonal, and remarks that the use of hormonal is contraindicated in patients whose hearts are affected.

22. A Case of Syphilitic Reinfection after Salvarsan.—Stimpke cites a case of syphilitic infection six months after successful treatment with salvarsan.

ROUSSKY VRATCH.

April 7, 1912.

1. V. M. BECHTEREV: Application of Associated Motor Reflexes in Investigation of Feigning.
2. A. I. IAROSKY: Necessity of Supplying the Oculars of Microscopes with Threads.
3. PH. A. SUDAN: Influence of Extract of Ovaries and Corpora Lutea on Mammary Glands.
4. M. D. TUSHINSKY and G. A. IVASHENTZOFF: Wassermann Reaction in Hospital Practice.
5. K. S. KARAKOS: Primary Carcinoma of Fallopian Tubes.
6. K. G. PIVOVAROFF: Cyst and Necrosis of Pancreas.
7. E. F. VASHKIVITCH: Treatment of Chronic Pyelitis by Irrigation.
8. K. N. USTIMOVITCH: Favorable Effect of Injection of Thiosinamin in One Case of Sarcoma.

3. Ovarian Extract and Mammary Glands.—Solovjev presents a preliminary report on the effect of ovarian extract on the mammary glands of guinea-pigs, and gives the following conclusions: 1. Ovarian extract is toxic to pregnant and nursing guinea-pigs, but has no effect on others. 2. Extracts of corpora lutea have no effect on either pregnant or nonpregnant pigs. 3. Subcutaneous injection of ovarian extract causes secretion of colostrum in females that have borne young once or oftener. In nullipara the mammary glands become enlarged. 4. Injection of the extract of the corpora lutea has no such effect. 5. Injection of ovarian extract and the extract of corpora lutea into nursing animals, and animals that have ceased to nurse, does not produce any increase in the secretion of milk, nor does it prolong the period of lactation.

5. Carcinoma of Tubes.—Karakos reports a case of carcinoma of the left Fallopian tube in a biparous woman, fifty-five years old, whose only complaint was inability to void urine, the difficulty appearing three days before admission to the hospital. Examination revealed a large mass on the left side, and a diagnosis of fibromyoma was established. Operation revealed the mass in the left Fallopian tube, which measured forty cm. Histological examination of the mass showed it to be a primary carcinoma. None of the other viscera were involved. The woman recovered from the operation, but disappeared from further observation.

6. Cyst of Pancreas.—Pivovarov reports a case in a girl, nineteen years of age, who presented the following symptoms: Pain in epigastrium, occurring in paroxysms, eructations, burning and vomiting in the morning, and constipation. After eating, the pain was increased, reaching maximum intensity in twenty to thirty minutes and subsiding in one to 1.5 hour. Pain was relieved somewhat by lying on the left side. The feces contained globules of fat, the Cammidge test was negative (positive once, before operation), and the Calmette and Pirquet positive. Percussion and palpation revealed a painful mass on the left side, apparently behind the stomach. On operation, a cyst containing some 700 c. c. of fluid with necrosis of the surrounding pancreatic tissue was found and removed. The patient made an uneventful recovery.

7. Pyelitis.—Vashkevitch reports two cases of chronic pyelitis successfully treated by direct irrigation of the renal pelvis with solutions of nitrate of silver (one to 200) and oxycyanide of mercury (one to 2,000). The irrigations were made every other day.

8. Thiosinamin in Sarcoma.—Ustimovitch reports a case of sarcoma of the right cervical glands

in a man twenty-six years old, successfully treated with thiosinamin (thiosinamin 2.0, water 10.0, and glycerin 8.0), beginning with half a syringeful. The amount was increased by one or two divisions of the syringe, until the fifth month, when the tumor disappeared. The injections were made twice a week.

AMERICAN JOURNAL OF DISEASES OF CHILDREN

June, 1912

1. O. M. SCHLOSS: Allergy to Common Foods
2. F. S. CHURCHILL: Wassermann Reaction in Infants and Children.
3. F. B. TALBOT: Acute Duodenal Indigestion in Children.
4. M. JAKPOLIS: Progress in Pediatrics; Infectious Diseases.

1. A Case of Allergy to Common Foods.—

Schloss presents an interesting case. A child, eight years old, shows marked hypersusceptibility to eggs, almonds, and oats. During an illness, which occurred when he was ten days' old, the child took egg white without causing any symptoms. At fourteen months, when he next received egg white, there was marked intolerance. Oatmeal was first given when he was twenty-two months old, the first time without causing symptoms, but after this always bringing on an attack of hives. A marked cutaneous reaction was obtained for all of these substances. By chemical separation of the various proteins in egg white it was shown that the toxic action was due to ovomucoid. Ovovitellin did not give a cutaneous reaction. Various experiments with almonds indicated that the active substance belonged to, or were intimately connected with proteins. From the experiments with oatmeal it seemed probable that the cutaneous reaction was dependent upon some definite grouping of the protein molecule. It was possible to show that the patient's blood serum was capable of sensitizing guineapigs to ovomucoid. Treatment consisted of ovomucoid in capsules. At first the dose was two milligrammes. This dose was at first gradually increased and then rapidly increased. The administration of ovomucoid by mouth completely immunized the patient to egg. At the same time the patient became entirely immune to oatmeal and less sensitive to almonds.

2. Wassermann Reaction in Infants and Children.—Churchill has too small a series from which to draw general conclusions. His series consists of 101 cases. None of these cases entered the hospital as a case of syphilis. Thirty-eight per cent. of this series of cases gave positive results. Deducting ten cases as possibly doubtful we have left twenty-eight per cent. as surely syphilitic. These observations tend to show that there is a large amount of congenital syphilis among hospital patients. A positive reaction was obtained in a great variety of conditions. A striking phenomenon in this series of cases is the absence of physical signs of syphilis, fourteen out of thirty-seven cases being entirely without symptoms.

AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

June, 1912.

1. J. C. POLAK: Operative Findings at Secondary Operation.
2. LIDA J. STACY: Carcinoma of the Uterus.
3. J. A. MCGLENN: Surgical Treatment of Retrodisplacement of Uterus.
4. P. TITUS: Abortions Occurring in Obstetrical Department of Johns Hopkins Hospital.
5. W. M. BROWN: Toxemia of Pregnancy.
6. A. G. BIDDLE: New Method for Measuring Pelvic Outlet.
7. C. C. NORRIS: Complete Laceration of Pelvic Floor.

8. E. A. SCHUMANN: Advisability of Removing Uterus in Cases in Which Both Tubes and Ovaries Have Been Excised.
9. J. C. HIRST: Operative Treatment of Puerperal Sepsis.
10. S. E. TRACY: Prolapse of Uterus.
11. H. M. KEATOR: Transfusion in Case of Toxemia of Early Pregnancy with Unusual Hemorrhagic Manifestations.
12. C. G. CUMSTON: Obstetrical Science of Maitre Francois Rabelais.
13. S. J. BAKER: Value of Municipal Control of Child Hygiene.
14. C. W. CRAWFORD: Significance to Physician of Physiological Age.
15. W. H. JORDAN: Tetanus Neonatorum.

2. Notes on Carcinoma of the Uterus.—

Stacy, from a study of 263 cases of cancer of the uterus, comes to the following conclusions: 1. Cancer in its early stage is removable and hence curable. 2. Cancer of the uterus usually gives symptoms in that early, operable stage. 3. Most of the deaths from cancer are due to delay, either on the part of the patient or of the physician first consulted, and are, therefore, unnecessary. 4. The laity should be made to realize that any irregular flow, a constant bloody discharge, or a watery discharge is not due to "change of life," but, in practically all cases, means malignancy. 5. The laity must be taught that cancer is curable if operated on early, i. e., while still a local disease. 6. Physicians should make an early and careful examination and give the proper advice without delay.

4. Statistical Study of Abortions.—

Titus gives an analysis of 274 abortions occurring in the Johns Hopkins Hospital. Some of his conclusions are: 1. Abortions occur in about 5.76 per cent. of obstetrical cases in a hospital service. 2. In such a service, incomplete abortions constitute 59.12 per cent., criminal abortions fifteen per cent., complete abortions 12.7 per cent., therapeutic abortions 7.3 per cent., "inevitable" abortions four per cent., and missed abortions 1.8 per cent. 3. The incidence of infections in criminal abortions will be about seventy-eight per cent. 4. The mortality following abortions is considerably higher than that following labors at term, the higher average being almost wholly due to the frequency with which criminal procedures are employed for inducing abortion. 5. The mortality is due chiefly to infection by streptococci. 6. Abortions are about twice as frequent and criminal abortions are nearly five times as common among whites as among blacks. 7. More than one third of all criminal abortions are among married women.

13. Municipal Control of Child Hygiene.—

Baker lays stress upon the responsibility of the State for the welfare of the child and shows what can be accomplished. In New York city, in 1911, there was a saving of the lives of 1,183 infants, or a financial saving estimated at \$118,300. Since 1908 there have been examined physically 727,750 children, and of this number forty per cent. were found to have one or more associated physical defects, with or without the most common defect that is found, namely, defective teeth. Thirty-five per cent. of the remainder of the children were found to have defective teeth as the only physical defect. Along all lines there has been a distinct improvement. Much has also been done in the supervising and licensing of the midwives, especially in relation to reporting and treating cases of ophthalmia neonatorum. During the past five years cases of blindness from the disease have become very few. During the past year a total of twelve cases in the entire State was all that the committee found.

14. Significance of Physiological Age.—Crampton presents the importance of appreciating the differences that may be present between the physiological and the chronological age. He cites the following that was adopted by the National Education Association in July, 1911: The laws should recognize the difference between the chronological age of a child and his maturity, and the school age limit of each individual child should be determined by requiring the child to meet physical and mental tests, even though the child be in years above the age standard; in other words, a child's actual age should be determined by physiological data corresponding to the normal standard for the age limits required by law. All children or persons failing to meet such maturity tests at the extreme school age limit should remain under public supervision and control, either until they reach maturity or permanently. The same principle should be the guide in determining whether a child is fit to be employed in any occupation. Not when a child is fourteen or sixteen years of age, but when he possesses the maturity of body and mind proper to a normal child of that age, should he be released from the guardianship of the State or of the community. Child labor laws should be so modified as to meet this requirement.

ANNALS OF OTOTOLOGY, RHINOLOGY, AND LARYNGOLOGY.

March, 1912.

1. HANAU W. LOEB: Cubical Capacity and Superficial Area of Sphenoid Sinus.
2. R. HARKNY (Translation by Irving Wilson Voorhees): Testing Vestibular Apparatus.
3. GEORGE FETTEROLF: Relief of Pain in Advanced Tuberculosis of Larynx by Means of Injections of Alcohol into Internal Laryngeal Nerve.
4. E. G. SPIERT: Superior Maxilla; Discussion of Its Proper Development.
5. JOHN RANDOLPH PAGE: Virulent and Rapid Infection of Middle Ear and Mastoid Followed by Evanescent Cellulitis of Neck and Streptococemia.
6. GREENFIELD SLUDER: Vacuum Nasal Headaches with Ocular Symptoms Only.
7. ALFRED BRAUN: Deep Temporal Abscess.
8. L. W. SROWE: Streptococcus Infection and Immunity.
9. JOSEPH C. BECK: Experiments with Autolytic Solutions in Treatment of Inoperable Cancer of Throat, Neck, and Face.
10. JOSEPH C. BECK: Pathology and Treatment of Otosclerosis.
11. JOSEPH C. BECK: Etiology, Pathology, and Treatment of Atraphic Rhinitis.

3. Injections of Alcohol in Advanced Tuberculosis of the Larynx.—Fetterolf injected alcohol into the internal laryngeal nerve in fifteen cases of tuberculosis of the larynx to relieve the pain, and believes the procedure is not hazardous nor markedly painful, and that it can be repeated as often as necessary, though success usually results from the first or second injection. Since the introduction of alcoholic injection of painful nerves, the results tend to indicate that where the nerve is properly injected, immediate relief is secured in over ninety per cent. of the cases, thereby permitting a greater amount of rest, and, in tuberculous laryngitis, rendering deglutition easier. The technique consists in locating the nerve by the presence of a tender spot in the lateral region of the thyrohyoid space. The larynx is steadied with the thumb and the fingers of the left hand, and the needle is introduced at a right angle with the surface through the skin, when it will enter what appears to be a small cavity. It is then gradually pushed to a greater depth and moved around in an effort to elicit a pain in the ear, which is supposed to result from the point of the needle in contact with the nerve. This sign, however, was not obtained by the author in very

many of his cases. In its absence, the point of the needle was inserted to a depth of less than one cm. and one or two drops of a seventy-five per cent. solution of ethyl alcohol with sufficient cocaine hydrochloride added to make a one per cent. solution, were injected. If no cough resulted, which eliminated the possibility of the needle having penetrated the mucosa of the larynx, a few more drops were forced out to overcome the burning sensation usually produced. In a few moments, the remainder of the solution, which originally amounted to twenty or twenty-five minims, was injected. In case subsequent injections were necessary, similar amounts were used.

6. Vacuum Nasal Headaches with Ocular Symptoms Only.—Sluder attempts to classify from a rhinological standpoint the origin of this type of cases, and describes a class in which the frontal sinus is almost always closed, but otherwise normal. There is no pus in the nose, no severe pain as in suppurating conditions, and no blindness nor changes within the globe. The eye disturbance is usually of no more serious nature than asthenopia. He believes that the symptoms manifested are due to the absorption of the oxygen of the air inclosed within the sinus, thereby producing negative pressure, a partial vacuum, and a subsequent congestion of the mucous membrane, resulting in a sensitiveness to external pressure. He further believes that tenderness in the upper inner angle of the orbit is conclusive proof of the closure of the frontal sinus, and states that this subjective symptom is almost constantly present when the outlet is obstructed.

ANNALS OF SURGERY.

June 11, 1912.

1. W. C. LUSK: Thoracic Aneurysm Treated with Gold Wire and Galvanism.
2. W. C. MACCARTY: Involvement of Regional Lymphatic Glands in Carcinoma of the Stomach.
3. A. V. MOSCHOWITZ: Prevascular Hernia.
4. C. F. NASSAU: Observations on Radical Cure of Hernia.
5. H. MORISON DWYER: Value of Arteriovenous Anastomosis in Gangrene of the Lower Limbs.

1. Thoracic Aneurysm.—Lusk having learned the Moore-Corradi operation from Dr. Charles L. Gibson, he began practising on dogs, having operated upon 151 for aneurysms in various localities in the thorax, all operations being performed under ether anesthesia. The plan was to bring as much of the introduced wire as possible into contact with the wall of the sac and by means of the current both injure the area where the wire touched and produce a fibrinous clot along the wire, which at the sites of trauma would form an adhesion with the artery during the electrical séance. The author's findings point to the need of a good deposit of adherent, fibrinous clot resulting from electrolysis as well as of laminated fibrin, over as large an area as possible of the aneurysmal wall. To attain this object, it seemed necessary that the wire be placed pretty extensively in contact with the intima, so that the electric current could traumatize the latter in lines of rather close association. The wire should be gold platinum "clasp" alloy.

2. The Regional Lymphatic Glands in Carcinoma of Stomach.—MacCarty found out of 200 specimens examined containing 1,404 lymphatic glands fifty-two per cent. were carcinomatous; 216 specimens of the stomach were examined, simple

ulcers, ulcers associated with carcinoma, and carcinoma so advanced that its development upon ulcer could not be determined. In a study of the material it was seen that an initial erosion or partial destruction of the gastric mucosa occurred as the apparent forerunner of the extensive ulceration. Why and how the initial disturbance occurred was undetermined. The process of destruction after the initial lesion had occurred was, however, apparent in many of its phases. Why all gastric ulcers do not heal spontaneously remains unanswered. The chronicity of these lesions was shown from the fact that changes, such as the presence of dense scar tissue, lymphatic infiltration, epithelial hyperplasia, and glandular distortion occurred in practically all ulcers seen in this series. According to Cuneo, the lymphatic spaces between the gastric glands are intercommunicating, form large spaces in the submucosa, pass through the musculature, collect in the subserosa, and enter the lymphatic channels just under the peritoneum. The gastric intramural lymphatic system empties its contents into the extramural or regional lymphatic glands. The cells of carcinoma are found in the peripheral or subcapsular sinuses early in lymphatic involvement, according to Billroth, Bozzolo, Rindfleisch, Orth, Zender, Petrick, and Cuneo. They may be single or in groups.

3. **Prevascular Hernia.**—Moschowitz states that this is an exceedingly rare condition. Primarily it is important to recall that, like all great vessels of the abdomen, the iliac vessels lie upon the transversalis fascia and are covered by the peritoneum. It follows, therefore, that at that point where these vessels escape from the abdomen to the thigh, there must be an opening, or at least a weak spot.

5. **Arteriovenous Anastomosis in Gangrene of the Lower Limb.**—Davies asserts that gangrene is not a disease in itself, it is but a manifestation of some pathological change. Therefore, the treatment cannot be the same in all cases.

CLEVELAND MEDICAL JOURNAL

June, 1912.

1. W. E. LAFFER: Paget's Osteitis Deformans.
2. M. STAMM: Gustave C. E. Weber as I Knew Him.
3. D. A. PRENDERGAST: Nasal Headaches.
4. T. DILLER: Menace to Public of Feeble Minded Persons Living outside Institutions.
5. F. E. MERA and J. J. BISKIND: Pulmonary Hemorrhage and Its Relation to Great Altitude.
6. H. H. DRYSDALE: Apparently Successful Psychoanalysis.

3. **Nasal Headaches.**—Prendergast remarks that an abnormal condition of the nose will produce marked symptoms in one patient and a similar condition will cause little discomfort in another. The results in the study of nasal headaches are from clinical observation alone, and this in itself is enough to make them questionable. For, all too often the therapeutic agent in use at the time the symptom disappears is regarded as the curative factor of the condition. Pressure is often a cause of nasal headache, as well illustrated in the cases in which packing is used after submucous resection of the septum. Removal of the packing gives prompt relief to the condition. Pressure in MacKenzie's reflex area of the nose may cause some degree of asthenopia. A blow upon the nose is often the point from which many headaches are dated. There is not infrequently an obstruction situated so high

up in the nose as to permit of free nasal breathing and yet be the cause of headache. In another group there is not enough space in the nasal cavities to allow for the physiological turgescence, though in its absence the nose may be thought normal. Sinus disease and nasal neoplasms are also frequent causes of headaches. Adenoids and hypertrophy of the posterior ends of the turbinates form the last class of causes of nasal headaches.

6. **Psychoanalysis.**—Drysdale reports the result of a modified Freud's psychoanalysis which gave what seems to have been a strikingly good outcome. Just as soon as the patient brought into conscious memory the one fundamental repressed experience, all of her symptoms vanished in a moment. The case is the more striking on account of the extreme severity of the original symptoms.

INTERNATIONAL JOURNAL OF SURGERY

June, 1912.

1. KOENIG: Implantation of Ivory as Substitute for Bone.
2. SUSSENGUT: Nail Extension in Treatment of Fractures.
3. LANGE: Surgical Treatment of Poliomyelitis.
4. J. E. FULLE: Hints on Fractures.
5. WEGNER: Fracture of Internal Malleolus.
6. A. W. BEAUN: Cane Problem of To-day.
7. J. B. BISSELL: Conservation in Surgery.

1. **Implantation of Ivory as a Substitute for Bone.**—Koenig prefers ivory over living or dead bone for transplantation. He describes a case of a woman, sixty-nine years of age, in whom, a year ago, he had resected almost the entire left half of the lower jaw for a cystic tumor. A splint of ivory was employed to cover the defect, one end being inserted into the medullary cavity of the remaining half of the maxilla, and the other into the glenoid cavity, and the soft parts were accurately sutured. Complete union took place with excellent functional results, the patient being able to open her mouth widely. No fistula or irritation developed. Koenig has repeated this operation on several occasions with excellent results.

2. **Nail Extension in Treatment of Fractures.**—Sussengut obtained ideal results from this method in sixteen out of eighteen cases, especially as regards avoidance of shortening and lateral displacement. In view of the possibility of resorting to massage and passive movement under this treatment, the functional results were very satisfactory. The chief disadvantages are pain, risk of infection, and irritation about the place of insertion of the nails. This method is not intended to replace the customary ones, but to be employed in appropriate cases, such as complicated fractures with extensive injuries of the soft parts. He says it should be practised only in hospitals.

3. **Surgical Treatment of Poliomyelitis.**—Lange advises the application of a plaster of Paris splint or bandage during the first stage, which is often followed by subsidence of pain. To promote regeneration of the paralyzed muscles, electricity and massage, as well as heat, were found useful, while for the prevention of contractures Lange prefers a light celluloid gauze splint. If contractures have resulted they are removed by tenotomy and redressment. Later, tendon transplantation is usually necessary, but nerve transplantation is not indicated in this disease. In general, tendon transplantation is not to be undertaken before the fourth year. If possible, the entire muscle is transplanted, the periosteal method being most advantageous be-

cause securing better fixation. Early resort to movements is important, except in cases where fixation is necessary.

4. **Hints on Fractures.**—Fuld says it is necessary to watch fractures of the ribs carefully for a couple of days to note the onset of pulmonary complications. Localized pneumonitis sometimes occurs. In strapping the chest for fractured ribs, the straps should pass well beyond the median line. They should be applied during full expiration. One or two straps passed over the shoulder help much to secure immobilization. A hematoma of the scalp may simulate a depressed fracture of the skull. If the finger is firmly pressed upon the centre of the swelling the smooth, hard skull can be felt, while in fracture the centre is soft. Systematic examination of the whole body should be made in every accident case. Thus he has seen a Colles's fracture which had been treated for three weeks as something else. Fractures of metatarsal bones may be caused by slight injuries. Thus the base of the fifth metatarsal may be fractured by a twist of the foot while walking or dancing. The value of the x ray as a means of diagnosis cannot be overestimated. It is surprising how much information can be obtained from a skiagraph, but it must be remembered that the bones are shown only as shadows which are subject to distortions.

JOURNAL OF BIOLOGICAL CHEMISTRY.

June, 1912.

1. ISRAEL S. KLEINER: Physiological Action of Some Pyrimidine Compounds of Barbituric Acid Series.
2. R. J. ANDERSON: Phytin and Phosphoric Acid Esters of Inositol.
3. FREDERIC FENGER: Presence of Active Principles in Thyroid and Suprarenal Glands before and after Birth.
4. OTTO FOLIN and CHESTER J. FARMER: New Method for Determination of Total Nitrogen in Urine.
5. OTTO FOLIN and W. DENIS: Apparatus for Absorption of Fumes.
6. OTTO FOLIN: Determination of Urea in Urine.
7. OTTO FOLIN and A. B. MACALLUM: Determination of Ammonia in Urine.
8. OTTO FOLIN and W. DENIS: New Methods for Determination of Total Nonprotein Nitrogen, Urea, and Ammonia in Blood.
9. ANDREW HUNTER: Urocanic Acid.
10. P. A. LEVENE and W. A. JACOBS: Sphingosine.

3. **Active Principles in Thyroid and Suprarenal Glands before Birth.**—Fenger, thinking it unlikely that either the thyroid, as had been stated, or the suprarenals should be free from their active principles up to the time of birth, in view of the fact that the secretions of these glands govern the growth of the young animal, conducted experiments bearing on this question in beef, hog, and sheep. In the thyroids iodine determinations were made according to Hunter's method, while the suprarenal active principle was determined colorimetrically by Hale and Seidell's iodic acid method. The results obtained showed that the thyroid of these animals contains iodine, not merely at birth, but long before. Since the amount of iodine in the thyroid is an indication of the relative activity of this gland there is evidently a gradual rise in the glandular activity in the fetus, and this activity is rapidly increased shortly after birth, reaching its maximum in the young growing animal. The active principle of the suprarenals was also found in the fetus long before maturity, and in comparatively higher quantities than in the full grown animal.

4. **Determination of Total Nitrogen in Urine.**—Folin and Farmer describe a new, rapid method of attaining this result which is much more suitable

for ordinary clinical work than the old Kjeldahl procedure. Five c. c. of urine are measured into a fifty c. c. measuring flask if the specific gravity of the urine is over 1.018 or into a twenty-five c. c. flask if it is less. The flask is filled to the mark with water, inverted a few times, and one c. c. of the diluted urine then measured into a large test tube. To it are added one c. c. of concentrated sulphuric acid, one gramme of potassium sulphate, one drop of five per cent. copper sulphate solution, and a small, clean quartz pebble. The mixture is boiled over a microburner for about six minutes, allowed to cool about three minutes until viscosity appears, and about six c. c. of water gradually added to keep the mixture from solidifying. To this acid solution is then added an excess of sodium hydrate (three c. c. of saturated solution), and the ammonia aspirated by means of a rapid air current into a 100 c. c. measuring flask containing about twenty c. c. of water and two c. c. of decinormal hydrochloric acid. The contents of this flask are then diluted to about sixty c. c., one milligramme of nitrogen in the form of ammonium sulphate diluted to about the same volume in a second flask, and both solutions then Nesslerized with five c. c. of Nessler's reagent previously diluted with twenty-five c. c. of water. The two flasks are then at once filled to the mark with distilled water, shaken, and the relative intensity of the colors is determined by means of a colorimeter.

JOURNAL OF CUTANEOUS DISEASES.

June, 1912.

1. DOUGLASS W. MONTGOMERY and GEORGE D. CULVER: Influence of Milk Fat on Skin.
2. H. H. HAZEL: Comparison of Pemphigus Follicularis and Dermatitis Exfoliativa Neonatorum (Ritter); Etiology.
3. M. L. HEIDINGSFELD: Fibroma Cutis.
4. WILLIAM FRICK: Unusual Case of Dilated Capillaries.

1. **The Influence of Milk Fat on the Skin.**—Montgomery and Culver call attention to the old observation among the laity that butter will give rise to "pimples," but they do not consider cream and rich milk in the same light as butter, and for that matter they do not look upon ice cream as cream, even when made with cream. Clinically they have come to regard cream and rich milk as worse seborrheogens than butter. The probable reason is because milk is so digestible and assimilates so readily with the tissues, that the latter finding their food come so easily, have not the robust quality that renders them capable of fighting infection. They cite the experiments of Adami that a milk diet in animals renders the tissues less bactericidal and are of the opinion that the fat is the specially dangerous ingredient. They give the chemistry of the digestion of fat and state that no matter what digestive changes absorbed fat undergoes, the fat laid down in the tissues is almost identical with the fat ingested. They regard the entire free surface of the skin as an immense fat excreting gland with the sebaceous glands as pockets. The resistance of the skin being lowered the excreted fat is rapidly broken down under the attack of those organisms which under ordinary conditions are perfectly harmless. There is no doubt that the skin in carrying out its functions uses large quantities of fat, and the kind of fat is of great importance to its health; the quantity and quality of the fat ingested does not act directly as a poison, but low-

ers resistance and increases susceptibility to bacterial attack, rendering the patient liable to acne, seborrheal eczema, furuncle, carbuncle, and erysipelas.

JOURNAL OF EXPERIMENTAL MEDICINE

June, 1912.

1. G. N. STEWART: Alleged Existence of Adrenalin (Epinephrin) in Pathological Sera.
2. W. H. BROWN: Malarial Pigment (Hematin) as Factor in Production of Malarial Paroxysm.
3. J. BROKFENBRENNER and HIDEYO NOGUCHI: Biochemical Study of Phenomena Known as Complement Splitting. Splitting of the Complement Associated with Globulin Precipitation.
4. J. BROKFENBRENNER and HIDEYO NOGUCHI: Splitting of Complement without Visible Alteration of Protein Constituents.
5. DON R. JOSEPH: Quantitative Study of Effects of Adrenalin on Pupils of Rabbits after Removal of Superior Cervical Ganglion.

1. **The Existence of Adrenalin in Pathological Sera.**—Stewart, in a previous paper, concluded that no proof had hitherto been given that adrenalin is ever present in detectable amount in normal sera from the general circulation. In the present article he points out that the difficulty of detecting adrenalin in blood serum is greatly increased by the fact that serum itself exerts a marked influence on the biological objects which are probably the most sensitive to adrenalin, namely, the intestine and the uterus. Upon both of these tissues serum causes a great increase of tone. The results of his experiments with the sera from fourteen patients was as follows: Tested with segments of rabbit intestine and uterus, none of the pathological sera yielded evidence of the presence of adrenalin.

2. **Malarial Pigment in the Production of the Malarial Paroxysm.**—Brown noted that in a rabbit that had received an intravenous injection of alkaline hematin caused a very pronounced shivering chill, strikingly like that of malaria. As the author believed that the pigment elaborated by the malarial parasite and liberated into the blood was hematin, it seemed possible that this substance might be one of the hypothetical toxins operative in malaria. Experiments were carried out on seventeen rabbits, ox hematin, dog hematin, and rabbit hematin being used. The paroxysm of hematin intoxication in the rabbit undoubtedly presents many features of striking similarity to the paroxysm of human malaria. Alkaline hematin in doses commensurate with the amounts of hematin liberated in the human circulation by the segmentation of the malarial parasite, produces, when injected intravenously into the rabbit, a paroxysm which is characterized by a short prodromal stage, a stage of chill and rising temperature, and a hot stage. In their details the phases of this paroxysm are practically identical with the corresponding ones in the paroxysm of human malaria. It is also held that the phenomena in human beings infected with malaria are, at least in part, directly referable to the toxic action of this malarial pigment.

JOURNAL OF MEDICAL RESEARCH.

June, 1912.

1. J. L. TODD and S. B. WOLBACH: Parasitic Protozoa from Gambia.
2. S. T. DARLINGTON: Pathological Anatomy of Natural and Experimental Malaria—Trypanosomal Disease of Isthmus of Panama.
3. W. OPHÜLS and GEORGE W. MCCOY: Spontaneous Nephritis in Wild Rats.
4. WILLIAM C. WHITE and A. M. GAMMON: Relation of Animal Fat to Tubercle Bacillus Fat. (Suggested Explanation of Apical Lesions in Man and Caudal Lobe Lesions in Cattle.)
5. HORST OERTEL: Cyanotic Induration of Kidney.
6. B. WHITE and O. T. AVERY: Action of Certain Products Obtained from Tubercle Bacillus.

1. **Parasitic Protozoa from the Gambia.**—Todd and Wolbach give the results of the examination

of the blood of many animals, 401 mammals (362 being man), 108 birds, and twenty-eight reptiles. Of these there were altogether fifty species and 175 individuals, exclusive of man. The results on which the paper is based indicate that there is universal infection by protozoan parasites in tropical Africa.

4. **The Relation of Animal Fat to Tubercle Bacillus Fat.**—White and Gammon call attention to the fact that the storage of fat in bodies that are the seat of tuberculous infection is usually the basis of a favorable prognosis. This storage, too, is the main object in the treatment of the disease. In the experiments tubercle bacilli were grown in culture tubes containing various forms of fat. It was found that the growth of the human tubercle bacillus on each liver altered human fat agar tube was four or five hundred times more luxuriant than on the plain glycerin agar. Having determined that the tubercle bacillus is able to use various fats and their liver split products to its own advantage when grown on artificial media, it seemed possible to correlate this fact in explaining why the favorite site of growth of the tubercle bacillus in man is the highest point in the lung. The liver altered fat pours into the inferior vena cava and thence finds its way into the pulmonary artery and thence passes directly into the lung capillary system. Owing to the slowness of the current these fatty compounds have a chance to rise to the surface of the stream, so that the upper layer of blood in the pulmonary artery should have a much larger content of such compounds than the lower one. If one now follows the pulmonary blood stream in man, it is readily seen that at the highest point of this main stream arises the vessel that supplies the apex of the upper lobe on either side. If the theory advanced is correct, this vessel, owing to the upright position in man, should be the vessel most laden with the fatty compounds of low specific gravity which are being poured into the pulmonary stream by the liver mechanism; because these compounds, of necessity, rise rapidly to the highest level of the fluid bed in which they are travelling. This view, coupled with the results of the experimental work so far completed, which show that the tubercle bacillus makes use of these compounds for its more abundant growth, seems a most reasonable explanation of its more prevalent development in the apex of the upper lobe.

5. **The Cyanotic Induration of the Kidney.**—Oertel devotes some fifty pages to a complete review of the condition, taking up the subject under the following headings: 1. Introduction, anatomical findings, and views of older authors. 2. Modern anatomical observations and views. 3. Criticism of experimental evidence. 4. Anatomical evidence of new material. 5. Albuminuria. 6. Summary. 7. Addenda. In this form he finds that (a) focal or diffuse inflammatory cellular foci do not occur; (b) a new formation of connective tissue does not occur; (c) granular atrophy of the kidney does not occur. The larger bloodvessels show usually adventitial thickening and edema, also rather irregular endarterial thickening. The accompanying albuminuria depends upon an increased transudation of albuminous fluid through the glomeruli.

It does not appear that glomeruli devoid of their epithelium have lost their functioning capacity, but a somewhat more albuminous fluid transudes than under normal conditions, a state of affairs which argues against any specific secretory activity of the glomerular epithelium. The anatomical evidence presented, therefore, lends weight to the belief that the appearance of serum albumin in the urine during the course of chronic venous congestion, depends mainly upon the circulatory disturbances in the glomeruli, which become associated with certain nutritive changes in the endothelial cells and in the intercellular substance. These changes lead to increased permeability of the capillaries to serum albumin. The epithelium of the tuft seems not to be concerned in the process.

6. Certain Products Obtained from the Tubercle Bacillus.—White and Avery report results obtained by the use of cleavage products of tuberculo-protein procured by the method of Vaughan, who has succeeded in isolating from the cleavage of bacterial and other proteins two substances which possess interesting chemical and physiological properties. By the reactions they give both show that they still retain some of their original protein characteristics. By the effects they produce in the animal body it seems that they individually represent the sensitizing and intoxicating moieties originally combined in the whole protein molecule. In this communication the authors make use of the poisonous fraction alone. They found a tuberculo-protein which, in suitable doses, produces in normal guineapigs an intoxication resembling, if not identical with the specific immediate protein intoxication in hypersensitive guineapigs. The gross pathological findings appear to be similar in both conditions. It was also noted that repeated increasing doses of poison fail to render animals immune to a minimum fatal dose.

Proceedings of Societies.

AMERICAN THERAPEUTIC SOCIETY.

Thirteenth Annual Meeting, Held under the Auspices of McGill University, at Montreal, Canada, May 31 and June 1, 1912.

The President, Dr. ALEXANDER D. BLACKADER, in the Chair.

(Continued from page 151.)

Treatment of Hypertension by the High Frequency Current.—Dr. HOWARD VAN RENSSLAER, of Albany, N. Y., said that in medicine it was customary to use a current in which the cycles ran from 200,000 to 2,000,000 a second, and with the high voltage of 10,000 to 500,000 volts. Both frequencies and voltages much in excess of these limits might be passed freely through the body, but when given much higher than these they gradually lost their therapeutic properties. Just what were the most advantageous frequency and voltage for the effect on the human system had not as yet been scientifically demonstrated. In its passage through the body the high frequency current seemed to contract or modify the vibrations of individual cells everywhere in such a way that it stimulated abnormally vibrating cells, bringing them back to their

normal vibrations and thus restoring their health and function, as well as stimulating healthy cells to increased action. Its action was thus physiological, and the fundamental value of this form of electricity seemed to lie in its power of regulating and stimulating all nutritive processes. If the blood pressure of a person with hypertension was taken before the electrical treatment, and again directly afterward, it would be found to have fallen, and, in general, the higher the tension the greater the fall, provided that arteriosclerosis was not present. The first treatments might not keep the blood pressure down for twenty-four hours, but each succeeding day, if the electricity were given daily, the tension stayed lower for a longer time. Usually it stayed down longer than twenty-four hours within a fortnight, and after that the interval between the treatments might be gradually lengthened to once a week, or even once a fortnight. The action of the electricity appeared to be to modify and improve the underlying processes causing the high blood pressure. The speaker related a case illustrating the good effects of the high frequency current on a person in the earliest stage of Bright's disease, before renal symptoms had been demonstrated, and expressed the opinion that had this patient not taken the electrical treatment the action of intestinal toxins would, in a few months or a few years at the most, have produced a condition of hopeless chronic Bright's disease. From his study of this subject he offered the following premises: 1. The underlying cause of most cases of high blood pressure was metabolic, from faulty digestion of food. 2. The hypertension usually preceded renal, cardiac, and arteriosclerotic changes. His deductions were: That by proper treatment with high frequency currents, 1, the general condition was improved, and especially the metabolic processes, so that less toxins were formed and absorbed; 2, when, by the aid of the sphygmomanometer, hypertension was recognized early, we were able to cure the initial stages of the disease, because we removed the exciting cause; 3, that we could prevent the actual development of Bright's disease; 4, when renal or cardiac lesions were already present, that we could check the rapid advancement of the pathological processes and thus prolong life; 5, in the later stages of the disease, when compensation had broken and the heart had begun to fail, that by lowering the tension we lessened the resistance which the enfeebled heart was obliged to overcome, and so could alleviate some of the symptoms and make the patient more comfortable; 6, that by its effect in lowering arterial tension we protected the brittle bloodvessels from the liability to rupture, and thus could minimize the danger of apoplexy.

Sodium Nitrite in Arterial Hypertension.—Dr. WILLIAM H. PORTER, of New York, said that sodium nitrite should be classed among those remedies which acted indirectly, for it in no sense tended to remove directly the causes of hypertension in the vascular system. We knew exactly what could be accomplished with it, but the exact *modus operandi* by which it produced a dilatation of the overtense vessels was not so clear. It was probable, however, that in the presence of water and hydrochloric acid in the stomach, it was decomposed, and that

its decomposition products, nitric oxide and nitrogen dioxide, were disengaged in the form of vapors which were irritants and strong oxidizers. These ultimately produced an impression upon the centripetal nerve endings in the gastric mucosa, which impulse was carried to the vasomotor centre and by the centrifugal nerves conveyed from the centre of the vascular wall, thereby causing the expansion of the vessels. The slow decomposition of sodium nitrite, compared with amyl nitrite and nitroglycerin, rendered it far more valuable when a continuous effect was desired; and its continuous action had been demonstrated both experimentally and clinically. Undue vascular contraction was very much more damaging than overexpansion, and from a purely nutritive point of view there was the greater necessity for modifying hypertension; for, without an ample and well distributed nutritive supply, pathological conditions could not be removed or physiological ones reestablished. Sodium nitrite was, therefore, extremely valuable when employed before the vascular system had become too pathological to be easily influenced by its power to expand the unduly contracted arterioles. The dose should be from one grain up, at frequent intervals, until the arteries softened. Under its action, when properly given in suitable cases, the distressing symptom dyspnea, Nature's indication of tissue starvation, was completely relieved, while oxidation reduction was greatly augmented, as evidenced by the changes for the better in the catabolic products found in the urine. Now, if at the same time, by other measures, the etiological factors were removed and the diet and digestion rendered perfect, the metabolic processes of the body could be, and often were changed from an absolutely pathological state to one which was perfectly normal. It was the misuse of sodium nitrite, as, for instance, when the arterial system was contracted in connection with an enfeebled cardiac muscle, or when there was engorgement of the general venous system, that had caused many to doubt its efficacy. When, however, employed when and where it could assist Nature, we had no more certain and reliable remedy in the whole materia medica.

Doctor OSBORNE said it was interesting to him to note that the only thing which was of service in the presence of the phenomena of advancing age, when the thyroid grew less powerful and the suprarenals became stimulated, was iodine; and therefore he believed that the stimulation of the thyroid was the one thing that would do good. For this purpose large doses of thyroid were not required. Now, how much could we inhibit the degenerative changes? We had long known that too much meat, caffeine, alcohol, etc., were injurious. If the patient was nervous and subject to psychic disturbances, the great desideratum was rest. Of the iodides, he preferred sodium iodide. It was less irritating than the potassium salt, and it was difficult to understand why the latter was so persistently adhered to in this country. As to the nitrites, we did get a continuous action from them unless actual Bright's disease was present. There were times when it was not proper to lower the blood pressure, and therefore we could not make any fixed rules in this regard. Baking had not been men-

tioned, but he believed it to be one of the best measures at our command.

Dr. R. RUDOLF, of Toronto, said that the increased blood pressure was merely a symptom, not the disease, and in many instances a rise in the pressure was of a compensatory character. Personally, he believed that gentle exercise was of material service. The first effect of this was to raise the pressure, but afterward there was a gradual lowering.

Dr. A. ERNEST GALLANT, of New York, said there was one remedy which seemed to have been avoided, namely, water. He had found that sometimes great relief could be afforded by keeping the patient in bed for ten days at a time, without food, and giving him a gallon of water a day.

Dr. CHARLES E. DE M. SAJOUS said that the thyroid and adrenals were both known to secrete less freely in advanced life, but it often happened that the functional degeneration of the thyroid was more rapid. When this was the case the persistent rise of blood pressure sometimes seen in old age, or even just past middle age, was directly attributable to the adrenals.

Dr. ALFRED C. CROFTON said it was a fact that very small doses of digitalis had the effect of reducing the blood pressure in cases of intestinal intoxication. He had made a series of experiments upon rabbits, injecting, 1, very small doses of digitalis, and, 2, larger doses, and as a result of these experiments he was now accustomed to give very small doses of digitalis, which he found had the action of the nitrites. As to the iodides, while the use of iodine was quite generally advocated in the books, personally he had never any beneficial results from it. Neither could he approve of the water treatment, as he was a firm believer in the restriction of liquids; and he also thought that the restriction of nitrogenous food, especially meats, was of great importance.

Proper Treatment of Diabetes Mellitus and Its Cure by Diet.—Dr. LOUIS KOLIPINSKI, of Washington, D. C., said that the greatest fact in the treatment of this disease was that it was curable by diet, though that it was curable by diet did not state the principle completely or altogether correctly. Rather, it should be said that diet alone was the cure for the disease, and that by any other means this was an impossibility; moreover, that the use of any drug, organic extract, ferment, or enzyme was worthless, and therefore injurious. Gout, obesity, and diabetes were hereditary affections. Diabetes was caused, not by alcohol, but by overeating to a degree of robustness in a laborer and overfatness in the sedentary, and every diabetic had a previous habit of obesity or of excessive eating, with a fondness for special foods containing an excess of vegetable carbohydrates. The lesions of diabetes resulted from a permanent increase of glucose in the blood and its persistent discharge with the urine, and the essential cause of this was the destruction, more or less permanent, of the glycogen making function of the liver. The subject of the disease was permanently bereft of the power of extracting sustenance from sugar and starch. He must henceforth abandon the proverbial staff of life, bread, or death would be the consequence. If, however, a

diet was used which contained little or no carbohydrate, but on which he could live and thrive, no evidence of the continued existence of the disease could appear, no abnormal sensation or manifestation would be perceived, and he would live on in continued good health. The diet regularly prescribed by Doctor Kolipinski was as follows: Breakfast, artificial milk, eggs, ham or bacon, beef-steak, lamb, mutton, fish (fresh, salted, or smoked), raw tomato, a small cup of coffee or tea with cream. Dinner, artificial milk, clear broth, raw tomato and lettuce with mayonnaise dressing, onion, cucumber, pickles; any kind of meat, fish, game, fowl, sausage, tongue, brain, sweetbread; any kind of cheese. Supper, artificial milk, fish, eggs, cold meat, cheese, curds, a glass of cream, tea, or coffee with cream. At bedtime, if desired, artificial milk or a glass of cream. The artificial milk was composed of one raw egg, two teaspoonfuls of malt extract, and four teaspoonfuls of olive oil, which were beaten up together and to which was gradually added, while stirring, one pint of water. It was seasoned to the patient's taste with salt. In three or four months various vegetables and fruits might be allowed, if found not to produce glycosuria. Varied and repeated experience, he said, had proved that this dietary furnished food, even more than enough for life, health, and comfort. The only medicines used in the treatment were saline purgatives, given when the patient had constipation, hemorrhoids, or the fat habit. The diet mentioned, when partaken of for three or four days, invariably brought the specific gravity of the urine to normal or subnormal, and not a trace of glucose could be detected by the ordinary tests. The diabetes was cured as it were by crisis and the continuance of the cure depended upon the faithful observance of the regimen. Under this method the disappearance of glycosuria was absolute, irrespective of how recent or how old the case, how old, mild, or severe the symptoms, or what the quantity of sugar in the urine. In essential diabetes of man glucose did not come from fat or proteid, whatever might be the case in experimental glycosuria. It was of great importance to guard a cured patient from his former habit of overeating and obesity, and it might be necessary to reduce the daily quantity of the artificial milk. The sparing use of alcohol and tobacco need not be prohibited. Having referred to various complications of diabetes, he said that beginning acidosis might vanish, and the acids, fat derivatives, found in the urine in advanced cases might likewise be removed, together with the sugar, but where evidences of the onset of diabetic coma presented themselves, the case was a lost one. In the cases treated by him, the previous duration of the malady had been from one month to twelve years, while the ages of the patients varied from young adult life to old age. The results obtained were precise and invariable when the dietary was faithfully adhered to, and it was with confidence that he reiterated the statement that by this method any diabetic free of terminal disease could be speedily and permanently cured.

Dr. ALFRED C. CROFTON said that, from his own experience and from the literature on the subject, he was convinced that a person once a diabetic was always a diabetic. It was true that the sugar in the

urine could be reduced by diet, but as soon as a carbohydrate diet was resumed the sugar would come back. In light cases it was easy to keep the sugar down, but in the severer ones this was more difficult, as the patient continued to manufacture sugar, even if the diet was restricted to meats and fats. Diabetes was really only a symptom, and underlying it there might be a great variety of conditions. Diabetics should be allowed a certain amount of carbohydrate, say, 100 to 200 grammes of white bread. He believed it was decidedly bad practice to keep the patient on a strict diet! 1. It took away from him the staff of life; 2, the psychic effect was detrimental; 3, it increased the tendency to acidosis. To maintain a strict diet for an indefinite period was not only bad practice, but decidedly dangerous, even in mild cases. In the severer cases it was still more dangerous, and therefore we had to strike a balance in the matter. It was more important to keep the patient in good nutritional form than to have his urine free, or comparatively free, from sugar.

(To be concluded.)

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Die Bedeutung des Sauerstoffs in der Färberei. Von P. G. UNNA und L. GOLODEZ. Leipzig und Hamburg: Leopold Voss, 1912. Dermatologische Studien, Band 22. Pp. 128.

Based primarily on their studies concerning the staining action of methyl green, the authors conclude that the current theory of staining is inadequate to explain all the facts. It is not enough to regard acidity or basicity of stains and tissues as the controlling factors; equally important is what the authors term the "oxypolad" affinity between tissues, mordant, and stain. In any particular case one should seek to determine whether the tissues and mordants oxidize or reduce, and whether the stains are sensitive to reducing or to oxidizing agents.

The book contains a wealth of facts of interest to histologists and others engaged in studies of stained tissues. Incidentally students of chemotherapy may find many stimulating suggestions for their special work.

Modern Theories of Diet and Their Bearing upon Practical Dietetics. By ALEXANDER BRYCE, M.D., D.P.H. (Camb.). New York: Longmans, Green, & Co., 1912. Pp. xv-368.

The author of this book is a firm believer in the maxim "Let your moderation be known before all men." The principle of moderation is the fundamental dietetic doctrine inculcated in this book. A section of seventy-six pages on the theories of metabolism is followed by an exposition and discussion on the various modern theories of diet, concluded in each instance by the author's own views. The vegetarian diet, he says, if carefully selected, is compatible with life and good health, and some attain a higher degree of worth than on any other diet. Its chief value is the inculcation—tacit or expressed—of the principle of moderation. The low protein diet while not to be considered during the winter, is desirable in the summer during the hot weather. The purin free diet is especially useful for those who are quite incapable of metabolizing purins. There are many people who cannot live with any degree of comfort unless they approximate as closely as possible to just such a dietary.

As regards the mastication of food the author believes that during health ordinarily careful mastication is sufficient; the exaggeration of the function as represented by Fletcherism, if permitted at all, should be reserved for certain classes of dyspeptics. The use of the curdled

milk diet is accused by the author of inducing or initiating rheumatism. He has seen this effect produced in many cases. The no breakfast plan is condemned. Whatever is true of other countries, the average man in this country finds that it is much better to take a good, substantial breakfast, and most people find they are incapable of very much work before it.

Fasting is not valued highly, for he says that absolutely no benefits accrue from even a short fast that cannot as certainly follow a moderate restriction of diet within reasonable limits and, moreover, the dangers associated with a prolonged fast can be avoided only by those with powerful and vigorous constitutions.

The author concludes that none of the food fads has demonstrated its right to the proud position of the universal food of mankind in the temperate zone. This is a book worth while. The various theories are clearly presented, fairly discussed, and temperately criticised.

Die Entstehung der Kurzsichtigkeit. Von Dr. GEORG LEVINSOHN, Privat-Dozent für Augenheilkunde an der Universität Berlin. Mit 3 Abbildungen im Text. Berlin: S. Karger, 1912. Pp. 88.

In this brochure the author attempts, by experiments on animals, to show that myopia is largely due to a vicious malposition of the head in all near work. His work seems to have been mainly a repetition of the work of Birch-Hirschfeld and other German investigators, although he deduces somewhat different conclusions. While there is no denying the mechanical influence of a continual venous hyperemia of the ocular structures induced by a cramped head and thorax position, it is hard to accept this hypothesis for the genesis of myopia while the present German attitude toward refractive errors in general obtains. When the Germans adopt the idea of the preventive influence of thoroughgoing refraction (in most cases with a mydriatic) in all hypermetropia and hypermetropic astigmatism as well as the allied myopic conditions, much more weight can be attached to the value of such extensive work as is represented in this monograph.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, yellow fever, plague, and smallpox were reported to the surgeon general of the United States Public Health and Marine Hospital Service during the week ending July 19, 1912:

CHOLERA—FOREIGN: India, June 28, 28 cases, 22 deaths; *Strait Settlements*, May 10-June 1, 2 cases, 5 deaths.
YELLOW FEVER—FOREIGN: Chile, May 1-16, 290 cases, 102 deaths; Mexico (San Juan Bautista), July 1, 1 case; Venezuela, June 1, 1 case, 1 death; July 17, 1 case, 1 death.

PLAGUE—INDIAN: Porto Rico (Dorado) July 15, 1 case, 1 death; (San Juan), July 13, 2 cases.
PLAGUE—FOREIGN: China (Hong Kong), May 10-June 8, 672 cases, 542 deaths; Cuba (Havana), July 12, 1 case, 1 death; India, April 1-June 8, 95 cases, 266 deaths; Japan (Formosa), April 22-June 1, 49 cases, 33 deaths; Java, May 26-June 1, 11 cases, 9 deaths; *Strait Settlements*, May 19-June 1, 3 cases, 3 deaths; Trinidad, July 11, 1 case.

SMALLPOX—UNITED STATES: Colorado, June 1-30, 28 cases; Connecticut, June 1-30, 37 cases; Iowa, June 1-30, 42 cases; Maine, June 1-30, 93 cases; Massachusetts, June 1-30, 24 cases; North Dakota, June 1-30, 36 cases; New Jersey, June 1-30, 1 case; Vermont, June 1-30, 6 cases; Virginia, June 1-30, 72 cases, 1 death; Washington, May 1-31, 133 cases.

SMALLPOX—FOREIGN: China (Hong Kong), May 10-June 8, 6 cases, 5 deaths; (Tientsin), June 2-8, 1 death; France, June 16-23, 2 cases; India (Bombay), June 2-8, 31 cases, 23 deaths; Ceylon, April 27-May 25, 10 cases; (Rangoon), April 1-30, 154 cases, 57 deaths; Japan (Kobe), June 1-16, 2 cases; Java, May 26-June 1, 6 cases, 1 death; Mexico, June 1-30, 1 case, 1 death; Portugal, June 10-22, 3 cases; Russia, May 10-June 22, 35 cases, 3 deaths; Siberia (Vladivostok), May 17-June 1, 1 case; South Africa (Durban), May 26-31, 5 cases, 1 death; Spain, May 1-June 22, 10 cases, 3 deaths; *Strait Settlements*, May 26-June 1, 1 death; Turkey (Izmir), June 16-23, 5 cases; Constantinople, June 17-23, 8 deaths; Venezuela (La Guayra), June 6, 1 case.

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the two weeks ending July 17, 1912:

Anderson, J. F., Passed Assistant Surgeon. Granted five days' leave of absence from July 2, 1912, under

paragraph 189, Service Regulations. Carrington, P. M., Surgeon. Granted ten days' leave of absence from July 14, 1912. Chapin, C. W., Passed Assistant Surgeon. Relieved from duty in plague suppressive measures and directed to report at the Bureau, Washington, D. C. Gardner, C. H., Surgeon. Relieved from duty at Wilmington, N. C., and directed to proceed to Detroit, Mich., and assume command of the service at that port. Goldberger, J., Passed Assistant Surgeon. Directed to proceed to Richmond and Petersburg, Va., and confer with the health authorities relative to a supposed case of typhus fever. Herring, R. A., Passed Assistant Surgeon. Granted fifteen days' additional leave of absence from June 18, 1912. Hurley, J. R., Passed Assistant Surgeon. Relieved from duty in the Philippine Islands and directed to proceed to San Francisco, Cal. Lavinder, C. H., Passed Assistant Surgeon. Granted fifteen days' leave of absence from July 16, 1912. McLaughlin, A. J., Passed Assistant Surgeon. Directed to proceed to Philadelphia, Pa., to examine into the operation of the filtration plants in regard to their efficiency. Manning, H. M., Passed Assistant Surgeon. Granted one day's leave of absence in June, 1912, under paragraph 191, Service Regulations. Safford, M. V., Acting Assistant Surgeon. Granted twelve days' leave of absence from July 15, 1912. Stoner, G. W., Surgeon. Granted one month's leave of absence from July 31, 1912. Wakefield, H. C., Acting Assistant Surgeon. Granted four days' leave of absence from July 1, 1912, under paragraph 210, Service Regulations. Wilson, J. G., Acting Assistant Surgeon. Granted six days' leave of absence from June 12, 1912, under paragraph 210, Service Regulations.

Board Convened.

Board of medical officers convened to meet at the Marine Hospital, Stapleton, N. Y., on call of the chairman, for the reexamination of a pilot to determine his color sense. Detail for the board: Surgeon H. W. Austin, chairman; Passed Assistant Surgeon W. A. Korn, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending July 20, 1912:

Baker, Carroll R., Medical Reserve Corps. Sick leave of absence extended ten days. Baker, David, Major. Ordered to the joint camp of instruction near Columbus, Miss., from August 6th to 16th. Bartlett, C. J., Major. Ordered to proceed from Fort Worden to Fort Lawton, Wash., not later than July 8th, for field service during maneuver campaign. Betts, Charles A., Medical Reserve Corps. Assigned to permanent duty at Fort William H. Harrison, Montana. Brechemin, Louis, Jr., Major. Granted leave of absence for four months to take effect about November 1, 1912. Chappell, Sidney L., Medical Reserve Corps. Ordered to proceed from Fort Totten, N. Y., to Fort Ethan Allen, Vt., for duty with the Tenth Cavalry during maneuvers. Chilton, Frank N., Lieutenant. Ordered to the joint camp of instructions at Bolivar Heights, near Harper's Ferry, W. Va., from August 14 to 28, 1912. Coffin, Jacob M., Captain. Left Fort Riley, Kas., en route to Camp Douglas, Wis. Cutliffe, W. C., Medical Reserve Corps. Reported for temporary duty on United States Army transport *Dir*, Seattle, Wash. Davis, W. R., Captain. Ordered to camp at Gettysburg, Pa., July 22 to 31, 1912. Relieved from duty at Fort Porter, N. Y., and ordered to Schofield Barracks, H. T., for duty. Eckels, L. S., Lieutenant. Will proceed from Fort McKinley, Maine, to Plattsburg Barracks, N. Y., and report August 5th for duty with the Fifth Infantry during the maneuvers. Foucar, Frederick H., Lieutenant. Granted seven days' leave of absence. Ordered to the joint camp of instructions at Bolivar Heights, near Harper's Ferry, W. Va., from August 14 to 28, 1912. Hardaway, R. M., Lieutenant. Ordered to proceed from Fort Lawton, Wash., for temporary duty on the transport *Dir*. Harris, J. R., Captain. Upon arrival at San Francisco,

Cal., to proceed to Letterman General Hospital for observation and treatment. **Heffenger**, Arthur C., Contract Surgeon. Contract annulled July 15, 1912, services no longer required. **Humphreys**, H. G., Captain. Ordered to camp at Gettysburg, Pa., July 22d to 31st. **Ingold**, John G., Lieutenant. Left Fort Missoula, Mont., en route to camp, Helena, Mont. **Keefe**, F. T., Lieutenant Colonel. Left West Point, N. Y., on thirty days' leave of absence. **Lake**, George B., Lieutenant. Reported for temporary duty at Fort Benjamin Harrison, Ind., left Fort Sheridan, Ill., July 12th. **Lambie**, J. S., Jr., Captain. Will proceed from Fort McHenry, Md., with the 141st Company Coast Artillery, to Fort Strong, Mass., and upon completion of this duty return to station. Relieved from duty at Fort McHenry, Md., to take effect upon the abandonment of that post and ordered to Fort Myer, Va., for duty. **Lewis**, William F., Major. Granted twelve days' leave of absence. **Lombard**, M. S., Medical Reserve Corps. Reports arrival at camp near Pole Mountain, Wyo., left Fort D. A. Russell, Wyo., July 6th. **McAndrew**, P. H., Major. Will proceed from Fort Terry, N. Y., and report August 8th for duty with Fifth Infantry, Hawleyville, Conn., for duty during maneuvers. **McLellan**, George H., Lieutenant. Leave of absence extended one month. **Mabee**, James I., Captain. Leave of absence extended thirty days. **Morse**, A. W., Major. Granted four months' leave of absence with permission to go beyond the sea. **Murtagh**, J. A., Major. Left Fort Leavenworth, Kas., en route to Camp of Instructions, Fort Benjamin Harrison, Indiana. **Myers**, William H., Medical Reserve Corps. Ordered to proceed from Fort Screven, Ga., to Fort Myer, Va., for duty with troops from the latter post at Connecticut maneuvers. **Palmer**, Fred W., Captain. Left Fort George Wright, en route to Camp Gray Harbor, Wash. **Poust**, L. R., Medical Reserve Corps. Granted one month and fifteen days' leave of absence. **Rand**, I. W., Major. Ordered to the joint camp of instructions at Bolivar Heights, near Harper's Ferry, W. Va., from August 14th to 28th. **Reynolds**, Charles R., Major. Granted one month and fifteen days' leave of absence. **Richards**, Robert L., Captain. Relieved from duty at the Letterman General Hospital, San Francisco, Cal., and ordered to Fort Bliss, Tex., for duty. **Schmitter**, Ferdinand, Captain. Will proceed from Fort Groble, R. I., to Fort Ethan Allen, Vt., for duty with the Tenth Cavalry during maneuvers. **Scott**, Thomas E., Lieutenant. Reports arrival at camp at Bridgeport, Conn.; left Fort Niagara, N. Y., July 10th, with Company B. First Battalion Engineers. **Smart**, William M., Captain. Ordered to the joint camp of instructions at Bolivar Heights, near Harper's Ferry, W. Va., from August 14th to 28th. **Smith**, Allen M., Lieutenant Colonel. Left Fort Snelling, Minn., en route to Camp Sparta, Wis., for duty as chief surgeon. **Snow**, Corydon G., Lieutenant. Assigned to temporary duty at Fort Baker, Cal., pending the sailing of the transport for Manila, August 5, 1912. **Tasker**, A. N., Captain. Ordered to camp at Gettysburg, Pa., July 22d to 31st. **Truby**, Willard F., Major. Granted fifteen days' leave of absence. **Wadhams**, Sanford H., Major. Relieved from duty at Fort Slocum, N. Y., and ordered to Fort Porter, N. Y., for duty. **Whitcomb**, Clement C., Major. Granted leave of absence for one month and fifteen days. **Whitmore**, E. R., Major. Ordered to the joint camp of instruction near Columbus, Miss., from August 6 to 16, 1912. **Whitney**, Walter, Medical Reserve Corps. Now on duty at camp, Anniston, Ala., will report for duty with the battalion of the Seventeenth Infantry selected for duty at the joint camp of instruction near Columbus, Miss.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending July 30, 1912:

Camerer, C. B., Passed Assistant Surgeon. Detached from the *Yorktown* and ordered to the *Denver*. **Cuthbertson**, Roy, Passed Assistant Surgeon. Ordered to the Navy Recruiting Station, Cleveland, Ohio. **Donelson**, Martin, Passed Assistant Surgeon. Detached from the

Cincinnati and ordered to the *Wilmington*. **Fiske**, C. N., Surgeon. Detached from the *Nebraska* and ordered to the *Utah*. **Halton**, E. P., Assistant Surgeon, detached from the Puget Sound Hospital and ordered to the *Alert*. **Jenness**, B. F., Passed Assistant Surgeon. Detached from the *Utah* and ordered to the *Nebraska*. **Kaufman**, J. B., Passed Assistant Surgeon. Detached from the *Louisia* and ordered to the *Tacoma*. **Minter**, J. M., Passed Assistant Surgeon. Detached from the *Wilmington* and ordered to the *Cincinnati*. **Orvis**, R. T., Surgeon. Detached from the *New Hampshire* and ordered to the *Alabama*. **Shepard**, G. W., Passed Assistant Surgeon. Detached from the Navy Recruiting Station, Cleveland, Ohio, and ordered to the Navy Yard, Puget Sound, Washington. **Sinclair**, J. A. B., Passed Assistant Surgeon. Commissioned as Passed Assistant Surgeon from October 12, 1911. **Taylor**, E. C., Acting Assistant Surgeon. Ordered to the Navy Recruiting Station, Minneapolis, Minn.

Births, Marriages, and Deaths.

Born.

Bloombergh.—On July 10th, to Major H. D. Bloombergh, U. S. A. Medical Corps, and Mrs. Bloombergh. a son, John Hillis.

Married.

Melody—Burns.—On July 11th, at Detroit, Mich., Dr. William P. Melody and Miss Marie Louise Burns. **Owens—O'Connor**.—On July 7th, at St. Louis, Mo., Dr. Bert O. Owens and Miss Charlotte O'Connor. **Snow—Watkins**.—On June 22d, Captain Corydon G. Snow, U. S. A. Medical Corps, and Miss Anna M. Watkins. **Tewksbury—Metcalfe**.—On June 27th, at Tunkhannock, Pa., Dr. Walter Tewksbury and Miss Marion G. Metcalfe.

Died.

Anthony.—On July 10th, at Chicago, Dr. Henry C. Anthony. **Bache**.—On July 9th, at Philadelphia, Dr. T. Hewson Bache. **Bellows**.—On July 12th, at Philadelphia, Dr. Horace M. Bellows. **Billard**.—On June 20th, at Washington, D. C., Dr. Jules F. Billard. **Bonser**.—On July 9th, at Dover, N. H., Dr. William H. Bonser. **Boyd**.—On July 5th, at Kingston, Ont., Dr. Frederick Charles Boyd. **Caffery**.—On July 12th, at San Antonio, Tex., Dr. Russell Caffery. **Clark**.—On July 15th, at Kansas City, Mo., Dr. T. C. A. Clark. **Deuscher**.—On July 11th, at Berne, Switzerland, Dr. Adolf Deuscher. **Doherty**.—On July 5th, at New Haven, Conn., Dr. James J. S. Doherty. **Ellis**.—On July 11th, at Jackson, Ga., Dr. J. T. Ellis. **Haight**.—On July 14th, at Ocean Grove, N. J., Dr. A. M. Haight. **Hutchinson**.—On July 10th, at Denver, Colo., Dr. J. C. Hutchinson. **Hyland**.—On July 11th, at Keene, N. H., Dr. Jesse B. Hyland. **Largeman**.—On July 15th, at Philadelphia, Dr. Henry C. Largeman. **Lawlor**.—On July 8th, at Lawrence, Mass., Dr. John J. Lawlor. **Light**.—On July 9th, at Lebanon, Pa., Dr. Raymond Light, aged thirty-eight years. **Marcum**.—On July 12th, at Glasgow, Ky., Dr. A. B. Marcum, aged seventy-two years. **Mathieu**.—On July 12th, at Central Falls, R. I., Dr. J. E. V. Mathieu, aged forty-nine years. **Mayer**.—On July 12th, at Hartford, Conn., Dr. Nathan Mayer, aged seventy-three years. **Nelson**.—On July 6th, at Pasadena, Cal., Dr. W. J. Nelson, aged sixty-seven years. **Righeimer**.—On July 12th, at Garrett, Ind., Dr. John W. Righeimer, aged twenty-four years. **Sawyer**.—On July 15th, at Chicago, Dr. John E. Sawyer. **Shaver**.—On July 10th, at Louisville, Dr. Thomas Shaver, aged seventy-three years. **Shidler**.—On July 11th, at York, Neb., Dr. George W. Shidler, aged sixty-three years. **Stokley**.—On July 11th, at Cape Charles, Va., Dr. William Stokley, aged sixty-one years. **Thorne**.—On July 6th, at Gloversville, N. Y., Dr. John K. Thorne. **Weedon**.—On July 10th, at Wilmington, Del., Dr. William Stone Weedon, aged twenty-four years. **Williams**.—On July 11th, at Dicksonville, Va., Dr. Jonah Williams. **Wright**.—On July 12th, at Oxford, Miss., Dr. P. H. Wright.

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Lectures and Addresses.

THE ADVANTAGES OF A COLD DRY CLIMATE IN THE TREATMENT OF SOME FORMS OF DISEASE.*

By A. D. BLACKADER, M. D.,
Montreal,

Professor of Therapeutics, McGill University.

In opening the twenty-ninth annual meeting of the American Climatological Society my first duty is to express my appreciation of the honor conferred upon me in electing me as your presiding officer. To repeat what I said at the time of my election, I feel that the honor is not for myself alone, but must be regarded as another instance of the generous and courteous spirit shown at all times by the profession in the United States to their confrères in the Dominion lying to the north of them. The honor was accepted in this spirit, and I think I but speak the feelings of the Canadian profession when I say we appreciate your generosity and fully reciprocate your kindly sentiments.

The scientific part of our programme is an unusually full one and contains many papers of much interest. All credit is to be given to our very able secretary for the unflinching interest with which he has attended to its details. You will notice also how very delightfully our good friends in Hartford have arranged for our entertainment.

It is one of the duties of your president to open your meeting with an address on some subject of broad general interest. In my effort to choose such a topic I found it difficult to select one on which much had not previously been said and written. After some thought I determined to speak of a phase in the climate of my own country and to ask your consideration of the advantages and disadvantages of our severely cold steady winter in the treatment of some forms of disease. In doing so I must crave your indulgence if in the presentation of my subject I reiterate some facts with which you are well acquainted.

While it must be admitted that our winter months are long and severe, and that during that time many of our patients find their way southward to your more balmy and less rigorous resorts, yet not a few from your more uncertain climate find that the stimulating and health giving properties of the steadily severe but dry cold of northern Canada, and especially of our Laurentian plateau, confer a vigor not to be obtained elsewhere.

Only to the few perhaps is the thought of a sharp frosty air and a temperature at zero, or many degrees below it, an inspiration. Unfortunately to most of you, a cold temperature in southern regions is invariably associated with much moisture in the air; and it must be acknowledged that cold with moisture is extremely depressing to the general vitality, and strongly predisposes to irritable conditions of the upper and lower respiratory tract. Nevertheless, it is to be noted that in countries where such conditions prevail for the greater part of the year a particularly resistant breed of men is raised. We have no stronger or harder immigrants than the Norseman or the Scotch Highlander. Cold climates, however, in which the air is dry are still more stimulating and, when the body heat is maintained by warm clothing and a proper supply of food, a keen frosty air induces in the sufficiently vigorous the maximum physiological reaction with much increase of muscular energy, excepting when the cold is so intense as altogether to overpower the resistance of the system.

The effect of cold air on the body is twofold. There is an actual abstraction of heat, which is rarely desirable, and which, so far as possible, should be prevented. In cold air the body loses heat to a slight extent only by evaporation; it perhaps loses a little more by radiation, while by conduction the amount lost is often very great, and is dependent on the rapidity of movement in the air, and on the amount of moisture it may contain.

On a clear, bright, frosty day, with little wind, but with the temperature many degrees below zero, a person, properly clad, loses very little heat by any one of these three methods, and may spend a long time out of doors before he becomes conscious of any unpleasant sensation of cold. On the contrary, in New York with the thermometer above the freezing point and a moisture laden east wind blowing, any one of us will find it impossible to prevent very depressing sensations of chilliness, due to the rapid extraction of heat.

Much more important, however, from a therapeutic standpoint, than the mere abstraction of heat from the body, is the second effect; i. e., the stimulating action of cold on the delicate sentient nerves of the periphery, and just as a vigorous man reacts to a cold bath and comes out feeling warmer and more full of energy than before he stepped in, so in a cold frosty air a man with an active vasomotor centre quickly reacts, and the young return from their snowshoe tramps on nights registering many degrees below zero with faces aglow, extremities warm, and a strong forcible pulse beat.

Under the effective stimulation of the cold air

*Presidential address, twenty-ninth annual meeting of the American Climatological Society, Montreal, June 10, 1912.

both respiration and circulation are strengthened, oxidation is increased, and nutrition becomes more active. This action is doubtless in part due to the effect of cold air on the peripheral afferent nerves of the body, especially on those which have to do with the sense of temperature. The limit of the influence thus exerted over many important functions of the body has not yet been definitely ascertained by the physiologist, but the observant physician is aware of its great importance. In addition, however, to the action on the cutaneous nerves, a powerful stimulation is also conveyed to the medullary centres by the effect of cold air on the nasal mucous membrane. The pharmacologist knows that his promptest and most effectual route to the vasomotor centre is through stimulation of the Schneiderian membrane, and Howland's experiments in Bellevue Hospital indicate that in cold air we have one of our most effectual remedies to stimulate respiration, to increase vascular tension, and to strengthen and often to slow the pulse.

As a rule cold fresh air favors natural sleep provided the body be sufficiently protected to maintain its surface heat. Especially is this the case in the pyrexia of pneumonia, of tuberculosis, and of typhoid. In a few instances only, and those for the most part cases of arteriosclerosis, cold air acts as a stimulant and interferes with prolonged sleep.

All movement in cold air increases its action in abstracting heat. When the air is very dry a moderate wind augments the amount of stimulation obtainable, but when cold air is also moist a strong wind leads to rapid abstraction of heat, and may give rise to great depression of the vital powers.

Cold has also a markedly stimulating action on the digestive system, provided the cold be not excessive. As a rule appetite and digestion with all of us are better in the cold dry days of winter than in warm weather. Explorers, who have traveled in Arctic regions, tell us of the enormous quantities of food which have to be served out to laborers, and Doctor Cheadle in his interesting account of a trip through the Northwest, emphasizes the importance of a sufficient amount of food and especially of fat for the health and well being of individuals in cold weather. This increased consumption of food is not attended with any subjective or objective disturbance of health, for any excess is rapidly burnt up in the system. In a few cases, however, the severe cold of winter interferes with digestion, and Dr. Lawrason Brown, in a paper read before the society some years ago, called attention to the fact that when the digestive system under these conditions failed to respond to the increased demand nutrition was rapidly lowered and vitality impaired. Cold appears also to stimulate the blood forming organs.

As a result of this stimulation to oxidation and nutrition, the innate resistant powers of the body against toxins and its ability to respond protectively to the assault of infections, are greatly increased.

The benefit to be obtained from cold, however, will always depend upon the power of the individual to react, and this power varies greatly with different individuals and appears to be in great measure dependent on vasomotor tone. In those in

whom it is defective, much may be done to increase it by the use of cool or cold water in bathing. This should be begun gradually; a partial sponging at first with cool water, followed promptly by a brisk rub till reaction ensues. In a few days colder water may be employed in the form of a douche or spray; and in time the cold tub may be ordered every morning and may come to be considered as one of the luxuries of the day. Doctor Bridge's recommendation of a daily hot bath is not in my opinion advisable in a Canadian winter, as it tends to induce a paralytic condition of the peripheral nerves with an inability to react promptly to cold impressions.

My experience also leads me to the belief that all those who suffer from any interference with the free passage of air through the nostrils, do not react well to cold temperatures and gain little benefit during the winter season. In inflammatory conditions of the larynx and trachea cold air may act as an irritant and do definite harm. Individuals suffering from organic diseases of the circulation as a rule stand cold poorly. In a few instances the cold may rouse to increased activity the defective powers of compensation and distinct improvement may set in, but too often an efficient reaction fails to be elicited and the severe cold leads to disastrous results. Anemic patients, as a rule, do well, but require caution in maintaining body heat.

In cold weather the eliminating functions of the skin are very slight and toxic materials in the system are thrown off almost entirely by the kidneys and intestinal tract. To benefit from a winter in the north both should be in healthy working order. Extreme cold is not desirable for cases of gout, arthritis, or neuritis. For those suffering from advanced degeneration in any organ, for those advanced in years, and for the very young, extreme cold may be distinctly harmful.

Lieutenant Colonel C. A. Woodruff, U. S. A., has called attention to the marked difference in resisting power to adverse conditions in the tropics between fair and dark skinned individuals and gives as an explanation the protecting influence of the pigment in the skin. The fair skinned might be expected to have the advantage with us in the North, but my own observations in hospital wards do not warrant any statement to that effect.

It cannot be too strongly emphasized that all the benefit to be derived from a residence in the North will depend on the completeness with which an outdoor life is lived. Confinement indoors in a heated atmosphere and as a rule with defective ventilation, must always be regarded as distinctly harmful. This unfortunately is a condition which occurs altogether too frequently in many of our Canadian families.

The value of cold air in the treatment of disease appears to have been first recognized by Doctor Bodington, of Devonshire, England, who about the middle of the eighteenth century wrote emphasizing the importance of cold as well as fresh air in the treatment of tuberculous patients. "No cold," he says, "is too severe for the consumptive"; and again, "the cooler the air which passes into the lungs the greater will be the benefit which the consumptive patient will derive." Certainly, very re-

markable statements for his age. In this country Doctor Loomis appears to have the credit of first suggesting, and Doctor Trudeau the credit of being the first to carry out the braving of a zero temperature by a sick man along the lines indicated by Brehmer in Germany some years previously. The annual reports from the Adirondack Sanatorium indicate how successful such cold air treatment may be in the early stages of phthisis and Dr. Lawrason Brown writes me that he believes that tuberculous patients do very much better in cold climates than elsewhere when they are able to withstand the cold and react to it; pyrexia rapidly subsides; anemia disappears, and digestive troubles of neurotic origin are greatly improved. He also calls attention to the fact that as a rule patients begin to gain in weight whenever cool weather sets in and unfortunately tend to lose it with the onset of the warmer months.

Doctor Byers and Doctor Paterson write me from Ste. Agathe that in cold weather the rapid and permanent gain in weight, and the improvement in the nervous and mental condition of patients is very remarkable. Night sweats become infrequent, the amount of hemoglobin rapidly rises and with the improvement in the local conditions expectoration, dyspnea, and cough disappear. I cite these facts not because they are in any way unusual, but because they illustrate the wonderfully stimulating properties of cold air on general nutrition and on the development of the system's resistant powers.

My own experience also leads me to believe that cold of not too severe a character is of distinct advantage to children over three or four years of age, and particularly to those children who breathe freely through their nostrils. Many of my patients, anemic children of tuberculous parents, who suffered from enlarged glands and impaired digestion were greatly improved by a winter spent in the Laurentian plateau.

No other place that I am acquainted with presents so many advantages as a winter resort with a steadily cold dry climate, as this Laurentian plateau, which with an altitude of twelve to fifteen hundred feet stretches more than half way across our continent, north of the St. Lawrence river and of the great lakes. This plateau, the Canadian shield or boss of the earth's crust, constitutes the greater part of the original land area of the North American continent. The low rounded hills which rise in a series of ranges consist of primeval rocks, which retain in many places the striation made by the slow flow of the tremendous glaciers which in previous ages covered all this plateau, rounding the tops of the hills and filling the valleys with glistening sand. Toward the north this plateau slopes down toward Hudson's Bay and on the south to the great lakes and the St. Lawrence, affording perfect drainage by numerous rapidly flowing streams.

Of the many attractions which this region possesses during the summer I do not propose at this time to speak; during the winter patients may find here for the greater part of the season bright skies and a dry air. There is a minimum of stormy days, no rain, a complete absence of dust from the middle of November to the middle of April, and almost complete freedom from the troublesome infections

of warmer climates, such as influenza, pneumonia, malaria, and typhoid. Elliott writes me that out of 2,000 patients treated in Gravenhurst during a period of ten years he met with only two cases of pneumonia and only one of these was typically lobar.

To the patient coming from more southern scenes the first impression of the bright snowclad landscape is one of surprise and admiration. He is aware of the cold more by external appearances than by any disagreeable sense of chilliness, and is tempted to doubt the reality of the thermometer's indications. He is distinctly conscious of increased energy, and gazing over the white expanse of frozen lake, surrounded by hills covered with an evergreen forest, he is tempted to renew his boyhood's delight in outdoor sports, under a sun as bright as that of a summer's day and in an air as pure as Nature can produce it, for its only contamination is the balsamic exhalation from the surrounding pines.

The great depth of snow buries all impurities; any added refuse is quickly hidden and rendered harmless by a fresh snow covering. All noxious emanations lie dormant till the spring and are then quickly carried off by the rapid flow of water.

The daily variation in winter temperature rarely exceeds 15° F., contrasting favorably with the variation in more southern regions. For in our northern clime the sun's rays though bright, have less direct power, and the white glistening snow neither absorbs nor radiates heat. There is, therefore, not a marked difference between the shade temperature during the day and that of the night.

This moderate variation acts as an effective brace with but little tendency to disturb the system.

For any one with fair recuperative power, a winter spent in such a region affords the greatest stimulation possible. Its cold invigorating air and its beautiful scenery energize and enliven, favoring not only perfect nutrition, but also the development of all the system's innate resistant forces, Nature's antibodies, and through them enabling the constitution to make an effective fight against the assault of all pathogenic organisms.

436 MOUNTAIN AVENUE.

Original Communications.

SEXUAL CRIMES.

BY AUSTIN FLINT, M. D., LL. D.,
New York.

Aside from indecent exposure, adultery, incest, and rape, the only sexual crime defined in the Penal Law of the State of New York is sodomy. Section 690 reads:

A person who carnally knows in any manner any animal or bird; or carnally knows any male or female person by the anus or by or with the mouth; or voluntarily submits to such carnal knowledge; or attempts sexual intercourse with a dead body, is guilty of sodomy and is punishable with imprisonment for not more than twenty years.

This statute does not include many acts of sexual perversion, such as fetishism, sadism, and masochism. Exhibitionism, defined in the statute as indecent exposure, is a misdemeanor. This is very com-

mon in some forms of insanity. There are several inmates of the Matteawan State Hospital who have been guilty of incest and who presumably are insane. Fetishism and masochism are forms of perversion that do not lead to crime. Sexual inversion and necrophilia are crimes included in the statutory definition of sodomy.

The most important form of sexual perversion, important in that it leads to crime, often of the most horrible and revolting character and punishable by death, is sadism; and a question of great moment is whether or not this mental condition, which exists only in degenerates and is not recoverable, is a form of insanity that renders its subjects medically irresponsible, although they are responsible under the law.

The law requires that a person should restrain his normal sexual instincts within certain limits. For example, adultery or intercourse with a woman less than eighteen years of age, although it may be physiologically normal, is a misdemeanor. Under the law, also, a person with abnormal sexual instincts must restrain them within the limits indicated in Section 690 of the Penal Law; and if, being a sadist, he commits crimes of violence or murder, he is not excused for his crime by reason of his abnormal mental condition. This shows the legal as well as scientific importance of the question as to whether sadism is in any sense a form of insanity. The violent acts done by sadists are due to morbid impulses, not obsessions. An impulse of this kind has a definite object and is not due to a delusion. Usually such impulses are not resisted. Obsessions, however, are involuntary, without motive, and persistent. They are subjective and are attended with recognition of their morbid character, with aversion and resistance.

As a preliminary to the consideration of individual cases, it will be well to note the origin and definition of the term sadism.

The Count (usually called the Marquis) de Sade was born in Paris, in 1740. At an early age (about fourteen years) he entered the army and saw considerable service. He returned to Paris in 1766, and soon became notorious for his vicious and licentious life. In 1772 he was condemned to death at Aix for an unnatural offense and for poisoning. He escaped to Italy, but in 1777 he returned to Paris, was arrested, sent to Aix for trial, and found guilty. In 1778 he escaped, but was soon taken and committed to the Bastille. It was there that he wrote most of his infamous plays and novels. In 1789 he was sent to Charenton as insane, but was discharged in 1790. He was recommitted to the asylum in 1803, where he died in 1814. His most notorious works were *Justine* (1791), *Juliette* (1792), *Philosophie dans le boudoir* (1793), and *Les Crimes de l'amour* (1800). His career gave the name to the form of sexual perversion known as "sadism."

Sadism has been defined as a form of perversion in which "sexual gratification is experienced only through domination or violence exercised upon persons of the opposite sex or of the same sex, upon animals, or upon inanimate objects" (Garnier).

The best account of sadism, in all its degrees, is found in the last edition of Régis, *Précis de psychiatrie*, p. 164, Paris, 1901. This mental pervers-

sion is so little known, except to alienists and criminologists, that it may not be out of place to quote from Régis rather fully:

Sadism being, of all sexual perversions, that which leads to the gravest acts, one can establish clinically a certain number of degrees, according to the gravity of its effects.

In the most mild degree, one has a *sadism* purely *Platonic*, that is to say, that which satisfies itself simply in imagination by the evocation or the creation, either mental, or narrated, written, drawn, painted, of scenes of violence, these symbolic creations and evocations sufficing to produce sexual pleasure.

In a more marked degree, there already are *real acts of violence*, but more or less *mild*: blows, flagellation, biting, pricking different parts of the body.

In the third degree, we find *serious wounds* proceeding sometimes even to death, section of the lobules of the ear, of the nose, of bits of flesh, divers mutilations, simple murder.

Finally in the last degree, are placed horrible enormities (*monstrosités*) such as assassinations with choking, disemboweling, ablation of the genitalia, evisceration, dismemberment, sucking the blood or flesh of the victim, even the violation of cadavers and vampirism.

The divisions of sadism that we have admitted, are manifestations in different degrees of the same perversion, separated, not by absolute differences, but by insensible transitions. And the proof is that patients very well can pass from one to the other. It is not so far as one would believe between the intellectual impulse, as Ball said, and the motor impulse since, according to modern psychology every idea is a movement which begins. Between the sadic degenerate, who in imagination spans, whips, and lashes women till they bleed, and the one who kills them, mutilates them, disembowels them, and really defiles them, there exists only a difference of transition and of degree. There is an uninterrupted chain of impulsive manifestations of the sexual instinct, which explains itself and completes itself, one by the others.

Out of nine cases of extreme sadism with complete histories, detailed by Krafft-Ebing (*Psychopathia sexualis*, p. 88, et seq., New York, 1906) as cases of *lust murder*, four patients certainly were insane, and five seemed to be simple examples of sexual perversion. All had a tainted heredity and usually there was a psychopathic early history.

The notorious Jesse Pomeroy, who cruelly beat and cut seven boys between seven and ten years of age, murdered a little girl, and afterward was sentenced to solitary confinement for life for the murder of a little boy, in April, 1874, he being then fourteen and a half years of age, is now living, and has given no evidence of insanity. In the last murder, the genitalia were partly removed. Jesse Pomeroy was probably a precocious sadist.

The so called Whitechapel murders in 1887, 1888, and 1889, eleven in number, were supposed to be done by one and the same person—"Jack the Ripper." These were true lust murders. The victims were abandoned women of a low class. They all were mutilated, and in several instances the genitalia were removed. The murderer has not been discovered.

Ameer Ben Ali (known as George Frank, or "Frenchy"), who was convicted in 1891 of the murder and mutilation of a degraded woman named Carrie Brown and familiarly called "Shakespeare," received a life sentence. He spent part of his time in prison and part in the Dannemora State Hospital as insane. He was deported to France in 1902. It is not known whether he was insane or shamming dementia. He made no confession. The manner of mutilation of the woman shows that he probably was a sadist.

In February, 1903, William Hooper Young, an inventive paranoiac, received a life sentence on a plea of murder in the second degree. He killed a woman whom he lured to his apartment and mutilated in a manner that suggested sadism. He had a delusion that he was persecuted by a number of persons who were endeavoring to rob him of a valuable invention, and that this woman was their agent and intended to make away with him. If Young is a sadist, it is a striking instance of sadism grafted on true paranoia. At the trial, Young shammed stupor and dementia, but he recovered from this after the medical examination.

There is now in the Matteawan State Hospital an alcoholic paranoiac, named James McPartlandt. He is a sexual pervert and sadist. He strangled and killed two women during rape.

There is also in the Matteawan State Hospital a woman called Lizzie Halliday. She is credited with nine homicides, four well authenticated, and five reasonably certain. She killed a female attendant in the hospital, cutting her almost to pieces with scissors. She does not present any well defined form of insanity and is thought to obtain sexual satisfaction in these murders.

Restricting the question of insanity to the extreme degree of sadism attended with lust murder, out of fifteen cases, including the nine reported by Krafft-Ebing, seven were clearly insane, six of the subjects seemed to be simply sadists, and in two the mental condition was doubtful or unascertained.

Much present interest is attached to the recent brutal murder of little Julia Connors by Nathan Swartz. The details of this case are so fresh in the public mind through the secular press that a mere summary of the facts will suffice here.

At 5:30 p. m., on July 6, 1912, Swartz accidentally met Julia Connors, twelve years of age, but unusually well developed, a girl whom he did not know. Swartz accosted her and allowed her to look through an opera glass which he had in his hand. He lured her to a flat occupied by his parents and their family. As soon as she passed the door he seized her by the throat, overpowered her, and threw her to the floor, when she became insensible. He then carried her to the roof and from there down a vacant flat in the adjoining house and into a bath room. In this flat he made about twenty jabs in her back with a knife, slashed her throat and forearms, and stabbed her in the heart. At about half past nine o'clock he thought the child was dead. He had stripped her, in his father's flat, of her clothing, except a "union suit." It was found that he had made forty-one rents in this garment with his knife. He then returned to his father's flat and procured a soap box, which he carried to the place of the murder. He crowded the girl and her clothing into this box, having cut off a great part of her hair.

The details of the finding of the girl the next morning barely alive, her death soon after, and the action of the police have no scientific importance.

The day after the murder and after the body had been found, Swartz, of his own accord, confessed the crime to his father. His father gave him \$1.25 to buy a pistol and told him to kill himself and save the family further disgrace. Swartz then disappeared. On the morning of July 18th, twelve days

after the murder, he was found dead in a lodging house, having committed suicide by inhaling illuminating gas. In an open letter, unsigned and undressed, the general contents of which seem perfectly rational, he wrote:

"I want to say that if I will happen to be revived in order to be executed, why, I will take that medicine just the same. . . . I'm sorry I done it, but I got crazy as I often do and you can't blame me nor any one."

On an old linen collar he wrote: "I am guilty, and am insane. It was caused by the beautiful makeup of women."

Swartz was twenty-three years of age and unmarried. His complete family history is unavailable; but his father, mother, and two sisters are living and in good health. He was strongly built and was a prize fighter in a small way, fighting, when he had an opportunity, for a few dollars. He was noted for annoying young girls by insulting language and attentions. He was under sentence for a crime against a girl, proposing intercourse *per os*, and was under parole in the care of a probation officer, to whom he was required to report. He annoyed his sisters, one unmarried, about seventeen years old, and one married, about twenty years of age, by indecent behavior and improper proposals. He frequently masturbated in their presence and was known as an exhibitionist. His sisters would not walk with him in the Central Park on account of his indecent conduct.

The post mortem examination of Julia Connors, made by Dr. W. Riegelmann, coroner's physician, showed no evidence of sexual use, either of the vagina or rectum; "an examination of scrapings of these parts for spermatozoa was also negative."

Extended comment on this case is hardly necessary. There is no evidence that Swartz was insane, unless the extreme degree of sadism is to be regarded as a form of insanity. However, it is remarkable that Swartz confessed his crime so early, expressed remorse, and finally committed suicide. Sadists frequently admit their crimes when confronted with proofs; but in no work immediately available is there to be found an instance of remorse or suicide.

To sum up the relations of sadism, with lust murder, to insanity in a few words:

This degree of sadism is often associated with different forms of insanity and is found in psychopathic degenerates with a tainted heredity; but of itself it is a disease by itself, and its subjects should be held responsible for their acts. It is not a valid excuse for crime. A sadistic murder, it is true, is due to a morbid impulse, but such acts are in no sense delusional. Section 34 of the Penal Law provides that:

A morbid propensity to commit prohibited acts, existing in the mind of a person who is not shown to have been incapable of knowing the wrongfulness of such acts, forms no defense to a prosecution therefor.

A most instructive instance of the grafting of sadism upon true paranoia is the case of Thaw, which has recently engaged the attention of the court for the fifth time. The main scientific interest attached to this case is in the fact that Thaw, who was acquitted of murder in January, 1908, on the ground of insanity, at, and long before the time

of the homicide, was a pronounced sadist. The homicide was clearly due to a systematized delusion and was in no way connected with the sadistic practices which had continued for several years before.

The important facts in this remarkable case are briefly and substantially the following:

Thaw was born February 12, 1871. He has a tainted heredity and his personal history shows an unstable and highly neuropathic childhood and youth. In his early life he was subject to attacks of violent excitement without cause and had a cruel disposition. In 1903, he was told a gruesome story of rape by the girl whom he married in April, 1905. Upon this story he built a delusion that a band of wealthy debauchees maintained one or more places in New York to which they lured innocent young girls, whom they raped by means of drugs or by violence. It is more than probable that this idea had some foundation in fact; but Thaw came to regard himself as having a special mission to break up these practices and bring the malefactors to justice. His ideas finally centred upon one man, the one who was said to have drugged and violated his wife in November, 1901, several years before his marriage. He first appealed for help to the district attorney, the president of the New York Society for the Suppression of Vice, and to the Pinkertons. He received no material aid from these sources, as he was told, for want of legal evidence. Finally he took the matter into his own hands and killed his victim on June 25, 1906.

At the two trials after the homicide, it was in evidence that he believed he was obstructed in his reformatory efforts by hired ruffians; that after the homicide there was a conspiracy between his lawyers, his experts, the district attorney, and others to railroad him to an asylum for the purpose of protecting the reputation of the man he had killed and his associates in crime. He also had a delusion of poisoning in the prison. Thus delusions developed of conspiracy and persecution. To complete the picture of true paranoia, he had auditory hallucinations, hearing little girls screaming in the station house on the night of the arrest, there being no little girls in the building at the time and the officer in charge hearing nothing. A similar hallucination occurred while he was living with the girl whom he afterward married, in an old German castle, in 1903.

The homicide itself was a typical paranoiac murder, done in a public place and in a most dramatic manner. As regards the act itself, Thaw repeatedly told his experts during their examinations that it was an act of Providence. "Providence took charge of the situation. This was an act of Providence."

It would be difficult to imagine a more faithful picture of true paranoia of the reformatory type, with systematized delusions of conspiracy and persecution. His memoranda of advice to counsel showed a highly exaggerated ego. While in the City Prison and on trial for his life, he wrote letters to the judge, suggesting modifications of sentences of criminals whom he met in prison. He attempted to reform the management of the Matteawan State Hospital; and, indeed, by the liberal use of money and the exercise of influence, he actually succeeded in reorganizing the medical staff. His

various writings and his will and codicil, executed on the day of his marriage, are insane documents.

His first trial took place in January, 1907, and resulted in a disagreement of the jury. The second trial was in January, 1908. He was then acquitted on the ground of insanity and sent to the Matteawan State Hospital on February 1st, as suffering from manic depressive insanity. This was a provisional diagnosis made by Dr. Sydney Russell Wells, a general practitioner, who treated him for an attack of mania in London some years before. The experts for the defense in the two trials gave no diagnosis as to the form of insanity.

In April, 1908, he obtained a writ of habeas corpus, which was returned at Poughkeepsie before Justice Morschauer. This writ was denied and he was remanded to Matteawan. In July, 1909, another writ was obtained. This proceeding was held before Justice Mills, at White Plains. The writ was denied, and Thaw was again remanded. In a third proceeding, held at White Plains before Justice Keogh, in June and July, 1912, Thaw has been again remanded to Matteawan on the ground that he is still insane and that his discharge would be dangerous to the public peace and safety.

In the habeas corpus proceeding held at White Plains before Justice Mills, in July and August, 1909, it appeared from the testimony of Mrs. Susan Merrill that Thaw had rented part of an apartment from Mrs. Merrill under different names (Reed, Munroe, Johnson, Smith) "for business purposes; and that he placed and was placing young girls on the stage." He rented two rooms in this apartment in the winter of 1903-4, and kept them until early in 1906. "Said he was engaging girls to go on the road in show business and some he sent to school and others instructed himself. Said he would have lots of company and to keep the callers separate. Then my wife will come this afternoon and I (Mrs. Merrill) must never have any conversation with her."

The witness, Mrs. Merrill, also testified that he would have eight or ten girls in the dining room "and he would beat one of them with a whip, sometimes they would run out of the room crying and screaming and then I used to go into the room and save the girl. . . . I have seen those poor, young girls all welts and bruises from his whipping, and I asked them why they allowed it, and they said we are working for him, he is going to get us on the stage, if we lose our place why he won't pay us."

According to the testimony, these scenes—and worse—were of frequent occurrence. "One day in February, 1906, he had a young girl call who looked not more than fifteen years old, asked for Professor Reed; he was out, but had 'phoned me he expected this party to call and to keep her waiting; so he came in and after a little while I heard terrible screaming. I went and knocked on the door and said I would break the door down, so he opened it. The girl's clothing was all torn and she was all cut on the arms. He rushed out into the back and jumped through the window and got away."

The witness further testified that after one of these flagellations "I told him never to come back to the place again, and he said, Mrs. Merrill, if you ever tell this I (will) kill you, and I did not see him

again for months. But he sent a messenger boy with some money, \$500, to pay all the young ladies, and told me to not give any one less than \$25 or more than \$100, which I did, and to keep an account of it." This testimony was given before Justice Mills, in August, 1909, and was repeated before Justice Keogh, in July, 1912.

In the opinion of Justice Mills, filed August 12, 1909, he says that the relator "engaged in practices of a perverted character, as revealed by the testimony of the Merrill woman, which, with the corroboration afforded by other evidence in the case, appears credible."

It is not necessary to go further into the testimony of Mrs. Merrill to show that Thaw is a pronounced sadist according to the definition of Régis already quoted. Either her testimony was substantially true or it was a complete fabrication entirely without ascertainable motive. The latter idea seems inconceivable. In the proceeding before Justice Keogh, Mrs. Merrill was a violently unwilling witness.

Not the least interesting feature in the case, from a scientific point of view, is the picture of a paranoiac, possessed of the delusion that he had a sacred mission to protect and rescue young girls from a band of powerful and wealthy debauchees, and that, in committing the murder, he was an instrument of Providence, in the person of a sadist, who lured innocent young girls to him by advertisements, in order to obtain sexual gratification by flagellation and at the cost of their degradation. As such, this case, in its completeness, stands alone in the annals of psychiatry. One must, however, feel regret that the misguided efforts of relatives, aided by the best available legal ability and by expert testimony that many think open to unfavorable criticism, to set loose a highly dangerous lunatic, have brought to light the shocking details of this notorious case, however great their scientific value. It is with such a feeling that the last part of this article has been written; and as a matter of charity, much has been left unsaid.

118 EAST NINETEENTH STREET.

ECLAMPSIA.*

How Shall We Treat It Most Effectively in General Practice?

By GEORGE W. KOSMAK, M. D.,
New York,

Attending Surgeon, Lying-In Hospital.

The author of this paper feels that he ought to present an apology by way of introduction to a subject apparently so hackneyed that it can no longer be regarded as a novelty in the proceedings of medical societies, yet we must acknowledge that notwithstanding the efforts which have been made to solve the problem of eclampsia, we are still undecided as to the exact cause of this unfortunate and serious complication of pregnancy. Consequently our treatment has been, and in many respects is still symptomatic if not empirical.

Eclampsia has been well designated as a disease

of theories, and in order to appreciate the necessity of instituting appropriate methods of treatment a brief review of certain modern conceptions of this disease seems opportune at this point. It may be said in the beginning, however, that the term itself is a misnomer and that a signal advance in the conception of the disease would be gained by disregarding the term "eclampsia" entirely. The word refers to the sudden and characteristic onset of a single symptom, the convulsion, and from what we know of the disease at the present time, the convulsive seizures constitute but one of the numerous evidences of this condition. Eclampsia is a manifestation of those serious disturbances in the organism resulting from pregnancy, which are generally spoken of as toxemias, and are believed to be due to the circulation in the maternal blood of some special toxic substance resulting from disturbed metabolism and improper elimination. Whether this conception is a sufficiently large one remains to be seen, but the results of the experiments of nearly all investigators who have been working in an attempt to elucidate the question, seem to point in this direction. When the disease was first studied as an entity, it was generally believed that the kidneys were at fault, because albuminuria and urinary casts were present in almost all the cases. Later on it was found that this was not sufficient to explain all types of the disease, and then the liver was regarded as the source of the trouble. As the science of hematology became developed, it was believed that the toxic substances circulated in this medium and that the liver and the kidneys became affected only secondarily. It would appear from numerous apparently well authenticated observations, as if an error in ferment production was probably at the bottom of the trouble, but exactly where this takes place we are by no means certain. The placenta, the decidua, the thyroid gland, the breasts, and the liver have all been accused, but thus far the accusations have not been definitely proved for any of these organs. However, our knowledge of the process, although to some extent speculative, is sufficiently complete to dictate a fairly rational method of treatment in this condition. Proper elimination is one of the most necessary requirements and seems to be the essential feature in the therapeutics of the disturbance. This applies, not only to the treatment of the acute condition, but also to the preventive measures. Prophylaxis is obviously the important feature, and sufficiently early recognition of the impending symptoms of eclampsia ought to be a matter of ready knowledge, not only by the physician but also by the patient. If pregnant women with toxic manifestations were seen sufficiently early and their condition recognized, the number of fatal cases of eclampsia would be largely diminished.

How shall we therefore proceed with a reasonable treatment of eclampsia? Let us begin by reviewing briefly some of the symptoms ordinarily met with in this disturbance of pregnancy. They may be divided into premonitory signs and the established symptoms. Premonitory signs are often indefinite, yet in every instance in which they are present the patient should be carefully observed

*Read at a meeting of the Medical Society of the Borough of the Bronx, May 8, 1912.

and warned of the possibilities of trouble. It is still a debated question whether the toxemias of the earlier months of pregnancy, most commonly characterized by a hyperemesis, are similar to, or identical with those met with in the later months, in which degenerative processes and convulsive seizures are commonly associated. Recently acquired experimental findings seem, however, to point in this direction. As it would add greatly to the length of our paper, the former class of cases will not be considered and we shall devote ourselves entirely to the later months of pregnancy.

There are several predisposing features that may lead to the production of eclampsia in one or more of its commonly accepted manifestations. A patient with twins or hydramnios, an elderly primipara, a woman with previous arterial or kidney disease, are all more likely to develop toxic manifestations during the latter months of their pregnancy and should accordingly be carefully watched. It is usually considered sufficient by the patient and also, unfortunately, by the physician, to limit the attention extended before labor, to an occasional examination of the urine for albumin and casts, and if neither of these urinary abnormalities is found, the patient is considered normal. It is known, however, that the absence of these urinary findings is not in any way conclusive and numerous cases of eclampsia result in women who have had no evidences whatever of renal irritation. It is much more important to examine the urine for acetone, indican, diacetic and oxybutyric acids, variations in the specific gravity, and reductions in the daily amount, than to test merely for albumin and casts, as the former evidences of insufficient elimination through the bowels afford us more definite and reliable signs of danger than the latter. This leads us to regard the intestinal tract as the point from which danger signals are sent out long before the other organs, such as the kidneys, become affected. Where these urinary signs are accompanied by constitutional symptoms, such as malaise, ready fatigue, mental dullness, slight headaches, or visual disturbances, then we have come to the point where the patient demands our immediate advice and attention. If these evidences of disturbed metabolism can be got rid of by removing their cause, the chances for the patient going through her pregnancy without further trouble are greatly favored. In order properly to treat such a condition, it is necessary to regulate not only the outgo from the body, but also the intake. Thus, not only must we favor elimination from the intestinal tract by proper cathartic measures, but also reduce the chances of intestinal fermentation through decomposition, by limiting the amount and character of the food. A patient who presents an indicanuria of moderate degree, with or without diacetic acid and a trace of albumin present, even if she does not make any further complaint, should at once be subjected to eliminative treatment. The question of cathartics in these cases should be carefully studied and those drugs given which will insure not only an immediate evacuation but a continuance in the process of elimination. In every instance, the patient herself must be taken into consideration and a slight, anemic, worn out woman ought not to receive the

doses which are indicated in a stout, plethoric, and otherwise well nourished individual. Constipation is the *bête noire* of obstetrical practice, as in every other branch of medicine, and treatment must be rational and intelligent in order to be effective.

The best results in this particular class of cases are probably obtained from calomel. From one grain to five grains, depending, as before said, on the individual patient, may be given in divided doses of from one eighth to one half grain every half hour, followed the next morning by a glass of citrate of magnesia or a dose of salts (Rochelle or Epsom) or one of the numerous saline cathartic waters to be found in the market. Calomel and salts is a combination that seems particularly effective in these toxemias of pregnancy and it is advisable, in case the urinary conditions do not clear up satisfactorily within a few days, to repeat the dose and continue the same at weekly or biweekly intervals if necessary. Notwithstanding the tendency that pregnant women have to pyalism, I have never observed a case of mercurial salivation, even where the drug has been given continuously for a number of weeks. In addition to this, the patient should always be directed to take an enema as soon as possible after her visit to the doctor, as the lower bowel is thus effectively emptied and the force of the cathartic measures need not be wasted in this direction.

In order to maintain a satisfactory elimination from the intestines, the food supply must be cut down, and if these patients show any tendency to a continuance of the metabolic disturbances as shown by the urine, certain proteid articles of diet, such as meat and meat extracts in the form of soup, must be eliminated and the patient directed to subsist on milk, eggs, and plenty of thoroughly cooked cereals and vegetables with a fair amount of water daily.

Elimination must not only be directed toward the intestines and kidneys, but should also be favored through other natural channels, namely, the skin and the lungs. This means that such patients should be directed to get a certain amount of outdoor exercise daily and sleep in a thoroughly ventilated room. The skin may be kept in good condition by warm, rather than hot baths, taken not less than two or three times weekly, the patient being directed to remain in the bath for at least twenty minutes so that a gentle perspiration may be induced, which is favored by drinking a glass or two of water before taking the bath. I have taken up these apparently simple directions rather in detail because it is important to ward off, if possible, the more severe conditions that will result if the evidences of toxemia in pregnancy are not recognized in time and properly combated.

If the patient does not improve as the result of these measures, it will be necessary to resort to more radical procedures. This necessity should be guided entirely by the signs as found in the urine and also the patient's general condition. If the evidences of renal irritation and intestinal decomposition continue to be present in the urine, if the headaches and symptoms of this kind continue, if the skin remains dry, if the pulse tension becomes increased, we may still ward off the final convulsive seizure by appropriate treatment. In this, which may be regarded

as the intermediary stage, the patients should be placed on a very restricted diet, including milk in any style and form agreeable to the patient, well cooked cereal gruels, eggs, and toast. A woman in this condition had better be kept in bed and free from all household worries and anxiety if it is possible to attain this condition. We must also resort to more strenuous catharsis in these cases and, in addition to the calomel and salts, the continuous administration of other cathartics is indicated, including cascara, phenolphthalein, compound licorice powder, castor oil, etc., supplemented by daily enemias of soapsuds, containing glycerin if necessary. It is not essential as a rule to attack the increased pulse tension with arterial dilators, because this is to a certain extent physiological and a greater force is needed to pump the blood through the various organs from which elimination takes place. If the proper degree of elimination has been attained, the pulse tension in such cases will usually take care of itself and unless there is some degree of actual organic endarteritis present, it is not customary to administer arterial dilators. The hot bath should be given at more frequent intervals, that is, once or twice daily, and if used properly at a temperature not high enough to produce exhaustion, very good results will be obtained. If the proper assistance can be had, the application of a hot pack once daily is an excellent substitute, the patient being left in the hot wet blankets for half an hour and then in a hot dry blanket for one hour. If edema of the ankles or the vulva is at all marked, the quantity of fluids administered should not be excessive, as their absorption will only increase the work of the heart.

These patients are usually in the eighth month of their pregnancy and if no improvement results, we must always regard the possibility of being compelled to induce labor to relieve their condition. While this is not to be regarded as a routine measure, it should not be delayed too long if the response to the treatment already indicated is unsatisfactory. This phase of the subject will be considered later on.

The third and final stage of the disease is a much more serious one, and in most instances the clinical symptoms are accompanied by actual degeneration in some of the organs involved, including the liver, kidneys, spleen, and bloodvessels. The symptoms which characterize this stage, which may be regarded as the real eclampsia, are of two kinds. They are either very sudden in their onset, and a convulsive seizure is the principal manifestation, or they may be marked by a gradual or steadily increasing state of coma, such as we meet with in diabetes or chronic nephritis. The diagnosis in the first class of cases is usually easy, as the convulsion which is the characteristic of this disease is readily recognized. It needs to be differentiated, however, from a similar phenomenon due to hysteria, epilepsy, or other nervous state, but as a rule the diagnosis is not difficult. The type of eclampsia in which the convulsion is the prominent feature is that commonly met with, and the convulsion may attack the patient without any previous warning, although in most instances a careful subsequent inquiry will show that the patient has had some of the preliminary symptoms to which attention has

already been called. The appearance of the convulsion is usually productive of great excitement on the part of the patient's family, and, unfortunately, this excitement often manifests itself in a tendency to do something very radical by the physician who may have been called in. The therapeutic desideratum seems to have been to relieve the uterus of its contents at the earliest possible moment and by the most rapid means. Unfortunately this has led to operations and operative deliveries that are not always in the best interests of the mother, notwithstanding the apparently favorable statistics which have been adduced. It is asserted by many that the appearance of a single convulsion, for example, is sufficient cause for doing a Cesarean section, abdominal or vaginal. Now there is no doubt that rapid delivery is essential to the welfare of both mother and child, but we must not forget that, at least as far as we know at the present time, the convulsion is merely a single symptom of a severe toxemia and we ought to guide our treatment in the direction of sedative and eliminatory measures, as well as early delivery, in doing the latter, and to avoid shock as much as possible. The entire nervous system of the woman at this time is in a very unstable condition and the disturbance in the cerebral circulation is such that we may have not only the evidences of cortical irritation such as the familiar convulsions, but also hemorrhages in any and all parts of the brain. The first thing to do, therefore, is to insure absolute rest, which reduces the tendency to convulsions; and then to overcome the arterial spasm which helps to avoid the liability to fatal hemorrhages. The patient should therefore be placed flat on her back in a room darkened and free from noise; warm, but liberally supplied with fresh air.

The clothing should at once be removed and the patient subsequently handled as little as possible. Before this is done, the physician who arrives at the case should immediately give the patient a hypodermic injection of morphine, not less than one fourth or one third of a grain. No attempt should be made to stop the convulsive seizure with chloroform, as the administration of this drug seems to favor degeneration in both kidneys and liver. Moreover, if given during the attack, very little chloroform is inhaled, because the patient is usually holding her breath at this time, and subsequently the deeper respirations will cause the woman to inhale very much more than is good for her. As soon as the patient has been quieted, attempts should be made, in the first place, to stimulate the eliminatory functions and, in the second place, to secure delivery. The treatment which I am considering is that applicable to the patient in her home, and although in every case where this is possible she should be sent to a hospital, the alternative handling of a case is possible and often successful. A good routine to follow in such instances is the following:

After having done the things just noted, the patient receives at once an enema of soapsuds, and this is repeated if necessary until a thorough evacuation of the bowels has been secured. If the patient is conscious, the stomach may be washed out if the attendant is sufficiently prepared and skilled to do this. In any case, two table-spoons of Epsom salts

dissolved in a glass of hot water should be given by mouth, if the patient is conscious, or through the stomach tube if necessary. While this has been done, steps must be taken to favor elimination from the skin. The patient should be wrapped up in blankets wrung out in hot water of a temperature of at least 120° F. and kept in these blankets until the perspiration has become free. Then hot packs may be kept up for periods of half an hour or more and repeated every two or three hours as the case may demand. An hour or so after the magnesium sulphate has been given, twenty grains of chloral may be administered by mouth, or from thirty to forty grains by rectum, in order to maintain a sedative action, and repeated in ten grain doses or more every four hours subsequently. Rectal irrigations are very effective in some of these patients, but we must be guided by the individual case in administering them. If considerable edema is present, it is not advisable, as already stated, to introduce any more fluid into the system until what is already there has been taken care of, so that it is better to delay the irrigations until some of this fluid has been drained away through the bowels and skin. We may stimulate the action of the kidneys by colonic irrigations, and these may be started as soon as the bowels have been thoroughly cleared out with enemas. The fluid to be used for this purpose is preferably a normal salt or sugar solution. If irrigations are employed, not less than four gallons of solution should be made use of and this should be administered through a rectal tube attached to a fountain syringe, held about two feet above the patient's head. If the patient is turned on her left side the flushing of the colon will be very much facilitated. The irrigation may be given while the patient is in her hot pack and is, I believe, one of the most effective methods which we have of increasing the elimination of toxic materials from the skin, bowels, and kidneys. It can usually be done without difficulty and does not require any apparatus that cannot be had in the average household or secured from the nearest druggist. Some time during these procedures the patient may be examined vaginally and the condition of the cervix determined. An attack of eclampsia usually comes on some time between the seventh and the ninth month, and as a general thing we do not find any evidences of labor present, but labor is one of the natural results of eclampsia, and efforts directed to the induction of the same are often surprisingly successful.

If the cervix is soft and dilated beyond two fingers, the membranes should be ruptured, then full dilatation procured, and the child extracted by version. This secures, in most instances, a living child and immediately reduces the tendency to shock and irritation, but we are rarely fortunate enough to meet with a soft and dilated cervix in these cases, and steps must be taken to secure dilatation of the cervix by manual or operative means. When called to a case in which we are not provided with anything but our hands, a finger may be introduced through the canal in almost every case, followed in time by the others, and the cervix stretched in the well known manner advocated by Harris. If the patient's convulsions are controlled and the elimina-

tion is properly being taken care of, there is no reason why an hour or more may not be taken to dilate the cervix and complete the delivery by forceps or version as conditions may indicate. If the physician called to the case has sufficient confidence in his abilities, the anterior lip of the cervix may be incised with the scissors, likewise the posterior lip, which will secure a more rapid dilatation than by the slower manual methods. In extracting the child in these cases, however, care must be taken not to tear the lower uterine segment, an accident which is very liable to occur unless provided against. In cases where a single slight convulsive seizure has occurred, or where the symptoms point to toxemia of mild degree, dilatation may sometimes be secured by rubber dilating bags, unless it is necessary to employ a more hurried means of delivery.

In the treatment of eclamptic patients, the high tension pulse has always been regarded as a symptom requiring energetic treatment. Veratrum viride and nitroglycerin are the drugs most commonly advocated for this purpose. Veratrum viride is the standby of a great many American practitioners, particularly in the Southern States, and the drug has obtained great vogue among those who have employed it. The tincture of veratrum viride, given hypodermically in five drop doses at stated intervals until a reduction in the tension results, is the usual method of administration, but its effect is probably too uncertain and marked to recommend its employment as a general routine procedure. The physiological effect of veratrum viride on the system is apt to be cumulative in character, and the marked depression which often results may not be easily recovered from. Nitroglycerin, on the other hand, is much more evanescent in its effects and may be quite safely given in every instance where the blood pressure is high. As the effect is more or less transitory, the drug must be given in larger doses than usual, and a safe scheme to follow is to administer by hypodermic, one fiftieth of a grain or two minims of the spiritus glycerylis nitratis, every twenty to thirty minutes in severe cases, until the pulse tension begins to diminish, when the injections may be made at longer intervals. In this connection, attention may also be directed to the fact that the hot packs, by inducing a free perspiration, will do much to relieve the high pulse and therefore the arterial dilators need not always be pushed.

A palliative method of treating eclampsia which has obtained great vogue is that developed and advocated by Stroganoff, of St. Petersburg, whose results with its employment are certainly noteworthy. Stroganoff summarizes the principal points in the prophylactic treatment of eclampsia under the following headings:

1. Avoidance of every external irritation.
2. Treatment of the attacks with narcotics, of which he employs morphine and chloral in alternating doses, beginning with .015 gramme (one quarter grain) morphine hydrochloride subcutaneously, followed in an hour by two grammes (thirty grains) chloral hydrate by mouth or rectum. Three hours later the morphine is repeated, and seven hours later the chloral hydrate. In thirteen hours twenty

grains of chloral hydrate is given and this dose is repeated twenty-one hours later.

3. Rapid but not forcible delivery.

4. Stimulating the respiration with fresh air and oxygen; the heart, kidneys, and skin by the methods already referred to.

At the present time the operative treatment of eclamptic cases has been very extensively urged and the surgical pendulum has swung very far in this direction. Now it is not to be denied that in most cases of toxemia of pregnancy, at or near term, labor or delivery should be induced as soon as possible, but this should not be done without considering the effect on both mother and child of the particular procedure employed. In the earlier cases, where the eclamptic attack comes on during the seventh or eighth month, the cervix is usually rigid and not easily dilatable, and it is in these cases that the vaginal Cesarean section has apparently found a wide field of application. Notwithstanding the apparent ease of its execution, such a serious operation should not be attempted except in a hospital with skilled assistants, or unless these conditions can be duplicated in the home. It is not wise, however, universally to recommend vaginal Cesarean section in eclampsia without recourse to some of the less radical methods of treatment, because the infant in such cases is often premature and hardly likely to survive its delivery for any length of time. Within recent years a great many cases have been reported in which even after an eclamptic convulsion occurred, the patient was tided over this stage and went on to term without any bad results, either to herself or her infant. At the time when the convulsive seizure takes place, the toxic substance or substances, whatever they may be, are circulating throughout the body of the mother and it is useless to suppose that hurriedly delivering the patient will relieve her toxemia at once. It is very probable that some of this relief is due to the blood which is abstracted during the operation, and a number of writers who have investigated this subject advise venesection as one of the essential features in the treatment of eclamptic convulsions. The vaginal Cesarean operation is not a simple operation, as a reference to the cases reported by others than enthusiasts will show, and we should therefore hesitate before recommending such a procedure without carefully considering the indications. Where, as in a primipara, the vaginal canal is not dilated and the uterus is high up, it will often be a difficult matter properly to approach the site of operation and to suture the resulting wounds afterward. If the patient is at, or near term, the abdominal Cesarean operation should always be considered in these cases of equal value with that conducted through the vaginal route, and particularly where the child is large, or a twin pregnancy is present, combined perhaps with some slight pelvic contraction, the abdominal route should be thoughtfully considered as a means for delivering the patient.

In summarizing these remarks, I want to call attention again to some of the particular points made in this paper. In the various suggestions for the treatment of this condition to which I have referred, I have taken into consideration the cases as they

are met with in general practice, where the attending physician may be compelled to handle the case without much assistance or the benefit of hospital facilities. Although it is always advisable to have eclamptic patients brought to an obstetrical hospital for treatment, where consent can be obtained, yet there are a number of life saving measures which may be employed where this is not possible, and these may be sufficient to turn the balance in favor of the patient. Not every case of eclampsia needs an operative delivery, but the attending physician should always be sure of his ground, and there is no condition in pregnancy in which expert advice and assistance is more urgently needed than in these cases of toxemia of pregnancy. This also applies to the hospital treatment of such cases, and although the latter is a great desideratum, much may be done by the attending physician which will possibly and probably save the patient's life. A great number of other therapeutic measures have been suggested for the treatment of this condition, many of which are undoubtedly of value, but none of them have been sufficiently proved to attempt their inclusion in a general statement of the disease as that here briefly sketched.

It is well to remember that although the toxemia of late pregnancy is a most serious complication, yet much can be done to avoid the onset of the disturbance and also to treat the same when it is already present. It is essential that a proper knowledge of its etiology and clinical course be in the possession of every practitioner and the treatment directed not to any one manifestation of the disease, but to all. Unfortunately, the onset of convulsions is often regarded as the absolute death knell of the patient and discouragement is the usual keynote which dominates the aspect in which the disease is viewed. Taking into consideration, however, the fairly good results which have been obtained with the various methods of treatment, both prophylactic and curative, the prognosis seems very much more favorable now than in the past.

23 EAST NINETY-THIRD STREET.

MODERN OCULAR SURGERY.*

By T. J. MORAN, M. D.,
Pittsburgh,

Clinical Surgeon, Eye and Ear Hospital, and Pittsburgh Hospital.

During the last half of the nineteenth century to the present day, advancement in ophthalmology and ocular surgery as one of its phases, is perhaps, although not generally known, without a parallel in modern science. Until the discovery of the ophthalmoscope by von Helmholtz, in 1851, and its perfection by others since, absolutely nothing was known of the ante mortem physiological or pathological changes of the interior of the eye. It was truly a science in infancy.

The invention of the ophthalmoscope marks the epoch of definite scientific investigation, going by a single leap, so to speak, from the realm of mere speculation to that of accuracy. By its use a com-

*Paper read before the Cuyahoga County Medical Society, Lisbon, Ohio, May 14, 1911.

plete panorama of formerly undreamed of possibilities and many hopeless looking cases of incurable disease of the interior of the eye, are brought to instant view. Many of these cases are now known to have been but an expression of the inaccuracy of the science antedating its invention.

Before its day, only external manifestations were apparent to the most skilled observers, and the myriads of other cases of failing and reduced vision, and even blindness, without external manifestations, were assigned under two general heads, white and black cataract.

White cataract covered the cases of actual cataract as known to-day, the opaque lens appearing milky through the pupil. Black cataract included the innumerable cases of poor vision and even blindness, in which the pupil retains its usual black reflex.

The ophthalmoscope anticipates even the milky pupil of the so called white cataract and shows it, in its incipience, long before any changes can be noticed in the pupillary reflex by the unaided eye. Its real sphere, however, is in the cases of so called black cataract. Here it is, the curtain of ignorance has been raised for all succeeding generations. Consider with what dread a patient consulted an oculist before its use! A verdict of white cataract meant possible relief by operation; but a verdict of black cataract meant vague hopelessness, vision rapidly failing perhaps, no explanation possible, no means to stop it or prognosticate the final outcome, and the horrible expectancy of inevitable blindness.

A case seen recently illustrates this point.

CASE I. A mother brought her little girl, twelve years of age, for examination, saying the child had attended school regularly, until under the present system of inspection, the school physician found she could scarcely see with the left eye. Externally the eye was absolutely normal to all appearance the same as the right. The ophthalmoscope, however, showed a degeneration of the interior, following an old rupture of the chorioid. The vision of this eye was limited to fingers at one foot distance. The right eye, on the other hand, was perfectly sound and had normal vision. The mother, on being questioned further, remembered that the child, when two years of age, had struck itself in the left eye with a shoe buttoner, which explained the very evident traumatic origin of the rupture. The mother's fear of blindness for this child and the possibility of the same for her eleven other children, due to some unknown cause was pitiable, but was dispelled at once when she was assured that the poor vision of this left eye was of traumatic origin, and would in no way affect the right eye.

This assurance to the mother, as you can readily imagine, was worth every effort and moment of time that investigators have spent in the perfection of the ophthalmoscope. Many conditions formerly regarded as hopeless, yield now to medication and surgery, and ophthalmology advances daily towards scientific perfection, by its use.

Conditions inoperable and incurable, by human agency, have been the experience of past observers, and the most optimistic mind will hardly exclude them for the present, or predict their exclusion for the future. With this in view, however, ophthalmology may still be considered a definite science, since these cases can be recognized as such, positively and accurately beforehand. The same holds good in ocular surgery. The means for diagnosis and relief are at hand and have forced definite and accu-

rate operative procedures. To enumerate the more important of these is the aim of this paper.

Before the day of Albrecht von Graefe, 1855, an exquisitely painful condition attended with reduced vision, at times blindness, due to increased intra-ocular tension, termed glaucoma, was easily recognized by simple palpation of the tense eyeball. The diagnosis was easy, the condition desperate. Cases were reported even in which patients tore their eyes from the orbits. Yet it remained for this genius to conceive the idea of iridectomy, giving instant relief and in many cases complete restoration of sight. To my mind the glaucomas attended by such phenomena were the most terrible of the so called cases of black cataract.

Iridectomy is frequently practised to-day; it has been further elaborated for chronically recurrent iritis and iridocyclitis, when due to adhesions, conditions almost as painful as acute glaucomas. Iridectomy has been further evolved into iridotomy, or the making of an artificial pupil in an eye rendered blind by obstruction of the normal passage of entering rays of light.

No claim is made for absolute or positive results in any ocular operation; the prognosis, however, is now a matter of judgment always, and not speculation. It is interesting to note, however, that chance was the factor in many cases, that brought this about. Cataract extraction itself was a matter of accident. The principle of the old method was luxation of the cataractous lens backward into the vitreous. Gravity in the erect posture was then depended upon, to carry it below the line of entering rays of light through the pupil. As early as 1708, however, Jean Lewis Petit made a section of the cornea to remove a cataractous lens, that had accidentally luxated forward through the pupil, into the anterior chamber. The principle thus indicating extraction Petit failed to realize, and it remained for Jacques Daviel, in 1745, to apply it. He accordingly made a corneal section as Petit had done, luxated the lens forward through the pupil, as had previously accidentally happened, and then extracted it through the corneal section. This eye was lost by infection but the principle was fully realized.

Pressure inflammation was a common occurrence, and panophthalmitis was not infrequent, after luxation by the old method; enucleation even was often the outcome. Extraction as practised to-day and elaborated by iridectomy and iridotomy, has rendered the technique of this procedure so accurate and uncomplicated, that results, barring infection, are a matter of execution only. In selected cases, extraction may be done without iridectomy or iridotomy. This is the ideal operation because the results are cosmetically perfect, leaving a round, normal appearing pupil. The Smith extraction (in capsule) is a very progressive idea, and with a definite technique will mark a further advancement in extraction.

In progressive corneal ulcers, decisive and radical procedures have taken the place of antique medication. The danger of these spreading over the entire cornea, and coalescing with it, rendering it entirely opaque (hopeless blindness), or perforating

with prolapse and other sequelæ, is minimized and practically eliminated by the early use of the electric cautery.

No less radical or decisive are the measures taken in inflammatory conditions of the lacrymal duct. The constant influx of foreign matter deposited on the eyeball, is washed off by the secretions of the lacrymal glands, collected in the lower inner angle of the conjunctival sac, and drawn into the lacrymal duct by suction. It is excreted into the nose. This is in reality nothing more than a sewerage system, and most important in extraocular conditions, both in health and disease. The extirpation of the duct is, at times, indicated; at other times it is a matter of choice.

A duct exhibiting a discharge, in which drainage into the nose cannot be reestablished, should be removed, whether further operation is contemplated or not. This statement is decidedly conservative, I think, in view of the fact that a coincident corneal abrasion, even that produced by an imbedded dust particle, may result in corneal ulceration, from such secretion. Extirpation is a matter of choice if the duct gives rise to any suspicion, preceding a further contemplated operation on the eye.

The question is asked, "What becomes of the lacrymal secretions, when their outlet is thus removed?" Nature then generally intervenes with a compensatory atrophy of the lacrymal gland. Some operators prefer to combine the extirpation of the duct with that of the gland. My practice is to the contrary. The extirpation of a duct is somewhat tedious, but must be thorough to insure results.

Radical treatment for these lacrymal affections has been, and will, I suppose, be severely criticized, but only by operators, who content themselves with an incision down to the duct and then extract it piecemeal with scissors and curette. Removal of the duct *in toto* heals by first intention and leaves a small linear scar, about one half inch long, the width of a pin, and absolutely unnoticeable two weeks after operation.

An erroneous idea is broadcast in regard to operation for crossed and divergent eyes. The impression seems to prevail that a good result in such procedures is a matter of mere chance. This view is not confined to the public alone, the profession at large sharing it to a great extent. The deduction has been logical enough perhaps, for it is a certainty that some after results have been much worse than the original condition. The explanation for this is not difficult.

A tenotomy regarded from the standpoint of procedure is the simplest in ocular surgery. From the standpoint of indication, however, with a view to its accuracy, it ranks second to none. This latter fact is what has often been lost sight of, and a muscle has been tenotomized, when its antagonist should have been advanced, also *vice versa*. Again, the amount of convergence or divergence, and other factors too numerous to mention have been disregarded. Take an illustration: A free tenotomy of the internal rectus muscle, with a normally counteracting external rectus, produces, at puberty, about fifteen degrees of correction. Suppose a child had but ten degrees of internal squint, such

a section of the internal rectus would, it is evident produce a divergence of five degrees at once; and following the well known fact, that a result after tenotomy increases rather than diminishes, the divergence would become still greater as the child grew older. An eye in other words that had turned only slightly inward would be now very much outward, and worse from a cosmetic standpoint. Results of this sort have been called unfortunate, and indeed they are, but charity only prompts such a lenient view; otherwise, it is a reflection on ocular surgery. Splendid muscle work can be, and is being done for both internal and external squint, and poor results in selected cases reflect on the operator alone.

At Vienna, in the spring of 1910, I had the unusual opportunity of seeing Dr. Hans Lauber, of the Schnabel clinic, do a transplantation of the outer halves of the superior and inferior recti muscles, to the tendon of external rectus, for a case of paralysis of the latter. He told me five such cases were on record; two or three successful, with power of abduction fully restored. He ventured no explanation to my query "How could the same muscles be innervated for elevation and depression of the eyeball and again, their outer halves conjointly innervated for abduction?" In tenotomies the aim must always be for undercorrection of the convergent or divergent eye at the time of operation, and the undercorrection can be produced and maintained by a counteracting suture.

In advancements we aim at overcorrection at the time of operation, and it is maintained by the same method, the tendency, in advancements, being to diminish.

It seems almost criminal that parents should allow their children to arrive at maturity with defective muscular conditions, in view of the simple, sane, and safe procedures for their correction; also from the fact, that vision in these eccentric eyes becomes impaired from disuse, which may often be regenerated to the normal if corrected before the retina becomes inactive.

Ocular surgery is perhaps most enhanced by the substitution of local for general anesthesia. Any and all operative procedures may be painlessly done under cocaine, and are practically bloodless if this is combined with adrenalin. This fact you would appreciate had you had an experience similar to my own.

CASE II. Jerome S., aged sixty years, gave following history, March 23, 1912. Right eye wounded during Civil War and blind since. Had never given any trouble until the last three weeks. During this time it had been red, irritable, and painful. The left eye had always been good. Patient had worked regularly, as train telegrapher, using glass for reading only, until December, 1911 (three months before). At that time, vision was suddenly lost in this eye, patient being absolutely blind. Under treatment vision had partially returned and he could now count fingers at a few feet.

Examination showed the right eye blind, complicated by a low grade of iridocyclitis (inflammation in a blind eye, absolutely indicating enucleation). Left eye was normal to external appearances. Ophthalmoscope showed a recent hemorrhage into retina, only partially absorbed.

Physical examination revealed a general arterial sclerosis, with blood pressure over 200. Family physician confirmed this, stating that the patient had a chronic nephritis in the contraction stage.

The retinal hemorrhage was explicable by high blood

pressure and weakened sclerotic vessels. The danger of a recurrence of hemorrhage into this eye, with probable blindness, and the physical condition of patient, both contraindicated general anesthesia. Still enucleation was absolutely necessary. Patient readily consented to the removal of his right eye, insisting however on ether, as these patients generally do. This was agreed to, but never even momentarily considered.

The left eye was bandaged to exclude the possibility of his seeing what was being done. The right eye was thoroughly cocaineized; and the orbital ganglia were injected with one per cent. cocaine under pressure, we explaining meanwhile what was being done was a preliminary necessity before giving the anesthetic. The right eye was now quickly removed. The patient was then asked if ready for ether, and upon saying yes, was told, to his absolute surprise, that his eye had already been removed. Further, he was able to walk from the operating table to his room, suffering none of the disagreeable after effects of general anesthesia.

This case I have told in detail to show the ease, painlessness, and rapidity with which an eye can be removed under cocaine, in contradistinction to the responsibility a surgeon would have to accept, in such case, were a general anesthetic administered.

I have said, as yet, nothing in regard to prophylactic technique, for the simple reason that this feature while carried out along definite lines, is as varied as the operators themselves. Nevertheless its importance is no less than that of the operative procedure.

The following has in a general way become adopted. Sterility of the conjunctival sac is aimed at by medication for several days prior to operation. The day before the patient is admitted to the hospital, the eye is washed externally with tincture of green soap, and rinsed with sterile water. The lids are everted and the conjunctival sac is cleansed by one to 5,000 bichloride and saturated boric acid solution. A dry dressing is then applied, to be removed and inspected by the operator himself preceding the operation. If no secretion is found, then the same procedure is repeated. The operator and assistants wash their hands for five minutes with tincture of green soap and running water, followed by a bichloride dip, and then a rinse in alcohol. Cap, face mask, and gown are worn. The head and shoulders of the patient are covered by sterile towels, and a wet square of gauze with an eyehole in it for operative field is placed over patient's face.

The unoperated eye may, or may not, be closed off. An eye speculum for holding the lids apart is now never used when a section of the eyeball is to be made. The assistant holds the lids and immediately following the section, allows them to close, thus splinting the wound and supporting it. This is very important if there is a tendency for the vitreous to prolapse.

All instruments are boiled, except knives, scissors, needles, etc. These are placed in alcohol to protect their cutting edges. A technique of this sort renders the operative field as aseptic as known antiseptics will permit. It must not be forgotten, however, that even with all aseptic precautions, as just noted, a direct avenue of infection is always constant, by way of the lacrimal duct and canaliculi, from the nose to the conjunctival sac, unless, as previously pointed out, it has been extirpated.

In conclusion, I wish to emphasize the importance of the general practitioner working in harmony with the specialist. The best results for the

patient are obtainable in this way only. The school inspection system of Pittsburgh for the last eighteen months has made this very apparent. Thirty physicians examine the pupils daily, a symposium before the Academy of Medicine last month developing these facts.

The pupils pass the physician in single file, daily, holding up their hands; a general inspection of the exposed parts is thus had for skin lesions, etc.

Children are seen in the alphabetical order of their names for private examination, errors of vision are noted, smears of nose and throat are taken and sent to the board of health for laboratory analysis and so on. An individual card is made, noting all physical and pathological defects. When a child is deficient, a notice is sent to the parents, stating what the ailment is, and instructing them to have it corrected. The family physician is directly benefited by consultation for general disorders in their incipience, and the specialist, too, but most of all the child itself is aided.

Some one has said that a physician should be paid for the number of people well in a given neighborhood, instead of the sick, and such would be the ideal system and quite feasible did people consult him for prophylaxis instead of for cures.

FULTON BUILDING.

"PELLAGRA SINE PELLAGRA."

By EDWARD J. WOOD, S. B., M. D.,

Wilmington, N. C.,

Chairman of the Pellagra Commission, North Carolina Board of Health.

By pellagra *sine* pellagra is understood pellagra without any skin indications. This subject has attracted the attention of students of the disease from the beginning and still remains in an unsettled state. By many it is rejected and the diagnosis of pellagra without skin manifestations is altogether discarded. On the other hand, such an eminent authority as Lombroso teaches its existence. This observer was disposed to confine such cases to the group of congenital pellagra. Many teachers emphasize the importance of a recognition of pellagra without waiting for the skin lesions to appear.

This subject is one which has given me great concern and about which my views have been most unsettled. Seeing a large number of cases yearly it has been my desire to acquire the most accurate means of early diagnosis, recognizing the fact that, just as in tuberculosis, the success or failure of treatment is directly decided by the time of recognition of the disease. If anything, there is more dependent on an early diagnosis of pellagra than on an early diagnosis of tuberculosis. At this time there is much to be expected from the treatment instituted early. For this reason alone pellagra *sine* pellagra becomes important. Were it not for the fact that this early institution is the important consideration of treatment it would be advisable to drop any consideration of pellagra without skin manifestations.

I have always contended that this term was a misnomer and that pellagra never occurred unless attended with skin lesions. The chief justification

for such a position is the fact that we, in America, are yet too inexperienced with this Italian scourge to be able to make such a diagnosis without the risk of serious mistake in a large proportion of cases. There still exists in the South those members of the medical profession who refuse to accept the fact of the existence of pellagra at all, therefore there is all the more reason for conservatism among those of us who are battling with an alarming situation. Apart from this condition of things there are many subtropical diseases which occur in the southern States, manifesting symptoms which cannot be differentiated from pellagra *sine* pellagra. It is a well recognized fact that sprue occurs in the same sections in which pellagra is found. It has been found both by H. F. Harris, of Georgia, and Ch. Wardell Stiles, Allen, of Charlotte, North Carolina, has emphasized the fact that in amebic dysentery the mouth and intestinal conditions cannot be differentiated from those of pellagra. Hence it will be seen that such a diagnosis as that of pellagra *sine* pellagra would be attended with quite a source of error. In an experience of several hundred cases of pellagra, and a careful study of the whole matter, it is my conclusion that such a diagnosis is impossible and that pellagra never occurs without manifesting some degree of skin disturbance or without giving a history of previous outbreaks. Most of the error owes its origin to the fact that either a previous skin lesion has been too trivial to attract the attention even of the patient, or to the fact that it having occurred some time prior to the other symptoms, and having been accounted some such simple skin condition as sunburn, it was omitted by the patient in giving an account of his previous medical history. It then becomes necessary for the physician to look carefully into the quest on of sunburn, chapping of the knuckles in the spring after the subsidence of cold weather, and to other trivial affections of the skin of the exposed portions of the body. It will be found that many patients with a stomatitis, an intractable diarrhea, a state of extreme mental depression, and some changes in the reflexes, will give a history of a previous slight redness of the backs of the hands, if carefully interrogated. Such a history would clear up many a doubtful diagnosis and would tend greatly to shake the faith of the physician in the existence of pellagra *sine* pellagra.

It should be remembered that the order of the occurrence of the symptoms of pellagra varies greatly in different cases. I have seen mental symptoms of such marked character that the patient was confined in an institution for the insane for months before the outbreak of the initial erythema. While such cases are rare, it is not unusual for the stomatitis and diarrhea to occur for weeks before the erythema. Some of my case histories show that the patients for several springs had suffered from symptoms of a digestive nature, and finally these symptoms were attended by the appearance of the pathognomonic erythema. In such cases it is my contention that the erythema was overlooked, either because of its slowness, or because it confined itself to a very small area. A few weeks ago, I was about to reject this idea and admit that pellagra without skin lesions did occur.

CASE. The patient was an old woman who had been under my constant care for two years. In the winter of 1910 she had a severe bronchitis which was probably due to the bacillus of influenza. She made a very slow recovery, and in the spring of the same season she suffered from an intractable diarrhea. There was nothing to suggest pellagra, though I was on the *qui vive* for such a case. During the fall she improved and seemed to be in her usual health. In the winter she suffered another attack of bronchitis and was very sick for two weeks. Her recovery was very slow. Albumin appeared in the urine and there were numerous casts. There was considerable edema of the feet and legs after she had sat up for any length of time. About this stage of her invalidism a most intractable diarrhea developed. In spite of strict dietetic regime and rest in bed, there was no relief of this symptom. The movements were attended with some rectal tenesmus and at times contained blood. On one occasion I received a hurry call because of the passage of at least a half pint of freshly shed blood. At this time there was no stomatitis, but the mouth had that cobble stone appearance which sometimes accompanies pellagra of some time standing. Pellagra by exclusion was suspected. The symptom which was most suggestive was the intractable diarrhea which could be accounted for in no other way. The mouth and skin were carefully inspected every day for other symptoms of pellagra. After several weeks there appeared a typical pellagrous stomatitis, diffuse redness without ulcerated areas and salivation. This added to the grounds for suspicion, but even then it was still a case that would have had to be classified as pellagra *sine* pellagra. The patient was then placed out in the spring sunshine for the first time in many months. It was hoped that this exposure might supply the one thing needed for a diagnosis. The condition of the skin in pellagra has been compared to the sensitive photographer's plate which requires the rays of light before an impression can be made. In this case there was no definite result from this exposure, though after several days a redness of the backs of the hands was noticeable.

While examining the rectum, in an effort to account for the hemorrhage, a symmetrical erythematous process was found around the anus which, at first, was attributed to pressure. The diarrhea had not subsided in spite of various therapeutic measures, and the patient was gradually losing weight and strength.

A few days ago it was noted that there was a very definite furfuraceous desquamation of the backs of the hands indicating that there had been an erythema, which was either so slight as not to be noticed, or which was overlooked on account of the weathered condition of the hands. In the light of this finding the evidence pointed to the fact that the redness about the anus was pellagrous.

This case is used merely to illustrate the importance of a more thorough investigation of the skin in these obscure cases of stomatitis and diarrhea, especially when attended with nervous and mental disturbances. It is hardly probable that a single case will be overlooked if the search is sufficiently thorough and the ground seems justifiable that there is no such thing as pellagra *sine* pellagra.

This leaves for our consideration the more important fact, that unless the diagnosis is made early in the course of the disease treatment will prove useless. Certainly this type of pellagra with inconspicuous skin manifestations is the greatest obstacle in the way of early diagnosis and the most needed thing in the study of pellagra to-day is some simple means of making a diagnosis before the appearance of skin lesions, or in cases where the skin lesions are trivial or atypical.

The probability that such a test will be soon brought forward is indicated by the work of Sambon, recently reported to the London Society of Tropical Medicine. This observer has discovered a body within certain cells of the sensorimotor cortex in pellagra which is suspected as the causative

agent. Too little has been done at this time for any definite assertions to be made concerning it, but it is consoling, at least, to know that this observer has not been daunted by the many objections to his *Simulium* theory of the transmission of the disease.

EPITHELIOMA.*

Its Early Recognition and Treatment.

BY RUSSELL H. BOGGS, M. D.,

Pittsburgh, Pa.

Dermatologist and Röntgenologist, Pittsburgh, St. Francis, Columbia, and Allegheny General Hospitals.

The most important matter in epithelioma, from a clinical standpoint, is to recognize the lesion early, when the cure is easy. After the age of forty years the possibility of epithelioma should be remembered in all persistent lesions which are constantly inflamed or show evidence of degenerative changes. The main diagnostic points in epithelioma are the age of the patient, the single character of the growth, its beginning from a wart, mole, nodule, or a persistent scaly spot, followed by ulceration. The character of the border is hard, waxy, and with a rollicking elevation, and in the later stages there is a scant scabid discharge, frequently mixed with blood. As a rule, the progress is slow and the lesion is generally situated about the nose, eyelids, or mucocutaneous junctions at points of irritation. The clinical features are nearly always sufficient to enable the clinician to make a diagnosis alone, but on account of the importance of the early recognition in doubtful cases it is necessary to confirm the clinical diagnosis by a microscopical examination. Epithelioma may be confounded with warts, ulcerating tubercular syphilides, and lupus vulgaris.

It should hardly be necessary to mention the differential diagnosis of epithelioma, but many practitioners appear to look upon epithelioma in the beginning as a trivial affair, and even at the present time, many physicians when consulted advise the patient not to bother the lesion until it bothers him. This statement is frequently made and should be severely criticised, because it accounts for many patients not having the proper treatment, as almost every case can be permanently cured in the early or quiescent stage.

Any one who has seen a large number of epitheliomas, and with a certain percentage of the cases referred in an advanced stage, when considerable tissue was destroyed, with the adjacent glands involved, and when the disease is usually incurable, will sanction this statement.

It is true that many epitheliomas progress slowly, changing very little in character for a few years, but it is also true that unless the patient dies from some other disease, it would become active and involve the glands, thus proving fatal. The time to treat epithelioma is early, before it has taken on malignant character. The old method of cauterizing the lesion superficially, leaving proliferating cells underneath, only hastens the growth. The superficial cauterization which is unsuccessful alone, accounts for the so called cancer doctor and has

given him popularity among the laity. He produces a large slough, sacrificing a large amount of healthy, as well as unhealthy tissue; most likely a benign lesion had been treated, but it was called a cancer of the most malignant type.

The public may thank the pathological laboratory as well as the x ray for bringing about a careful study and a successful method of treating an epithelioma, which will in a short time do away with the cancer doctor who advertises and, with his testimonials, has done so much harm.

It is time for the general practitioner, as well as every specialist, to investigate what is the proper treatment, not only in epithelioma, but for all forms of malignant disease. There is not a physician, whether general practitioner or specialist, who is not interested in the treatment of epithelioma, and it is his duty to make comparison of methods and adopt the best treatment for each case. This should be governed by the nature of the lesion and its location.

The term epithelioma in pathology is very unsatisfactory and is applied to epithelial growths, whether benign, semibenign, or malignant. This has accounted for such diversified opinions in regard to treatment.

True epithelioma has certain pathological characteristics. It represents a purposeless proliferation of cells, extending beyond normal limits and invading adjacent tissue, especially the lymph paths, accompanied by slight inflammatory changes. The cause of the inflammatory process is an unsettled question. Most likely it is due to the elaboration by the pathological cells of an irritant, but it may be due to the abnormal cells acting as a foreign body. On account of some confusion of the term epithelioma most authorities have classified the lesion under three varieties, superficial, deep, and papillary.

The form known as the superficial variety usually makes its appearance as one or more reddish, yellowish, or pearly papules, may be flat or warty in character, or may start as a degenerated seborrheic patch. This becomes crusted and when removed bleeds and new ones are formed. The process is often slow, and it may be months or even years before superficial ulcer or glandular involvement occurs. Rodent ulcer is a term which is confusing to many and is applied to a form of epithelioma having rather distinct clinical features. It usually starts as a soft tubercle and when it begins to grow extends at the periphery, the centre flattens, and there is a low surface surrounded by an elevated ridge, and has been compared to a lake surrounded on all sides by hills. It progresses slowly and has little tendency to invade the glands, attacks tissue, destroys all tissue which comes in its way, and finally leads to death by exhaustion.

The deep seated variety develops from the superficial, from a nodule, or from extension of cancer from adjacent mucous membranes. The growth may vary in size and in a few months ulceration takes place. This form develops much more rapidly and the glands are soon involved.

Papillary epithelioma may develop from the superficial or the deep, or from a warty growth. This integration occurs at first with fissures fol-

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lowed by ulceration. The course is rapid and malignant. This form usually occurs at the junction of the skin and mucous membrane, such as lips, glans penis, and labia.

The treatment may be either prophylactic or curative. The prophylactic is by far the more important and necessitates the education of not only the medical profession, but also of the laity as to the advisability of the complete removal of all excrescences, such as warts or moles, particularly when so situated as to be subject to irritation. The removal or correction of continued irritation to the skin or mucous membranes, such as ill fitting glasses or ragged teeth; the treatment of persistent spots of seborrhea, eczema, cracked lip, or abrasion of alae nasi, and the removal of degenerated tissue as soon as discovered.

The successful treatment of epithelioma involves the complete destruction of all new tissue with the least amount of injury to the healthy, and the best cosmetic results. Complete removal is the only advisable method. All irritating procedures that fail to destroy epitheliomatous tissue absolutely are to be condemned. For this reason the application of superficial caustics, such as iodine, silver nitrate, etc., is worse than no treatment at all, as the stimulation only hastens the process.

A case recently seen had been progressing slowly for six years until treated by superficial caustics and ointments, when the growth became active and rapidly involved the glands. Daily x ray treatment checked the process and has cleared a greater part of the glandular involvement, but in such a hopeless condition it is a question whether palliation is not all that will be obtained, while proper early treatment would have effected a cure. This illustrates one of many instances seen in daily practice, of failure to recognize the lesion early when the treatment is easy.

The radical procedures include excision, curetting, x ray, radium, electrolysis, carbon dioxide, and powerful caustics.

The x ray should always be considered first in the treatment of epithelioma because the results are better than by any other method alone; that is, taking a series of several hundred cases there will be more cases permanently cured. The cosmetic results are better and the disease is less likely to recur. By this it is not meant that it may not be advisable to combine surgery, electrolysis, or carbon dioxide as adjuvants, that there are no cases in which x radiation is inadvisable. The selection and prognosis in any case has been proved uncertain. But when the lesion is far advanced or of the more malignant type, there is no question that the rays should be employed either alone or together with one of the other methods, as this procedure reaches far beyond the affected area without injuring healthy tissue unnecessarily.

Recurrence is usually due to the fact that there is disease left beyond the affected area, the operator having been influenced by the desire for a cosmetic effect and to leave as little deformity as possible. It is very easy with the x ray to go far beyond the affected area with the first series of treatment, thus destroying adjacent diseased cells which could not

be removed by any other method without destroying healthy tissue, at the same time being effective.

There are some powerful caustics like pyrogallie acid which will destroy the exposed epitheliomatous tissue, and the cosmetic results are fairly good, but there is entirely too much danger of leaving diseased cells which is so often followed by a recurrence more malignant than the original disease. On this account, caustics are not so much in vogue as in former years, and as before stated, it will only be a short time when you will not hear of the so called cancer doctor.

In my experience the Röntgen rays are applicable in all forms of epithelioma, but when situated on the lower lip, if not far advanced, they should first be removed surgically and then the adjacent glands intensely rayed. This method cures as many or more cases with as little inconvenience to the patient and leaves the least amount of deformity. If a patient comes for consultation with a large, ulcerated growth on the lower lip with extensive glandular involvement, it seems advisable to ray both the lip and the glands intensely, for a time at least reducing the glands, which were the size of a walnut or considerably larger, making them freely movable and causing a disappearance of all the smaller glands. The ulcer which has been discharging freely, becomes smaller and the discharge is lessened by the first series of treatment. The reason for suggesting x ray treatment in this class of cases before removal is that out of a number of cases of epithelioma of the lower lip, which I have seen, in which the lesion and the glands were removed first, not a single case was permanently cured. But in the cases which were first treated by the x ray on account of being considered hopeless there have been several patients cured more than six years. This is also the experience of others, but in such a case treatment must be given heroically with the idea that the physician is just as sure to produce the required reaction in a certain length of time as he would be to relieve severe pain by powerful hypodermic injection of morphine. Any one who has not the courage to push the treatment to this point should undoubtedly give no treatment at all. On the other hand, a small lesion usually can be successfully removed by a simple and less expensive treatment, and possibly in many cases this is advisable. But as we can never tell how malignant a small, almost invisible lesion may become after removal by caustics or even by excision, and can be safely removed by the x ray, I believe the additional time and expense are often preferable and should be explained to each patient. By the x ray the small lesion should require only from ten to fifteen treatments and two to three hundred treatments of short duration are never admissible. Frequently, during the past five years, I have seen small epitheliomas, such as mentioned, where some one had given from two to three hundred treatments covering from one to three years, and instead of then having an epithelioma, the patient would have a Röntgen ulcer with a degenerated ring around the outside. The operator, who had only treated a few cases of epithelioma, considered it was progressing and kept giving x ray treatment with a view of clearing up

the lesion. Usually not even a dermatitis of the first degree had been produced, the operator, undoubtedly being afraid to produce the necessary inflammation to be followed by the desired effect. In these cases of epithelioma, I always advise surgical removal of all the degenerated tissue and if necessary planting a healthy flap. This has resulted in a permanent cure in almost every case.

In the early days of x ray therapy, I have seen cases reported as x ray failures and how easily a permanent cure was accomplished by excision, when if the true pathology had been known only a Röntgen ulcer had been removed. Obviously there would be no recurrence if all the degenerated tissue were removed.

Every röntgenologist and dermatologist has seen the same condition, but may have failed to realize that he was dealing with a Röntgen ulcer instead of an epithelioma.

Röntgen therapy should never be pushed to the point of producing advanced degeneration of the tissue, unless the case is considered a hopeless one; then the diseased tissue should afterward be removed surgically, as otherwise it would be an excellent soil for recurrence.

In regard to other methods of treatment the results are dependent upon the technique, whether removed by surgery, caustics, or electrolysis. The improvement in surgical technique and the recognition of the necessity of careful handling of both healthy and diseased tissue, as well as the wide extirpation of all the structures involved, has lessened the number of recurrences by this method. It is to be remembered that recurrences after removal are regularly more malignant in type, more rapid in progress, more prone to metastases than was the original lesion. An incomplete operation of itself is as powerless for palliation as for cure. It neither prolongs life nor diminishes suffering. Partial operations are therefore absolutely contraindicated in epithelioma or any neoplasm where ulceration is prominent. When removed by any method which leaves a large cicatrix with retraction of the tissue, there is great danger of recurrence, even if it has been done radically and followed by Röntgen treatment. I have before mentioned the use of caustics and in order not to be misunderstood, will state that this method has been employed, either by daily application of a superficial cauterization, or by the heroic, the method of producing a slough following one application. The former method, as before stated, is contraindicated, and the use of the latter should certainly be very limited. Although some competent men advocate this method, it is a procedure exploited to a large extent by irregular practitioners.

Electrolysis has been advocated by some and is a method similar to caustics, but has one advantage that the needle can be inserted into the tissue, thus producing destruction more deeply than with medication. The method is very uncertain in most operators' hands and is not safe, unless great care is taken to destroy the diseased tissue widely and thoroughly.

Carbon dioxide has been advocated by some and has one advantage over caustic medication in that the resultant scar is less noticeable. Pusey, who was

the first to use carbon dioxide and probably has used it much more extensively than any one else, states "as a routine procedure, without any other method he does not advocate its use in the treatment of epithelioma." It is a valuable adjunct, if the outlying cells have been destroyed by the Röntgen rays by ten to fifteen treatments and there is still a slight scaly condition left.

One application of carbon dioxide of considerable pressure will nearly always be sufficient to complete the treatment. This is preferred to continuing the x ray indefinitely as has been before mentioned. Much of the work which has been done by carbon dioxide has been ineffective and, as has been pointed out, is due to the failure to recognize that such wide variations in the destruction of tissue can be produced. When attempting to remove an epithelioma the reaction must be considerably more intense than in the removal of a birthmark, but the operator must remember he is handling a powerful agent. It should be understood that epithelioma is not a trivial lesion and any agent used must be powerful and understood thoroughly, whether the Röntgen rays or any other method.

It has been pointed out that the violent inflammation in the surrounding tissues following the use of powerful caustics, is advantageous in destroying outlying proliferating cells, as well as the growth itself. On this account some have advocated, after excision, cauterizing the base.

The x ray is the most efficient method; there is not the danger of producing sepsis and it does not leave any scarring. Mild, long continued irritation is always contraindicated in the treatment of epithelioma whether produced by the x ray or any other procedure. In treating epithelioma by the Röntgen rays the reaction should be produced quickly and then if only to the proper degree will rapidly disappear curing the lesion. Inflammation produced by efficient doses of the x ray will never produce metastases or a spread of the disease.

EMPIRE BUILDING.

NOTES ON TUMOR GENESIS.*

By G. L. ROHDENBURG, M. D.

New York;

and F. D. BULLOCK, M. D.,

New York.

In an article just published (1) attention is again drawn to a much neglected hypothesis as to the etiology of tumor formations. In this article certain experimental data are presented and in a general manner the hypothesis is formulated. It is our object to present in this paper an interpretation in the light of this hypothesis, of such facts statistical and otherwise, as are at present known concerning tumor formations.

The basis of all tumor formation, whether benign or malignant, rests upon the principle of increased division energy in tissue cells. Calkins (2), in working with certain of the lower orders of animal life, has concluded that cell division is due to the

*From the Cancer Laboratory of the Department of Zoology, Columbia University, under the George Crocker Foundation.

accumulation of certain metabolic products. From further work in our laboratory it was thought probable that these products were of that general class resulting from the hydrolysis of nucleoproteids. Acting on this assumption the effect of the various products of this class on the division energy of both free living and animal cells was tried. It was demonstrated that these bodies did affect the division rate, in some cases stimulating and in others depressing it. Data were presented showing how this might occur during the life of the organism. The hypothesis is in brief, that tumor formation is due to undue stimulation of the processes of cell division by the accumulation of the products of nucleoprotein hydrolysis.

Tumors, both benign and malignant, have been described in all of the vertebrates, and in several classes of the invertebrates. Their formation is not restricted to animal life, the vegetable kingdom presenting pathological conditions absolutely analogous to tumor formation as it is found in man. Williams (3) summarized the findings most aptly when he said: "Tumor formation is possible in any multicellular organism." Further investigations

cesses of metabolism. The one is directly after birth, the other is at the end of the reproductive period.

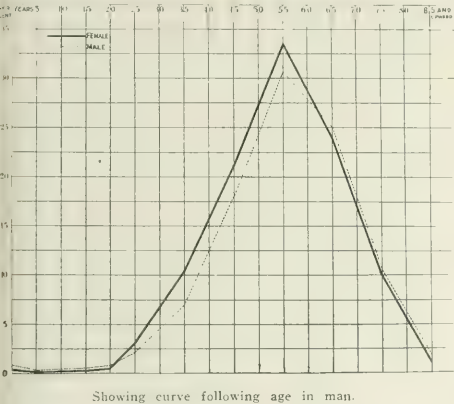
The data given in the appended table show that while the sex incidence in various types of tumor differ to a slight degree taking all tumors into consideration the ratio is one male to 1.86 females (5).

Sex	Incidence	Males	Females	Ratio
Malignant epithelial	2801	3917	1.4075
Malignant connective tissue	702	648	1.02
Nonmalignant	1179	3434	1.291
				1-1.86

Of the three factors mentioned above the tissue incidence of tumors has attracted the most attention, and induced the widest investigation. As is shown in the accompanying table (6) the favorite sites of incidence of malignant tumors differs in different countries. It will be noted for example that in Madras cancer of the mouth and cheek is excessively frequent, while in Kashmir cancer of the skin predominates, similar variations being noted in other countries. These variations in the site of tissue incidence are not restricted to man, identical conditions being found when tumor sites of different animals are compared. Those who have investigated the problem (7) explain this incidence as due to chronic irritation caused by certain national habits, and they dismiss the subject as fully explained. Attention will be drawn at this point only to one observation the result of experimental investigation, namely, that repeated attempts to produce tumors by chronic irritation in animals has universally resulted in failure. If chronic irritation is the sole factor in the production of this peculiar type of tissue incidence why have tumors not followed the duplication of these conditions experimentally? Conclusions as to race incidence and the supposedly rising cancer death rate are based upon data containing so many possibilities of error, that a discussion of these points under present conditions would lead us to no definite conclusions.

TISSUE INCIDENCE OF MALIGNANT TUMORS.

	India	Penang	Kashmir	Calcutta	Madras	Great Britain
Total number of cases on which percentage is based	130	279	302	438	830	6412
Breast	32%	18%	27%	20%	5%	30%
Penis	8%	26%	0.5%	20%	23%	3%
Uterus	6%	8%	-	-	5%	25%
Gastrointestinal	8%	-	-	2%	6%	15%
Skin	6%	2%	91%	15%	9%	9%
Tongue, lip, cheek	5%	8%	-	-	57%	18%



have shown that no race of man is immune to them. Their wide distribution in nature speaks for the possibility that tumors are dependent upon general biological phenomena, in contrast to some specific causative agent.

Of the various phases of the problem which have been investigated statistically in man, those of age, sex, and tissue incidence, present certain peculiarities. The age incidence follows a clearly defined curve (4). There is a very slight initial rise, a birth, then a gradual fall until the tenth year, then a comparative level until the twentieth year, from then on there is a rapid rise until the maximum is reached at the fifty-fifth year, and from this period to the end of life there is a rapid fall almost to the previous low level. This curve applies to both sexes as is shown in the accompanying chart. We have then two high points in the curve, one slight, the other marked, both occurring at epochs in life history when the organism is adjusting itself to new conditions, which have chiefly to do with the pro-

To summarize the points in tumor genesis brought out by statistical investigations: We find some stimulus to cell division which acts on cells both animal and vegetable, from which no class of vertebrates is free, which acts most powerfully at a certain age period, which roughly affects the male once to the female twice, and which affects different tissues in different countries.

We shall next consider the various explanations which have been advanced as to the possible nature of this much sought stimulus. A criticism which may be levelled against all explanations and theories that have been offered, is that each one regards the problem from a narrow viewpoint, neglecting the problem in its entirety, and ignoring the funda-

mental phenomena. It has been maintained by some, that tumor formations are due to specific parasites. It is undeniably a fact that a wide variety of parasites, using the term in its broadest sense, have the power of stimulating the processes of cell division, not alone in man, but also in animals and plants. The various specific granulomata are evidence of such action in man, the ova of certain parasites in the mouse again give the same evidence for the animal, while in plant life the various gall wasps, and the newly isolated *Bacillus tumefaciens*, complete the chain. The wide variety of parasites, including a host of pseudoparasites which have been recovered from, or demonstrated in tumors, ranging as they do from spirochetes and cocci to acari speaks against the specificity of any given one. The absence of any positive findings either by cultural methods or staining of any organism following Koch's postulates (except in the instance of *Bacillus tumefaciens*), also speaks against a specific parasitic etiology. Clinical observations also oppose it. While it cannot be disputed that so called cage infections, as well as increased cancer frequency in certain houses, have been demonstrated, their occurrence is comparatively rare and can well depend upon some other factor than that of parasitic infection. *Cancer à deux* of the French comes in the same category. It was at one time asserted that the incidence of malaria was directly dependent upon moist and marshy ground and it was only later studies which really showed to what this apparent increase in such territory was due. Similar conditions may exist in geographical tumor incidence. The comparative rarity of these occurrences, and the fact that those having constantly to do with cancer cases, exhibit no undue cancer mortality speak against an infectious or transmissible character of the stimulus to increased powers of cell division. Further emphasis is given to this viewpoint by the fact that there has yet to be demonstrated a specific complement deviation, precipitin, or agglutination test for tumors. Investigations along the line of a parasitic etiology have shown that a wide variety of parasites have the power either through their metabolic products, or through some peculiar type of cell injury or death which they may bring about, of stimulating the division energy of cells. This power is not restricted to parasites alone.

The theory of embryonal rests advanced by Cohnheim is another of the explanations offered as to the cause of tumor formation. This theory does explain why certain types of tissue are to be found in tumors, but fails to offer a reason why these rests assume abnormal powers of growth at certain age periods. The results of all experiments in which cells have been placed in a position analogous to embryonal rests have uniformly resulted negatively as far as tumor formation is concerned.

A third explanation is that offered by Kelling, who thinks that tumors are due to cells of other species which get into the host and obtaining foothold grow, and produce a tumor. This theory is supported by serological tests. It is peculiar, to say the least, that these foreign cells should exhibit such marked variations in the favorite site in which they locate in different countries. It would be rather

stretching things to suppose that cells, from the chicken for example, would elect the gastrointestinal tract in Great Britain, the skin in Kashmir, and the mouth in Madras.

Another hypothesis is that offered by Williams (9), who considers tumors to be due to metabolic disturbances following continued high nitrogen diet. While in certain points the hypothesis falls in with that for which a brief is held in this paper, he, like many others, fails to consider all the points in the question. A continuous high nitrogen diet fails to explain the occurrence of tumors in herbivora. The influence of domestication, on which he lays much stress, is certainly not applicable to either fish or plants, in both of which tumors are to be found. Too many positive conclusions have been drawn by him on the data of comparative race incidence and the increasing cancer mortality, these deductions being dependent upon data capable of several interpretations. It would also seem beyond explanation on the basis of his hypothesis, that a too high nitrogen diet would cause a predominance of tumors of the tongue and mouth in Madras, and of the skin in Kashmir; obviously there must be some other factor.

The last of the theories which we shall consider individually is that proposed by Ribbert. As is well known his theory is based upon altered conditions of cell tension, in the main produced by overgrowth of connective tissue elements of certain structures. This theory concerns itself mainly with the histological changes in early tumor formations, and in the so called precancerous conditions. It has been demonstrated by histological investigations that one of the first changes in conditions which often result in tumor formation (the precancerous conditions) is the proliferation of connective tissue elements which by their ingrowth between more or less specialized cells, snare off such cells from their normal connections. These changes follow a variety of conditions chiefly after prolonged healing as seen in gastric ulcer, Röntgen ray burns, etc. The peculiar thing is that upon the reproduction experimentally in animals, of conditions analogous to those resulting in malignant tumor formation in man, no tumor as yet has been produced, showing again that there must be some other factor at work.

Having considered a few of the points on which the various theories which have been proposed fail of explanation, and on what facts they are based, let us consider certain other proved points in tumor biology. The tumor cell, while it shows marked stimulation of the powers of cell division, is not possessed of normal vitality; slight rises of temperature decrease its malignancy, weak antiseptics kill it, and slight interference with its blood supply causes it to become necrotic. Still in its life history it differs in but very few points from the normal cell from which it sprang. It possesses to a modified degree the same functions, and preserves to a modified degree the same characteristics. Abnormalities in mitoses and the number of chromosomes occur, but they are not constant. The characteristic of the tumor cell is, as has been most forcibly presented by Ewing, its power of autonomous growth.

Another series of observations concerns the chemistry of the tumor and of the tumor bearing organism (10). It has been demonstrated that the tumor bearing organisms undergo certain changes in metabolism, the nitrogen balance is lost, the output being greater than the intake; there is a progressive demineralization of the organism, and a decrease in tryptic activity of the blood. The method of nitrogen elimination also undergoes modification, the urea output falling and the ammonia and extractives rising. The fact that these changes are not specific for tumors has resulted in their neglect as matters of importance. The fact that they occur with other conditions associated with inanition does not mean that they should be ignored; they exist beyond dispute, and must be considered as part of the picture until it is demonstrated that they have no bearing on the problem.

The facts which have been established for the malignant tumor itself can be summarized very briefly. The nucleoproteid and albumen content of tumors as compared with normal tissues, is increased. The reaction of tumor tissue toward various ferments is altered, an evidence, according to Emil Fischer, that the arrangement of the chemical molecule of the tumor cell is different from normal cells. Finally, autolysis takes place much more rapidly in tumor tissues than in normal tissues.

We come now to consider healing, a phenomenon most intimately connected with tumor formation. Williams and others have laid special emphasis on this similarity without, however, giving any decided views as to why, and how, tumor formation differs from normal healing. Not alone is it occasionally impossible to distinguish granulation tissue from certain tumors, microscopically (for example the sarcomata), but there is a peculiar combination of conditions often following healing, which makes the relation all the more close. Reference is made to the keloid. The normal process of healing results in scar formation. In certain people, notably the negro, it is by no means infrequent to see this simple scar become hypertrophic, forming a keloid, this being the first evidence of an undue amount of stimulation of the processes of cell division. Fairly often these keloids undergo malignant change, becoming sarcomatous. Sarcomatous changes are also frequently observed in other scars. We have in this illustration the three steps, normal healing, a slightly increased stimulus resulting in a benign tumor, and a still more marked increase resulting in a malignant tumor. The process of healing follows cell death, and cell death may occur in many ways. If pregnancy is excluded, healing and regeneration are the only processes occurring in the body which show the effect of stimulation of the division energy of cells. This phenomenon occurs in man, in animals, and in the vegetable kingdom, and thus presents the first similarity to tumor formation.

Healing is usually thought of only as a gross phenomenon. It occurs also, however, as a microscopic change and is a potential possibility in any organ or tissue of the body, showing a second point of similarity to tumor formation. Like tumors it occurs more frequently in some tissues than in others, for the simple reason that some tissues are

more frequently the subject of cell death, a third point of similarity to tumor formations. Viewed casually it would appear that with this the points of similarity end. Closer observation shows, however, that both age incidence and sex predominance, *bêtes noires* of most theories, are also easily explainable on this basis. It must be remembered, however, that healing can take place after purely physiological cell death as well as after cell death induced by various extrinsic agents. The female illustrates well the various points in the case. In this sex we find a greater predominance of tumors than in the male, and an age incidence similar to that of the male. The female, because of peculiar physiological conditions, has repeated periods in which healing plays an important part, namely, in the processes of menstruation, lactation, and pregnancy. The male has no analogous physiological process. It is more than a passing coincidence that tumor formation should be more prevalent in the female, and that the sites most frequently affected should be the very ones in which these repeated processes of healing take place, namely the breast and uterus. With the male the picture may not at first glance be as apparent. Because of the habits men indulge in, they have lesions in the mouth more frequently than do women; with these we find at the same time a greater percentage of tumors in this locality in men than we do in women. The proportions in the United States based on the returns for 1900, being 9.5 per cent. for the male and 1.6 per cent. for the female. Again, men follow certain occupations not followed by women; in certain of these peculiar types of injury are frequent, and tumor formation in these areas of injury occur. X ray carcinoma, soot, paraffin, tar, and anilin dyes furnish examples. The incidence of trauma, a point very thoroughly investigated by Coley, brings out again the same point, applicable in this instance with equal force to both sexes. Trauma frequently precedes tumor formation, and trauma means death of cells and the process of healing. The process of healing and tumor formation have been demonstrated to bear such a close relationship in such a majority of tumor formations, that in those instances where it has not as yet been demonstrated, it is extremely probable that the same relation is present. The age incidence is explainable, in that during the period of greater tumor incidence there occur physiological changes which call forth the process of healing, and certain alterations in metabolism which we shall shortly consider.

It is perhaps obvious that not every process of healing results in tumor formation. Both histological and chemical investigations have shown the probable nature of the circumstances which influence this change. The chemical changes may be summarized as those of altered nitrogen metabolism. While the causes of this nitrogen upset do not at the present time concern us, it has probably to do with the internal secretions. Histologically, it has been shown that the conditions which often precede cancer are characterized by excessively slow processes of healing, or by repeated processes of healing. The x ray burn furnishes an example of the first class, and the lesions of the lip

in the smoker furnish an example of the second class. In these lesions there is continued death of cells in microscopic amounts, a subsequent autolysis of this dead protoplasm with the formation of the products of nucleoprotein hydrolysis. In the ordinary processes of healing these products are for the most part removed by the phagocytic action of the leucocytes, while in the lesions in question phagocytosis plays apparently but a minor rôle in the functions of those leucocytes which produce round cell invasion. Coincidentally we find a tissue basis more or less constant in early tumor formations, an evidence that the body has need for them. The tissues about such areas become, as Hirsch and others have demonstrated, acidophile in reaction. The accumulation of these products of nucleoprotein hydrolysis at a focus of healing, occurring in a manner indicated, is, according to our hypothesis, the cause of tumor formation. There is clinical evidence that some of these products in pathological states, not cancerous, have this same power e. g. gouty tophi, and Herberden's nodes, both being evidences of increased powers of cell division following localized deposits of the later products of nucleoprotein hydrolysis. It is a striking thing that tumor immunity of varying degree is produced, in general, by a series of manipulations, depending in principle upon the introduction into the body of the products of autolysis, a finding explainable on some such hypothesis as has been offered.

While it is not impossible that a long continued high nitrogen diet, to which attention has been directed by Williams, may result in the formation of the various products of nucleoprotein hydrolysis in amounts in excess of those which the body can dispose of, and that the constant feeding of cells at a focus of healing by a nutritive fluid rich in such compounds, may be a mode of entrance of such agents, yet it is more probable that the process is, in its beginning at least, a purely localized phenomenon.

Perhaps the strongest point of the theory is that it furnishes a fully adequate hypothesis for the autonomous growth of tumors. A tumor having started in the manner indicated, the death of cells which occurs during the course of growth upon autolysis produces again more of this stimulatory substance. The vicious circle once having been set up, it ceases only upon the death of the individual. That tumors are rich in autolyzing enzymes, and in the products of autolysis, has been demonstrated by Buxton and Beebe. This view of the autonomous growth has some basis on an interpretation of the findings of Russell, who observed that if a stroma reaction did not take place in an inoculated tumor the tumor would not grow. The most logical supposition obviously, is that the growth of the tumor depends upon the blood supply. While this is undoubtedly true, the invasion of the tumor by leucocytes and the removal by them of the stimulating substances might induce this same result. It is also peculiar in this connection, that the manipulations which affect the viability of the tumor cell also affect the action of most enzymes. In those cases of spontaneous disappearance following infection of

the tumor, cure has probably resulted from the same cause. Mere removal of tumor cells is not apparently sufficient, as the recurrences after complete (?) operations testify.

SUMMARY.

Tumor formation, whether benign or malignant, starts as a localized process at some focus of healing which is usually microscopic, and may follow either physiological process or be due to extrinsic causes.

Either because of the mode of cell death, or for reasons at present not clear, the products of nucleoprotein hydrolysis are not removed by the phagocytic action of the leucocytes.

The continued application of such stimuli causes either benign or malignant new growths, depending probably on the amount and continuation of the stimulus, while the type of tumor depends upon the type of cell involved. Such an hypothesis would explain the many puzzling features of tumor formation, for example, autonomous growth, changes from benign to malignant tumors, changes in tumor types, age, sex, and tissue incidence, and at the same time correlate the at present widely divergent findings in tumor biology.

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tempt to wear it, and finally it was impossible to insert it. The sensation imparted to the finger in palpating the face was not that of edema, but rather of solid exudation into the underlying tissue, and the swelling of the structures of the right orbit was of too hard and unresisting a consistence to assume that it was edematous only. The parotid and sub-maxillary glands were at no time enlarged or painful or tender to the touch. Upon admission to the Jefferson Hospital the temperature was 101.8° F.

The case resembled closely one of erysipelas, and that diagnosis would have been made unconditionally were it not that the line of demarcation characteristic of that affection was not present. Whether this diagnostic feature of erysipelas is sufficient to shelve that diagnosis is uncertain, but in this case the history of the illness as recorded daily in the hospital clearly shows the cause was an infection, but not the specific one of erysipelas. The patient continued to be quite ill for three weeks and is still in the hospital.

The general symptoms consisted of an elevation of temperature ranging from 99° to 103° F., pain, swelling, and stiffness of many of the larger joints, and a superficial, evanescent, and frequently appearing erythematous rash. The infiltration of the orbit was, from my standpoint, an alarming complication, as in the first few days of the illness it appeared as though the structures posterior to the globe in the orbit would become involved, as so frequently happens in erysipelas, and the functions of the eye disabled or lost.

An injection of twenty c. c. of streptococcic serum was given the first day; thirty c. c. the second, and forty c. c. the fourth day after admission to the hospital. The dermatitis in the left side and the orbital edema became promptly better, but the disease itself was not favorably influenced, as was shown by increased swelling and infiltration of the skin and orbit on the right side.

Urinary and blood examinations threw no light on the etiology. The patient has resided for the past winter in the northern regions of Canada, where the temperature for five months remained at zero or below. Her father communicated to me the interesting information that the affection from which his daughter was suffering was epidemic in her home town, and, while the cause has not been established, the disease was attributed to the excessive cold and its sudden cessation.

After seven days of the continuance of the orbital complications the local symptoms subsided, and the artificial eye has been worn with comfort. At no time was there any disturbance in the interior of the left eye or any abnormal limitations of its movements.

The invasion of the skin of the lids by various eruptive diseases of the skin of the face is common, the conjunctival and corneal complications are also frequently seen, and orbital cellulitis with the most serious consequences forms a part of the clinical history of facial, nontraumatic erysipelas, but conjunctival edema and subconjunctival infiltration as a part of a facial dermatitis, probably septic in origin, is new in my experience.

1528 WALNUT STREET.

THE TISSUE DENSITY FACTOR*

In General Physiology, General Pathology, Psychogenesis, Physical Psychology, and Neurology.

BY HOMER WAKEFIELD, M. D.,
New York

(Concluded from page 162.)

THE DENSITY FACTOR OF TISSUE REACTION.

We have observed many pathological examples of the relation of tissue density to various physiological and pathological phenomena, but I venture that its most interesting, if not its most important clinical status, is its vital reaction series of manifestations.

Here we have paradoxically a physical basis for a surprising amount of what we have been taught to regard as exclusively mental and nervous phenomena, and even including many of those features of personal character and individual characteristics which theologians and "new thought" cults have led us to believe were expressions of separate spirit entities acting through the body as a medium of expression only. Critical analysis traces this all back to the fundamental property of protoplasm known as irritability.

Even when we get down to the body as the source and foundation of mental function, we find it quite wholly ascribed to the nervous system, which again is subject to the old hypothesis that it is an external entity acting through the body as an instrument of conduction, and in operating or actuating the body as a medium of expression, which is the principal asset of the several religio-therapy cults.

In all of these concepts the tissue reaction is subordinated to the spirit-nervous doctrines and their aircastle superstructures.

If we revert to the nerveless rudimentary organisms, we find radical differences in their reaction times and intensities, entirely apart from nervous agencies, and depending upon the fundamental aspects of the protoplasm *per se*. A unit degree of mechanical shock which will not elicit more than a commonplace reaction in the *ameba* or *actinospherium*, will cause a violent reaction in the *diffugia*. If these reactions were thus varied in the same organism, we would characterize them as *hypoesthesia* and *hyperesthesia*, respectively.

In the higher animal kingdom we observe them, but not only do we ignore them as fundamental reactions of protoplasm of all the tissues, but ascribe them as exclusively nervous reflexes, vasomotor reflexes, etc., but we underrate their importance in those operations of mentality which we are too prone to limit to functioning of the cerebral hemispheres, if not to a component of an infinite intelligence, temporarily in command of a human body.

For several years the writer has been engaged in studying this tissue reaction apart from the supernatural and nervous aspects; in other words, as just plain reaction of the living substance, and the variation in its fundamental property of irritability in relation to etiological factors, tissue density, etc.

THE TISSUE DENSITY SERIES.

If we take for observation any of the lower forms of invertebrate life, or a living muscle of a higher

animal, we find by perturbation with any of the five forms of physical energy; chemical, electrical, thermic, photic, or mechanical, by the process of teasing, or by lack of oxygen, the density will be greatest at the start and gradually decline. Parallel with this decline we note a progressive increase of the velocity and violence, coincident with a decrease in the duration of the reaction, up to a unit point, followed by a progressive decline of the velocity and strength of same until a limit to the vital reaction is reached. Thenceforward, if the insult or deprivation is continued, disorganization and disintegration ensue, a retrogression known to physiologists as histolysis.

This reaction curve, being common to all known forms of animal life and to sensitive plants, I have denominated it the *biological series*, as a standard or graduated index for convenience of expression. I have moreover made a double application of the scale of reaction phenomena. First, as representative of the series of reactions incident to the tissue status of the several stage phases exhibited, as above described, and, second, of the contraction curve of any contractile tissue, which progresses to a point of maximum contraction, and thence declines to a state of exhaustion-relaxation, when continued to that degree.

If we divide the *biological series* into two divisions, separating them at the point of maximum contractile reaction, we have a period of excitation and one of depression. We may, moreover, divide a greater *biological series* of integration and disintegration the entire curve of the above described series representing a period of vital reaction, and following it, a period of histolytic disintegration. The period of vital reaction being subdivided into one of synthetic compensation and uncompensated degeneration during life.

If several normal muscles of the same uncontracted or *equilibrium length* be perturbed into as many different degrees of elongation by degradation rarefaction, and arranged in the order of their densities, it will be observed that if again perturbed by any form of physical energy, they will respond in time, energy and velocity of reaction in the order of the stage phases of the *biological series*, for any portion of the whole series they may cover, in definite relation of the tissue density to the reaction expression.

The value of observation of vital reaction in accordance with the stage phases of the biological series, may perhaps be best appreciated by reference to physiological observation prior to its introduction. For example, Ranke postulated that acids invariably diminished the irritability of muscles. This is true only of those applications of overpowering strength and quantity. Less violent effects would, relative to strength and quantity, first effect a contractile reaction, increasing progressively in energy up to a unit maximum, and thence on through a breaking of the *tonic* into a *clonic* contraction, to a phase of exhaustion relaxation, the *final* one in which Ranke found irritability minus.

The exaltation of irritability passed in the period of vital reaction, to the maximum of contraction, is

strictly one of exaltation of irritability, not of real mechanical (motor) capacity.

THE PHYSICAL BASIS OF PAIN.

Rarity of tissue and its corresponding hyperesthesia predispose it to painful phenomena. This fact calls for the removal of pain from the domain of metaphysics and psychology to that of living substance reactions.

It is observed that pain is caused by that which causes contraction, and its acuteness depends upon the intensity of contraction and amount of tissue involved in a single contraction. To any unit stimulation, the pain involved as the reaction expression, is inversely as the dimensions of the muscle. The small muscles of the face give rise to the most acute pain. The psoas muscle, the most rarefied, is subject to the most painful and paroxysmal of cramps. In general, hyperesthetic rarities of tissues must be recondensed, not merely relaxed, as therapeutic measures. Even during painful contraction, a condensing agent such as ergot, will bring relaxation by condensation.

Pain is at its climax when in the order of the *biological series*, the phase of contraction is at its height. Change the phase in either direction, either by restoring normal conditions of rest, or by continuing on to exhaustion relaxation. The latter mode is the one now in vogue. We poison the patient that the painful contraction may be relaxed.

Painful states that are palliated by narcotics not infrequently recur, as the recession of excursion in the biological series occurs. Often pain is manifest only on the recession, as evinced in thawing after freezing of parts of the body.

THE PHYSICAL BASIS OF HYPERESTHESIA.

In the orderly consecutive series of reaction events which we have dubbed the *biological series*, beginning at the normal point which we will call zero, the living tissue being at rest, we find, if it be mildly stimulated by any one of the five forms of physical energy, namely, chemical, thermal, electrical, photic, or mechanical, and after a little interval, again stimulated, the second one of no greater degree than the first which excited no reaction whatever, will excite a response that is both precocious and exaggeratedly violent.

At the beginning of a stimulation at zero, and rising in intensity progressively but gradually, we observe that not until a certain degree is attained, is a contractile reaction elicited. This point is termed by physiologists the *threshold of stimulation*. When the single stimulation antecedent to that of the exaggerated response is intervaled to the succeeding one, we find the threshold of stimulation has been attained, i. e., the succeeding one is promptly reacted to.

This is also the basis of many phenomena in physiology and pathology, yet it is seldom so recognized by medical men. If a small animal is injected with a foreign serum, so little, and so little toxic as to elicit no reaction, and after a period of absorption and insensible reaction, is reinjected with the same quantity of the same serum, the second reaction may be, and often is so violent as to prove fatal.

In the terms of this type of research, the initial

injection sensitized the animal and the second one produced *anaphylaxis*. If, instead of an interval, consecutive injections were substituted, the violent reaction would be absent and an ultimate state of lost reactivity substituted. This is termed *immunity* or *prophylaxis*.

Every physical perturbation of living tissue produces upon it its impress, which I interpret as due to a molecular adaptation of the subtle tissue to the impinging typical character of physical energy. This I also regard as the physical basis of all memory, habit, and ultimately of immunity. The initial stimulus accomplishes only a partial molecular adaptation which facilitates too violent a completion of it upon its repetition. Upon the vibration theory also, the initial stimulus would initiate the vibratory status of the tissue to the attunement of the subsequent stimuli. In general physiology, the status attained by the antecedent stimulus is termed *hyperesthesia*. In serology the production of complete adaptation to a heterologous agent would be regarded as an immunity from later reaction.

Hyperesthesia, however, is a relative condition and is governed in its intensity by the reaction vitality and reaction velocity of the reacting tissue, which in turn is exhibited in inverse ratio to the density of the same.

THE TIME EQUATION OF TISSUE REACTION IN RELATION TO DENSITY.

The reaction time of the mental phenomena of physiological psychology, and that of *tissue* reaction, as related to mental function, should be sharply distinguished. In the former we have a time gauge upon the capacity of the person to express himself upon the muscular system through volition, or the will, whilst in the latter we have a muscle or general tissue reaction, directly actuated through the senses, and secondarily modifying the mental function.

Notwithstanding that both are components of the aggregate functional product which we call mental, or mind, one is the reverse of the other in action. The former is a way of getting at the index of an individual's quickness of perception, and of coordination in muscular registration of it. The latter is one of approximating the velocity of direct reaction by contractility of tissue, even prior to its participation in the deliberative function of aggregate cerebration.

It is paradoxically the observed fact that the speed of conception commonly decreases in inverse ratio to the increase of velocity of tissue reaction to sensorial impressions which thus further widens the gap between precocious tissue reaction and delayed deliberation upon it. In other words, with exaltation of the sensibilities the victims become more obtuse in discernment, discrimination, and discretion, those higher faculties which involve the collective interaction of the elements of the aggregate of what we know as conscious cerebration, coordinate mentality, and deliberative thought.

A fundamental law which has stood every test of investigation and practical application for many years, may be expressed as follows: *The acuity, velocity, and energy expenditure of vital reaction of living tissues, are in inverse ratio to the density of*

the same. The less the tissue density, the greater the acuity, velocity, and energy expenditure of its reaction, thus the most transient, soonest spent, and least enduring. This I regard as a widely applicable and useful law of great physiological, psychological, and pathological import. By the aid of this law the kaleidoscope of normal and morbid mental and nervous phenomena is brought within the grasp of comprehension without the aid of supernatural agencies.

Clinically speaking, *the subject of lowered tissue density is hyperesthetic in direct ratio to the degree of rarefaction attained*. This may be local or general. Local tissue rarefactions are characterized by corresponding sensitiveness, tenderness, and soreness.

The area of exaggerated tenderness and soreness and intense reaction encircling a boil, a carbuncle, or a cancer, is an exhibition of local hyperesthesia which magnifies the reaction to any unit irritative factor, until it is removed or otherwise becomes negligible.

Low tissue density is certainly the typical predisposing factor in all inflammatory conditions. Not only by virtue of its predisposition to infection, as elsewhere stated, but owing to its great proclivity to oxidation. I believe the law that other factors equal, *tissues are oxidizable in inverse ratio to their density*, i. e., that low density is responsible for *hyperoxidation*, will universally hold good.

The reaction times of greatest scientific interest and importance are those of the general or somatic organism. We noted a short time ago that tissue density varied with age. We also note it varies with sex, but many factors such as physical exercise and sedentation may overbalance that of sex, wherein, for example, the squaw is much harder than many civilized men.

However, among us, woman represents a typical mental character or individuality which is commensurate with her lower tissue density. We characterize her mental type as intuitional, instinctive, and impulsive, in contradistinction to the reasoning-deliberative type of man. Children partake of the feminine type and males develop the masculine type with their tissue hardening development into manhood. Unfortunately, however, some exceptions remain effeminate, both physically and mentally, as the law demands.

The hyperesthetic individual exhibits hypersensitiveness, hyperexcitability, and hyperirritability primarily, and hyperimpressionability and hypersuggestibility secondarily—all due to precocious, cverswift, and exaggerated tissue reaction.

The influence of tissue hyperesthesia upon mentality and character is obvious. The reaction of hypersensitiveness, hyperirritability, etc., serves so to exaggerate all sensorial perception as to overwork and exhaust the subject with the reaction violence and traumatic force of sensorial impact.

The precocity of reaction to sensorial impressions is such as to disturb the time relation of the balanced action of intellection, involving a predominance of reflex, recoil or *impulse*, as contrasted with *deliberative* reaction expression. The faculties of discernment, discrimination, and discretion are in abeyance owing to the inability of the cooperating

elements of normal cerebration to participate in, and thus constitute the full aggregate of reaction which we term full consciousness.

Every stage phase of transition of consciousness is represented in the zoological scale, from the highest known to man, ranging down to zero. What is normal to the lower orders is subconscious to the higher. There is represented in man a much wider range than we like to admit. If a high order of man exhibited the mental state normal to many women and children, he would be at once declared unbalanced.

The more an individual acts upon impulse, the less are his acts balanced by his previous experience and knowledge. He commonly acts first and thinks afterward so to speak; thus the delayed composite reaction brings remorse for foolish impulsive acts.

The precocity and violence of the sensorial impressions so dominate the mentality of the hyperesthetic subject, in obsessing intercurrent, normally participating memories of previous experiences and mental reactions, as to subjugate the will of the subject to the most transient of passing influences and to the will of other persons. Thus are these subjects said to be hyperimpressionable, hypersuggestible, unstable, fickle, vacillating, irresolute, unreliable, irresponsible, treacherous, disloyal, unfaithful, hypocritical, and insincere.

When uninfluenced by others these individuals are whimsical, capricious, fitful, fanciful, freakish, eccentric, erratic, frivolous, and wayward. Altogether we denominate them *weak* characters. They are incapable of individual thought, and are entirely influenced by passing whims and by all manner of imposed fads, dogmas, cults, etc., and are the constant prey of human vultures and parasites. They are prone to fanaticism and absorbing infatuations, especially the mysterious and religious.

Hypersensitiveness to every vicissitude of life and overreaction to every commonplace perturbation, keeps the victim in an almost continuous state of muscular tension, ranging, relative to the personal equation, from a sthenic tensivity of high grade, to a quivering weakness that Immermann (10) termed *irritable weakness*, and both of which we all call *nervousness*.

All hyperesthetics are relatively weak, though they differ in regard to nutrition in exhibited strength. All striped muscles are extended in equilibrium length, and smooth muscles and supporting ligaments sag corresponding to their loss of density which implies expansion and extension.

THE FACTOR OF MENTAL EQUILIBRIUM.

In laying aside all theological and metaphysical assumptions regarding the functional product, mind, as having no place in scientific discussions, we must logically deduce it to be a composite product of mutual interaction of that aggregation of factors which we know to constitute its more or less complete integrity.

That the mental function has long been regarded as a balanced action, is attested by the commonplace references to *well balanced* and *unbalanced* minds yet I am not familiar with any definite efforts to

study the nature of the unbalancing, whether due to changes of reaction time, dynamic disequilibrium, or what not.

My own insight into this subject was born of observation of the inequalities exhibited in hyperesthetic individuals, between the exalted sense reactions or recoils related to tissue rarity, and the part they play in the general mentality and individuality.

When one comes to attempt a critical analysis of the mind in its several normal and abnormal features, in the light of inequalities of reaction time, an unexpected illumination is found available for its elucidation.

The correlation existing between the direct reaction to sensorial impressions and the deliberative-conscious reaction to the same, as regards cooperation, relative velocity, reaction time, etc., we find of great importance. Perhaps not until a little thought is devoted to it, is a full appreciation obtained as to how far excessive sensorial impressions influence and exaggerate normal into abnormal attributes of individuality. Certainly the literature yields little, yet hyperesthesia is expressed by exaggerations of the most commonplace acts of every day life, and physiological activities are exaggerated into pathological ones.

Ordinary forethought and caution are magnified into anxious apprehensions. Commonplace considerations of supplying daily needs are exaggerated into distressing solitudes. Fixing the attention upon a subject produces a stress which if persevered in promptly brings exhaustion, a source of sorrow gives birth to a tetanic grief which permits no relaxation of weeping. A commonplace regard becomes infatuation, and love an uncontrollable passion. The sexual instinct is exaggerated into erethism, erotomania, satyriasis, and nymphomania. From a normal sense of delicacy of decision, they become fastidious and prudish, from friendly to *hypercritical*, and from commonly cautious to suspicious. The accredited credulity of this type is the result of their hyperimpressionability and suggestibility.

Ordinary solicitude becomes distressing apprehension, anger becomes rage, fear becomes terror. The universal law of selfpreservation becomes a consuming selfishness which is always present regardless of the covetousness of others, and so on—one could go through the list of human characteristics. Willfulness is an exaggeration of the normal will; vanity, egotism, bigotry, and all exaltations are exaggerations of ordinary self respect. Thus we observe quite a universal amplification of mental traits as symptoms of general hyperesthesia.

The mental tenor and capacity of an individual are, moreover, shaped through secondary actions of the same factors, namely through the effect of the overexaggeration and thus premature fatigue of the attention.

Inability to endure prolonged sustained fixing of the attention upon a single subject, is productive of memory lapses or voids, which involve the aspect of stupidity and is the dominant cause of the incompetency of the modern laggards and sluggards of our schools.

Continuity of thought also demands continuity of

the attention; and an unremitting memory is necessary for high mental integrity.

It is to be observed that so long as the tissues continue in a rarefied relaxed state, mentality is distorted, and the easy relaxed attitude toward life's vicissitudes becomes impossible, however the victims may seek mental relief and receive in return repeated suggestions to that end at a dollar each from the cults.

Worry and anxiety, as chronic exaggerations of normal mental operations, are really chronic diseases and demand medical attention by men who know how to enhance tissue density by correcting all defects of oxidation synthesis.

The hyperesthetic individual is unethical, for the obvious reason that he does not deliberate upon the rights, feelings, and needs of others, as well as owing to the exaggeration of his own instinct of self protection.

THE TISSUE DENSITY FACTOR IN FUTURE THERAPEUTICS AND PROPHYLAXIS.

When the pathogenesis and pathology of any derangement are thoroughly understood, the therapeutics is much simplified and the prophylaxis is clearly indicated.

Knowing that the greatest tissue density comes from the highest degree of the process of integration, that the latter in turn depends upon oxidation synthesis, and that upon oxygenation, normal alkalinity, catalytic activation of the chemical process and all of their subdivisions, the physician finds his hands very full in spanning the ever widening subdivisions of the foregoing.

For example, oxygenation would include nasal, laryngeal, tracheal, and pulmonary respiration, cardiac, vascular, and blood factors of circulation; and oxygen carrying capacity of the blood and hyperesthetic reaction exanginations of the capillaries exhibit both local and general significance as vascular factors. The many sources of acid factors and subalkalescence transcend present space and time. The part played by the catalytic elements of the thyroid and thymus glands demand attention together with general glandular catalytic properties.

The direct action of the internal secretion of the suprarenal glands in the attainment and regulation of tissue density demand a hearing. In cases where the thyroid and thymus gland secretions are deficient, they must be artificially supplied as a correction.

Attention to all these factors of the body requiring possible correction and individual treatment confront the physician, but not infrequently habits of life have also to be materially changed.

Ill ventilated, superheated indoor atmospheres have to be displaced by fresh cold outdoor air; hot baths replaced by cold ones, sedentary habits exchanged for physical training, muscle development and general tissue hardening, rest cures dispensed with in favor of work cures, coddling exchanged for discipline, etc.

Frequently it is necessary to pull a patient together to make the foregoing possible. Physical and mental capacity has to be partially restored to make possible the participation of the patient. This has to be attained by artificial tissue condensation. This is probably most promptly accomplished by hy-

podermic injections of ergot by Livingston's (12) method.

The so called cumulative effects of progressively increasing doses of such tonics as nux vomica or strychnine, by thus obviating their contraction producing action, I regard as tissue condensing in ultimate results. It is this action which distinguishes it from the ordinary tonics and stimulants (the immunity process).

One of the exaggerated reactions of hyperesthesia, fear, which as an emotion is harmful, as I described four years ago, has lately been overdone and worked overtime as a universal cause of all the woes of the neuroses and psychoses, not only by the several faith healing cults, but some writers with medical education, of whom better things might be expected. When all is traced to the fear root, a purely mental form of treatment appears to be the only logical one.

It appeals to reason that real fright in the face of danger is not relieved by any calming of healers, present or absent, or by a plan of autoreasoning. Escape or a fight for life, if cornered, will follow if opportunity permits. Conversely, if no cause for fear exists and a consuming fear possesses one as an exaggeration of trivial or obscure origins, the question arises, what is the mode of treatment indicated, recondensation of tissue as the reduction of the cause, or prayer and other faith healing to curb the effect? If the latter, how soon are we to recede a century or two and abandon all science for theotherapy?

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517 WEST 123D STREET.

THE RELATION OF PELVIC DISEASE IN WOMEN TO MENTAL DISTURBANCES.*

By EDWARD A. SCHUMANN, M. D.,
Philadelphia.

The relationship between mental disease and the lesions affecting the female genitalia is a most intricate and complex one, and the true physiological basis for such relationship as well as the pathological interaction of these two great divisions of bodily activity are not at all understood. At best it is possible to discuss only the cause and the effect of this relation as isolated facts, without any explanation of the manner in which any given cause produces a definite result.

The subject must be approached from two viewpoints, first, the effect of abnormalities of the genitalia upon the balance and poise of the cerebral apparatus, and conversely the effect upon the reproductive organs of the various forms of mental disorder.

Insanity or lesser psychic manifestations occur as sequelæ or as concomitants of the several epochs of female sexual life rather more frequently than as a result of diseases of the organs of sex. The three great periods in the life history of women—puberty, reproduction, and the menopause—are all associated with such profound alterations not only in metabolism, but in the entire physical and mental nature of the individual, that it is not strange to find many women in whom the resistance of the nervous system is not sufficient successfully to withstand the rapidly changing stresses which destroy its sensitive balance, with insanity as a natural result.

The onset in puberty in girls is much more rapid and complete than in boys. With the first, and usually entirely unexpected appearance of the catamenia there develop the rapid changes in character and mental attitude which differentiate the woman from the girl. The evolution of the sexual characters and the development of the power of reproduction induce a stream of innumerable new stimuli from the genital organs to the brain, accompanied by wholly new organic sensations, new associations, and new and powerful emotions. The evolution is rapid and, as is the case with all rapid development, more or less unstable (Peterson). A similar instability of the nervous system at puberty is also noted among the lower animals during the period of rut. To such an extent is this known that the "madness of March hares" has become proverbial.

The second great epoch in the life of women, the period of reproduction, is also attended by greatly increased liability to mental disease. According to Peterson in ten per cent. of all insane women the insanity has its inception during this time. The majority of these cases (seven per cent.) are parturitional, that is, occurring during or immediately after labor, while about one fourth are lactational, and one tenth develop during the existence of pregnancy. With the subsidence of procreation comes another disturbance of physiological balance, the climacteric with its necessarily wide adjustments to replace the ovarian function and secretion by meta-

bolic action, and here again it is found that mental disorders are frequently developed. Four per cent. of insane women are regarded as suffering from menopausal insanity.

It is worthy of mention that these evolutionary psychoses occur usually in women whose pelvic organs present no evidence of disease, and that among cases of puerperal insanity the most favorable for prompt and complete recovery are those following exhausting conditions, or in which infection has taken place, while those occurring subsequent to apparently normal pregnancy and easy labor are most resistant to treatment.

With these facts in mind, it would seem that if mental disease so frequently results as a concomitant to the normal, or better, usual, cycles of activity of the sexual organs, such mental conditions must occur much more commonly when these organs are the seat of pathological change. This, however, is not at all the case, it being my personal opinion that insanity occurs very infrequently as the direct effect of any pelvic lesion whatever.

In records of the cases of adolescent, puerperal, and menopausal insanity, it is noteworthy that the genitalia are normal in fully as large a proportion of the patients as in an equal number of sane women of the same approximate age and social station.

It is true, however, that the lesser disturbances of the nervous system, hysteria, neurasthenia, and even epilepsy are frequently aggravated if not caused by the presence of lesions of the pelvic organs, even though the disease is comparatively trivial in character. Malposition of the uterus or ovaries, the irritation incident to an old laceration of the cervix or perineum, or the chronic passive congestion induced by a procidentia uteri, are all important factors in the production of nervous instability. The anatomical cause of the interaction of the brain and central nervous system is difficult of explanation, but when one considers the important nerve centres situated in the pelvis, notably the hypogastric and sacral plexuses, it seems natural that a fairly direct connection must exist and that irritation of any or all of these nerve groups must be transmitted to the brain in greater or less degree.

A striking example of the direct relation of disease of the genitalia to mental disturbance is furnished by certain cases of nymphomania, a condition often traceable to some lesion of the clitoris and one which may be greatly benefited by proper treatment.

As surgeon to various missions working among prostitutes the writer treats annually many women of this class, among whom nymphomania in a moderate degree is not uncommon. There have been studied within the past two years, four cases of the condition, in all of which the erotic disorder was the cause of the women entering into a life of shame. In all four there was present some degree of sexual perversion with masturbation. On examination three showed marked hypertrophy of the clitoris with a clitoral phimosis, while the fourth case was marked by general vulvar congestion and the presence of engorged and dilated bloodvessels in the region of the clitoris.

In the first three patients the clitoris was com-

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pletely excised, its site being carefully covered with skin. In one case this procedure resulted in a complete cure, the patient abandoning all of her former habits and being now a trusted and efficient household servant. The other two patients were both markedly improved, one being happily married, while the other has continued her former habit of life, but in greatly improved health. The fourth case, in which there was such marked congestion, did not respond to treatment in any way and has become progressively worse.

Many cases might be cited illustrative of the often striking effect of the correction of comparatively slight pelvic lesions upon an irritated nervous system. The relief of hysteria, neurasthenia, and sometimes even of epilepsy by the repair of an old laceration of the birth canal, or the elevation of a retroverted uterus, are not infrequent occurrences in the practice of any active gynecologist.

With regard to the treatment, in general, of insane patients in whom there are present lesions of the pelvic organs, there has always been the utmost difference of professional opinion. Following the example of Batty, there arose a school of gynecologists who indiscriminately subjected to castration every nervous or insane woman who fell into their hands. This period of excess was naturally followed by its reverse, when even operations of necessity were forbidden in the insane, and such conservative measures as local pelvic treatment were discouraged. Recently, however, the true balance has been reached, and I think it now the consensus among both alienists and gynecologists that the mental state of the patient should play but a secondary part in the adoption of a proposed plan of treatment for any given disease of the genitalia.

To my mind the situation may be well summed up in a few definite rules. First: Operations of necessity, should be performed wherever indicated, whatever the mental state of the patient. In this class of cases I should include destructive inflammatory disease of the annexa, malignant tumors in their operable stage, and benign growths causing well marked symptoms, such as repeatedly growing ovarian cystomata, hemorrhagic or degenerating fibroids, etc.

Second: Purely elective operations should not be performed upon the insane unless, after careful consideration and study of the indications with the alienist, it is determined that the benefits accruing from the operative procedure will more than counterbalance the shock and strain incident to the anesthesia and the pain involved.

For example, in a case of any variety of insanity in which the patient suffered additional discomfort from the backache, dysmenorrhea, and leucorrhea incident to a retroversion of the uterus the rule would be to treat the pelvic condition locally by means of tampons, pessaries etc., rather than subject the woman to the shock and stress of an abdominal operation performed for the relief of a train of symptoms not having of necessity any bearing upon the primary mental disease.

If, though, after careful study and treatment, it becomes apparent that such a patient is being rendered more and more irritable as to her nervous condition, by the continuance of the symptoms de-

scribed, and if it seems apparent that the pelvic lesion is influencing the course of the mental disorder, then I think operative measures should be resorted to, in the absence of any positive contraindication such as general paralysis, progressive incurable cases, and the like.

Third: Operative procedures designed merely to produce some reflex or other not understood effect upon mental disorders, and practised without definite pathological basis, are absolutely unjustifiable and are mentioned only to be condemned. To this class belong the extirpation of healthy ovaries, the indiscriminate dilatation, curettage, etc.

The keynote of gynecological treatment among the insane is conservatism. The insanity already present must be considered as a serious contraindication to any surgical interference, and only when the apparent benefits of an operation of any character whatever, are considerably in excess of the risks of an exacerbation of the mental disease, should such interference be suggested.

348 SOUTH FIFTEENTH STREET.

Correspondence.

LETTER FROM EDINBURGH.

Medical Education in Edinburgh.—University Graduation Ceremonial.—Edinburgh Postgraduate Course.—Edinburgh Dental Hospital.—Caledonian Medical Society.—Medical Papers at the Royal Society.

EDINBURGH, July 24, 1912.

The system of medical education in Edinburgh has recently come in for severe criticism at the hands of an American investigator. A report on Medical Education in Europe has recently been issued by the Carnegie Foundation for the Advancement of Teaching. This report is based upon observations made by the author, Mr. Abraham Flexner, into representative medical institutions in Germany, Austria, France, and Great Britain. Referring to Edinburgh, he says: "Edinburgh furnishes another illustration of the defects resulting from excessive emphasis of local considerations. There medical education was furnished by the university faculty on the one hand, and the so called extramural school on the other. These two bodies have long competed for students. The extramural school is a loosely organized affair, under the nominal jurisdiction of the Royal College of Physicians and Surgeons. Not improbably the competition of the two schools may have been wholesome at a time when international ideals can hardly be said to have existed. But as university education in medicine develops, as English or Scottish universities enter a worldwide scientific competition, local animosities and contentions can only lower the standard, and divide resources, for if both the Edinburgh schools now came together under the university, the extramural drill in anatomy and chemistry would cease to suggest false standards of scientific teaching, and the entire royal infirmary might become a university clinical department, in the manning of which local and personal consideration might be sunk." In dealing with the various classes in detail, Mr. Flexner condemns the teaching of anatomy, saying that

the equipment is meagre and inadequate. The pathological collection he describes as poor, and laboratories for research nonexistent. He makes a strong point of clinical teaching, and while praising the enterprise and modern equipments of the Royal infirmary he urges that this institution be made more generally available for teaching purposes. There is doubtless much truth in Mr. Flexner's observations, and it is to be hoped that they will bear some fruit. Edinburgh at one time held first place as a medical teaching centre; confidence in our superiority has made us careless and others have advanced, while we have been content to be first and to think we were remaining so. But it is time we woke up to the state of affairs, and Edinburgh with its natural advantages, its well trained teachers, and its old reputation, might easily retain the position she seems to be in danger of losing.

The summer graduation ceremony took place at the McEwan Hall on July 12th. Honorary degrees (LL.D.) were conferred on Dr. H. B. Allen, of Melbourne, and Professor R. Ramsay Wright, of Toronto. Professor Alexis Thomson delivered a racy address to the graduates. His advice consisted mainly of "don't's," such as:—Don't decide in a hurry on your future line of work; don't be tempted to accept an undesirable appointment because there is a salary attached to it. Doctors should beware of salaries, they are usually inadequate. Don't marry until you have settled into some definite line of work; an early marriage limits a man's field, while a judiciously timed marriage greatly helps medical practice. Don't adopt extreme views on debatable questions, such as what is the most appropriate diet for a community, or should indulgence in alcohol or in tobacco be abolished or encouraged. Scottish doctors, he said, got credit for good sense in the matter of advice; the fact was they were more reticent and not so ready to give advice on all subjects.

Postgraduate courses of instruction in Edinburgh have again been arranged. There are to be three courses, in July, August, and September. The July course began on the 15th; it deals with diseases and defects of children. This is a new course, and occupies five hours daily for a fortnight. The August course will deal with internal medicine. The September course will be in three parts.

The annual gathering in connection with the Edinburgh Dental Hospital and School took place on June 27th. In presenting the prizes to the successful students, Dr. Graham Brown called attention to the gradual increase of conservative operations over extractions. In 1881, the number of such operations was 425; in 1891, they numbered 2,400; in 1901, they amounted to 3,400, while last year, the number was 13,968. The figures for extraction were: In 1881 about 4,000, for the next 20 years, about 5,000, while now they had sunk to nearly their original figure.

The annual meeting of the Caledonian Medical Society took place at Stonehaven on June 22nd. The society, which is composed of Scottish medical men, meets alternately in England and Scotland, and this year Stonehaven was chosen because it is the home of the president, Dr. W. A. Macnaughton, who occupied the chair twenty years ago, and now

does so for the second time. The meeting was well attended. The president chose for the subject of his address the Correspondence of James Grant, Factor of Pitarrow. After the address, the president was presented with a fur lined motor coat and some works of Celtic literature in recognition of the work he had done for the society since its inception. A dinner was held in the evening.

Several papers of medical interest have recently been presented to the Royal Society of Edinburgh. On June 17th Dr. John Brownlee communicated an examination of the observations, made by the late Doctor Beddoe regarding the color of eyes and hair. This analysis showed that practically all Doctor Beddoe's observations obeyed in a remarkable degree the laws of Mendelian inheritance, and that between hair and eyes there was a very marked association. The general result was to show that practically all the colors of the eye and hair could be explained by the current theories that the inhabitants of this country were a mixture of the three chief European races.

At the meeting held on July 1st, Dr. A. Ninian Bruce communicated a paper on Multiple Neuroma of the Central Nervous System; Their Structure and Histogenesis, by the late Dr. Alexander Bruce and Dr. James W. Dawson. The paper dealt with the completion of work in which Doctor Bruce was engaged when he died in June last year. It had regard to the fundamental structure of the central nervous system, particular attention being paid to the origin and relation of the nerve fibre to the nerve cell. The paper was based upon the record of a very rare condition found post mortem, in which scattered throughout the spinal cord and medulla oblongata, a number of small nodules were discovered. At the present time there are two views held of the relationship of the nerve fibre to the nerve cell, one regarding the fibre as an outgrowth from the cell, the other regarding the fibre as arising separately from the cell, and later becoming united to it. In the paper a very complete investigation was made of the literature bearing upon the subject, first from the point of view of the development of the nerve fibres from themselves; second, from the changes which take place during regeneration of the nerve after section; and, third, from the changes which occur in tumor formation. These views were analyzed and brought into harmony as to the result of the study of the modules present in the case, and it was pointed out that the evidence in favor of a multicellular origin of the nerve fibre with a secondary fusion of the nerve cell was strictly supported.

LETTER FROM LONDON.

British Medical Association Meeting

LONDON, ENGLAND, July 27, 1912

The eightieth annual meeting of the British Medical Association began at Liverpool yesterday. The president elect is Sir James Barr, of Liverpool, who delivered his address on Tuesday, July 23d, and the sections met on the three following days. The Address in Medicine was delivered by Dr. G. A. Gibson, of Edinburgh, and in Surgery by Dr. F. T. Paul, of Liverpool. There was a ball at the

Philharmonic Hall on Friday at 9 p. m. On Saturday a number of excursions were provided to places of interest around Liverpool. Among the principal social arrangements were the following: A garden party, by Dr. C. T. Street, at the Haydock Lodge Private Asylum, and later by the Lord Mayor and Lady Mayoress (Lord and Lady Derby) at the Botanic Gardens. The Booth Steamship Company entertained visitors to tea on board the S.S. *Hilary*, which was arranged to show the mosquito proof appliances. Messrs. Cammell, Laird & Co. showed visitors over their ship building and ship repairing yards, where a new dreadnaught is being built. On Friday, Lord Derby, the chancellor of the University of Liverpool, entertained visitors to luncheon at the Town Hall, after which a number of honorary degrees were conferred.

Therapeutical Notes.

Treatment of Chronic Metritis.—P. Mocquot and J. Mock, in *Revue de chirurgie* for May, 1912, advocate a procedure originally tried out by Delbet, consisting of the intrauterine injection of a thirty or forty per cent. solution of zinc chloride. After cleansing and drying the vagina, and ascertaining the permeability and position of the uterus with a sound, a fine cannula having minute lateral openings near its extremity is introduced to the uterine fundus and a quantity not exceeding two or three c. c. of a five per cent. solution of cocaine or novocain injected while the cannula is gradually withdrawn. Five minutes later, after a tampon has been placed beneath the cervix to protect the vagina, the cannula is reintroduced and an injection of zinc chloride solution, not exceeding one to two c. c. given. The cannula is rotated as it is withdrawn in order to spread the solution evenly over the mucous membrane. The vagina is then irrigated, but not tamponed.

After the first injection the patient should remain in bed a day; later, recumbency for four or five hours is sufficient. The procedure is not repeated until the eschar formed has been completely discharged, i. e., as a rule, in a week. The average number of injections required is three or four. Slight pains follow the injection in one out of four or five cases, and more severe pain, for which hot compresses may be applied to the abdomen or enemas containing tincture of opium given, once in about twenty-five cases—generally in women having annexal lesions.

Comparison of the results obtained by this method in 120 cases with Busse's statistics of cases treated by curettage show a marked advantage both in the percentage and permanency of results for the zinc chloride procedure. The greatest efficacy of the latter is seen in hemorrhagic metritis and in metritis following abortion; in the latter form, cure is almost certain, sometimes after but a single injection. In senile metritis and that accompanying fibromas the results are also good, though less prompt. In glandular and parenchymatous metritis, the pain is wholly relieved and the uterus reduced quite or nearly to its normal size. Subsequent conception and labor are not interfered with.

Treatment of Tinea Tonsurans.—A. Winkelried Williams, in the *British Journal of Dermatology* for June, 1912, states that he has found the following combination very effective in cases of widespread ringworm:

R Camphore, }
Alcoholis, } ana 5iv
Acidi picrici, grs. vii.

M. Sig.: Inflammable! To be painted over the entire scalp twice daily.

The hair should be closely clipped, the scalp washed once or twice a week, and a calico cap worn during the treatment. Generally the ringworm hairs are loosened and come away with their bulbous portions in from ten to thirty days. No unfavorable occurrences have attended the treatment, with the exception of slight tenderness and smarting in rare cases, and the yellow staining of the hair, which was still noticeable three weeks after stopping the applications.

Treatment of Anosmia.—H. Bourgeois, in *Progrès médical* for April 20, 1912, states that the loss of the sense of smell which follows influenzal coryza, irrigations of the nasal passages with cold water, the use of irritating antiseptic solutions, overindulgence in tobacco, alcohol, etc., often requires to be directly treated. In addition to removal, as far as possible, of the cause of the symptom, vibratory massage or inhalations of carbon dioxide may be employed to reawaken the irritability of the mucous membranes. Lermoyez recommends that a pinch of the following powder be snuffed up twice daily:

R Strychnine sulphate, 0.1 gramme;
Powdered orris root, 0.5 gramme;
Milk sugar, 10.0 grammes.
M. ft. pulvis.

Where these measures fail, treatment by means of the galvanic current is indicated. In the extra-nasal method the electrodes, consisting of metallic plates covered with chamois skin, are placed on the back of the neck and the bridge of the nose, respectively. Two or three sittings of ten minutes each, with a current not exceeding six milliampères, should be given weekly. In the intranasal method, one electrode, consisting of a carbon plate, four centimetres in diameter, is placed at the root of the nose, while the other, made of metal and surrounded by a cuff of absorbent cotton, is of the size of a pea. A current not exceeding three milliampères should be passed for five to ten minutes through each of the lateral nasal parietes.

Antiseptic Gargles.—*Nouveaux remèdes* for May 24, 1912, recommends the following preparations for purposes of oral antiseptics in the presence of decayed teeth:

R Thymolis, 0.5 gramme;
Sodii boratis, 1.0 gramme;
Alcoholis, 2.0 grammes;
Aque destillatæ, 1,000 c. c.

M. ft. solutio. Sig.: Use as a gargle.

Or,

R Acidi salicylici, }
Benzosulphidini, } ana 5 grammes;
Sodii bicarbonatis, }
Alcoholis (60 per cent.), 150 grammes;
Olei mentha piperitæ, 4 drops.

M. ft. solutio. Sig.: Place a few drops in water and use as a gargle.

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SEX INSTINCT AND ITS PERVERSIONS.

In his interesting communication in this issue of the JOURNAL, on sex crimes, Dr. Austin Flint confines his attention mainly to sadism, that being the crime which, obviously without mentioning the name, has of late occupied considerable space in the New York daily papers. It does not speak well for the general scientific attainments of American physicians that so little is known here concerning the sexual aberrations, and it is somewhat of a shock to find upon inquiry that a large medical bookstore does not stock the principal modern works on the subject. A sort of frightened curiosity is not a very scientific or dignified attitude on the part of a profession whose duty it is to know every ramification of the human mind both in health and disease. The singular and epoch making studies of Freud, for example, have provoked in certain quarters here either the open mouthed astonishment of a vaudeville audience or a resentment resembling that of the narrower theologians when Darwin first threw his brilliant light upon the origin of life.

The sexual instinct is, after self preservation—to which indeed it forms a corollary—the most powerful law of nature. It has played a rôle of unsurpassed importance in history, it complicates almost every legislative programme to the confusion of all

minds, from that of the planning statesman to that of the law enforcing policeman, it derides the thunders of the pulpit and the bars of the jail, it lies at the foundation of our social system, it is inextricably entangled with religious sentiment itself. It is a convention to pretend blindness to this transcendent importance of the sexual instinct and to counterfeit contentment with the passage of prohibitive laws, unenforceable and known to be so.

If the normal sexual instinct implanted in man thus gives rise to so many complications, its vagaries, perversions, and inversions, by no means uncommon, lie at the base of much that has been inexplicable in the criminal and the insane. Peremptorily to dismiss these sexual aberrations as deliberate and vicious is a gross display of ignorance on the part of the physician. They have proved intractable to every therapeutic means so far tried, although some hope has been expressed at results obtained by suggestion under hypnotism. The perversions are apparently congenital, for although practised by the average child in ignorance, they do not persist into normal maturity. The perversion is as imperious as the normal instinct in a normal individual and, from lack of opportunity for indulgence, becomes an overpowering desire, uncontrollable even by fear of death, as proved by the crime of Swartz, while the possibility of exposure, as evidenced in the Thaw case, is no deterrent whatever. That the perverted impulse is often accompanied by great cunning is abundantly proved by the escape of Jack the Ripper.

In sadism the orgasm is induced simply by the acts of beating or cutting. In the opposite condition, to which the name of masochism has been given, there is a desire to be beaten or cut; in its milder form it is familiar to all in the person of the henpecked husband. As with the chronic adult masturbator, there is generally no desire for normal intercourse, and this phenomenon has given rise to grave complications in Europe when, in the case of genuine homosexual invert husbands, of royal or noble family, there has been high State reason for the production of offspring. Fortunately in America marriages of this kind are almost impossible.

The contempt and horror in which sufferers from sexual abnormalities are held, should not be felt by the medical profession. Notwithstanding the profound study given to these cases by some of the best medical minds in Europe, it is not yet decided whether or not sexual perversion is a form of insanity, whether it is an allied psychosis, or even whether it leads to dementia or other alienation. It is very seldom that a pervert of any kind commits suicide; Swartz's self murder is almost unique in annals of the kind. The pervert is a profound ego-

tist, full of bravado, and goes to the chair or scaffold with the air of a hero and martyr.

In large cities the homosexual pervers herd together, either in clubs of their own, or in some low class saloon. They are accustomed to give an annual ball, or "drag," in which they appear costumed as members of the opposite sex and where, as the night wanes, orgies of the most revolting kind are likely to take place. Police interference has proved powerless to prevent gatherings of the kind. The existence of these pervers, be their mental condition what it may, is a menace and a disgrace to civilized communities. The problem is one for the physician, and the remedy may be found in castration; if so, let this remedy be legalized after a few cases of voluntary submission. Outside of his sexual perversion the patient is apparently normal; he may be a business man, an artist, an author, of great talent, even a genius; he might well submit to emasculation rather than involve one or more families in hopeless disgrace. Incarceration is futile and unjust as well. Full recognition of the existence of these extraordinary beings is required and a frank confronting of the enigma they present. A shuddering withdrawal from the sight of a pathological condition is no proper procedure for a man of science.

THE PLAGUE SITUATION.

The outlook in the plague situation in Porto Rico and Havana seems to be a good deal more reassuring from the last reports issued by the Public Health and Marine Hospital Service. There have been in Porto Rico, up to and including July 21st, forty-two cases and twenty-three deaths, of which twenty-eight cases occurred in the old city of San Juan; nine cases in Santurce, a residential suburb of San Juan; two at Carolina, a town thirteen miles from San Juan; one at Loiza, a short distance from Carolina and sixteen miles from San Juan; one at Arroyo, forty miles from San Juan; and one at Dorado, twelve miles from San Juan. Rat extermination is carried on carefully. In San Juan there were found between July 10th and 13th, two infected rats among a total of thirty-eight; in Carolina, 287 rats with ten infected; in Santurce, 139 rats with four infected; in all Porto Rico there were examined 679 rats, of which thirty-six were infected. From Havana we have the reports of three cases, one fatal, on July 12th. The third patient, whose case was reported on July 22d, lived in the same house as the second patient; he had been ill for nine days during which time he had been isolated. Over three thousand rats have been caught in Havana without finding, upon necropsy,

any that were plague infected. There are fifty men engaged in Havana in trapping and putting out poison, especially in the districts near the wharves where the three cases of plague in man have occurred. There are three cement and iron wharves which are absolutely rat proof and which are now used for the greater part of the outgoing freight. From Hawaii we hear that the last case of human plague occurred at Honokaa on March 15, 1912; and since April 24th, no more plague infected rats have been found in the district of Hilo, Honokaa, and Kapulena.

PUBLIC MEASURES FOR THE CONTROL OF CEREBROSPINAL MENINGITIS.

In a *Public Health Report*, some time ago, W. H. Frost, of the Public Health and Marine Hospital Service, stated that efforts to minimize the damage from this disease should follow two lines of procedure, first, prevention of its spread, and, second, reduction of mortality and disability by providing facilities for the most advantageous treatment. Naturally prevention is the more desirable method, but unfortunately the most rigid measures of this kind offer at best a very doubtful hope of reducing materially the prevalence of the disease, whereas properly managed serum therapy may be expected to reduce the damages done to one half or even one seventh. The author considered that public health authorities should take an active part in the serum treatment of cerebrospinal meningitis. There are several reasons for this, chief among them the fact that for the best results expert services which are not available in all communities are required. These expert services are demanded, not only in the administration of the serum, but likewise for the diagnosis, which requires special bacteriological knowledge and laboratory equipment. Furthermore, the serum is sufficiently costly to be unavailable to the very poor, which is an added reason for governmental control and treatment of the disease.

It is believed that the most effective work which can be done by State and municipal authorities in controlling epidemics of the disease is along lines of rendering assistance in its treatment. In order to do this to the best advantage all suspected cases should be promptly reported to the local authorities, and diagnosis should be established by means of an expert employed for this purpose by the health authorities. He should visit the case in consultation with the reporting physician, and his opinion should be further confirmed by an expert bacteriologist, with a laboratory established in the immediate vicinity to examine and report upon specimens of cerebrospinal fluid.

Treatment should be undertaken in hospitals with the necessary staff of qualified physicians. In many communities it will be found feasible to employ local men to take charge of the diagnostic and therapeutic measures, but in any event, the State or municipality should bear the expense of treatment, including the serum, medical aid, and hospital attendance.

Although seemingly insuperable obstacles present themselves in the way of effectually preventing the spread of the disease, it is considered that something may be done in this way by the prompt reporting of all suspicious cases and the isolation of the patients, together with the disinfection of the nasopharyngeal discharges. Beside these precautions the ordinary measures taken in preventing the spread of the more common infectious diseases should be observed, such as placarding the houses, public notification, restriction of communication between the associates of the patient and others, and in special cases the closing of the public schools and the prohibition of public gatherings. Finally, the author concludes that the administration of hexamethylenamine in moderate doses may act as a possible though quite unexplained prophylactic.

The somewhat drastic measures thus recommended may appear to some of our readers as an infringement upon the individual rights of the people and an interference with the local physician which the exigencies of the case do not demand. When we consider, however, that cerebrospinal meningitis treated by the old methods carries with it a mortality that varies in different epidemics from fifty-two to eighty per cent., whereas, by the administration of the serum within the first three days of the disease recovery almost invariably follows, we are certainly justified in favoring any method of procedure which seems to offer the best guarantee of successful administration. Furthermore, with the growing tendency to consider the public health as a public asset, it seems that the recommendations of Frost are in line with the progress of the times.

THE IMPORTANCE OF ORAL ASEPSIS.

We have frequently urged upon our readers the high importance of keeping the mouth as clean as our faulty diet permits, and the necessity of noting the condition of the teeth in every patient presenting himself for physical examination. In the *Boston Medical and Surgical Journal* for July 25, 1912, there is an instructive communication on institutional dentistry from Frederick A. Keyes, D. M. D., which corroborates our opinion in a most satisfactory way. Doctor Keyes, by a systematic and ingenious method, managed to place and keep in good

condition the mouths of some 350 children in a Boston orphan asylum, with the result of the practical abolition of infectious disease from the institution. The writer modestly acknowledges the possibility of mere coincidence; but his readers will agree, we think, that his labors had a due and scientific reward. A perfect denture is as good as it is beautiful.

IMMUNITY OF RATS TO PLAGUE.

In a very interesting article on the Technique of the Laboratory Examination of Rats for Plague, the *Public Health Bulletin* for July 26th remarks that, contrary to the general impression, the wild rat is not specially susceptible to plague infection. Thus the Indian Plague Commission found that when the animals were inoculated by the cutaneous method from the spleen of infected rats, fifty-nine per cent. were immune to infection. Similar is the report from the Federal laboratory in San Francisco, which showed that when inoculated with highly virulent cultures of *Bacillus pestis* there is an immunity, more frequent, however, among large rats. When inoculated cutaneously with tissue containing large numbers of *Bacillus pestis* from plague infected man, rats, or squirrels, about fifteen per cent. of small rats and fifty per cent. of large ones were found to be immune. These rats were not immune from a previous attack. Another statement from the paper quoted is also of interest; that is, that rats are readily immunized by antiplague serum. Important also is a paragraph which treats the subject of transfer of infection directly from rat to rat by cutaneous or subcutaneous inoculation through a series of animals. The Indian Plague Commission had no difficulty in carrying infection through twenty-six transfers, using from five to six rats in each transfer. Similar results were achieved in experiments conducted in San Francisco. But Pound, in Queensland, in a series of eight experiments, was never able to convey the infection successfully beyond the sixth rat, using but one rat for each transfer. Baxter-Tyrie, in the *Journal of Hygiene*, 1905, remarks: "It is probable that under certain natural circumstances a reduction in the virulence of the organism is effected and a comparative immunity is conferred on the rats. The infection of immigrant rats is, however, severe, and their arrival is heralded by a heavy mortality. In the same manner an infected rat imported into a fresh locality produces a similar result. This attenuation of virulence is responsible for the condition known as chronic rat plague."

PITUITARY EXTRACT IN LABOR.

Siguret reported to the Société d'obstétrique et de gynécologie de Paris, on July 8th, his observations at the Tarnier clinic of twenty-seven parturient women who received injections of pituitary extract. He used exclusively extract from the posterior lobe of the goat in doses of thirty centigrammes, and from the posterior lobe of the ox in twenty centigramme doses. No unfavorable re-

sults were noted, and the arterial tension and the pulse of the mother, as well as the fetal heart beat were unaffected; hemorrhage was perhaps somewhat profuse. As reported in *Presse médicale* for July 13th, the action of the extract was prompt and the injection was followed by a "tempest of contractions"; in two cases there was vomiting.

A DRY CLIMATE.

Canadians were disposed to resent the poetical title of Our Lady of the Snows conferred upon their country by Rudyard Kipling some years ago, under the erroneous impression that immigration would be unfavorably influenced if the idea got abroad that the Dominion was perpetually snow-bound. Only those who have been in the Province of Quebec, or in Vermont, New Hampshire, or Maine, in the depth of winter, can realize the delights of the climate and the stimulating and delicious quality of the dustless air, as set forth by Professor Blackader in this issue of the JOURNAL. For the benefit of the tuberculous and the neurasthenic stress might well be laid on Kipling's personification; and possibly the time is coming when the social capital of the continent will be found in winter, not in Florida, but somewhere in the region extending from the Laurentian mountains southward to those of northern New York and New England.

Medical Law.

I. THE RIGHT TO PRACTISE MEDICINE AND SURGERY.

The extent to which people without medical education and qualification will often go in taking advantage of the credulity of the public, even in the face of efficient medical legislation, is illustrated in the recent case of Stiles vs. State 148 South-western Rep. 326.

In this case a Mrs. M. E. Stiles, of Sabine County, Texas, who admittedly was without the requisite medical training and education was, as the evidences show, clearly engaged in the practice of medicine. Upon the trial of the case, one witness testified that he knew Mrs. Stiles, that she came to his boarding house on August 30, 1911, remaining three days, during which time he distributed a lot of circulars for her and told people generally that she was at his house and would treat various diseases. The circulars he distributed were as follows:

Mrs. Dr. M. E. Stiles treats all kinds of chronic diseases, is now at Walker Hotel, Brookeland, Texas. I treat rheumatism, neuralgia, cancers, dropsy, piles, scrofula, catarrh, liver affections, female complaints, indigestion, eczema, bladder and kidney troubles, dyspepsia, tetter, asthma, nervous debility, St. Vitus's dance, biliousness, vertigo, spinal affections, constipation, paralysis, lung troubles, if not in the last stage, old sore legs, ulcerated and granulated sore eyes, ulcerated old sore legs, epileptic fits (if not caused from deformities or malformation of the skull or self abuse), chronic diarrhea, and all kinds of chronic diseases. I treat with nature's remedies only, herbs, roots, bark, and flowers. I make my own medicines and am sole agent for the same. Have good testimonials to cases I have cured. Any one wishing to consult me can call at the hotel. Mrs. M. E. Stiles.

Here for the next four days or until next Sunday, September 3d, at noon, I will leave for Jasper, Texas

Another witness testified that he became acquainted with Mrs. Stiles in the summer of 1911; that his wife was sick, and after trying different treatments heard of Mrs. Stiles's treatment of others and decided to get her to treat his wife; that she came to his house in Sabine county, stayed there the better part of two or three weeks, treated his wife, prepared medicines for her which she took; and that he himself also took medicines that she prepared for him for liver complaint; that Mrs. Stiles prepared her own medicines so far as he knew; and that she gathered roots and herbs, and used them in the preparation of her remedies; that she charged for treating his wife and he paid her for it.

Another witness testified that Mrs. Stiles began treating her for cancer and prepared treatment for it and gave her directions how to use it; that she used the treatment from the time the treatment first began and was still using it at the time of the trial, which occurred on September 11, 1911; that Mrs. Stiles charged her \$27.50 for the treatment, and that the money was paid for the witness by her daughter.

Another witness testified that she first met Mrs. Stiles on or about September 1, 1911, in Sabine county, at Walker's Hotel, and bought from her an assortment of medicines which were remedies for different ailments that the witness was suffering from, that she paid Mrs. Stiles \$4 for medicines, and that Mrs Stiles gave her written directions how to take the medicine.

It appears that this testimony was uncontroverted and, as the Court found, Mrs. Stiles had without doubt practised medicine in the county of Sabine, on and about September 1, 1911, and had advertised herself as practising medicine and received pay for her practice and for medicine that she sold for the treatment of diseases.

The only questions that appear to have been seriously presented to the Court of Appeals were technical ones. First, whether or not the prosecution was, under a certain section of the medical act, requiring allegations and proof that the defendant was not registered in the county in which the unlawful practice of medicine was alleged to have taken place. This point was held by the Court of Appeals to be untenable for the reason that the prosecution was held under other sections of the act which provided that, "any person practising medicine in the State in violation of this act shall upon conviction thereof, be fined in any sum not less than \$50, nor more than \$500, and be imprisoned in the county jail for a term not exceeding six months."

Second, whether a conviction could have been based upon acts proved to have been committed on days other than September 1 and 2, 1911, the act having provided that each day should constitute a separate offence. The Court of Appeals held that this position was also untenable for the reason that under the allegations the State was permitted to prove acts committed during the latter part of the summer, and up to and including September 1, 1911, and that the proof supported the conviction.

X. THE PHYSICIAN AS WITNESS.

In the case of Gulf, W. T. & P. Ry. Co. vs. Abbott, 146 Southwestern Rep. 1079, the plaintiff, in attempting to leave a car of the defendant company which had stopped at a point where there was no platform, and where a distance of about two feet intervened between the lower step and the ground, fell on her right foot which turned, then fell on her knee, as a result of which she sustained serious injuries, with partial paralysis of her right leg, and about eighteen months after the injury, pieces of bone ranging in size from one half to one and a half inch in length, worked their way out to the surface of the plaintiff's body. Upon the trial the jury gave a verdict of \$7,500, upon which judgment was entered. The defendant appealed from this judgment, and among other things urged error in receiving certain evidences of the physician who testified upon the trial. It appears that one of the questions put to the physician which was objected to, was, "What in your judgment created the sinus that you have explained about?" To which the physician answered, "Why, the condition shows every indication of its being produced by a foreign body working through the muscle." Upon the propriety of this question and answer, Mr. Justice James said:

The answer was properly admitted, being the opinion of an expert physician upon a state of facts that he had testified about, and was not subject to the objection that it was a conclusion of the witness and invaded the province of the jury. The proposition that a physician cannot give his opinion on a state of facts, which facts are controverted, is clearly untenable.

The defendant, upon appeal, also urged that in a suit for damages for personal injuries, the opinion of an expert in answer to such a hypothetical question is inadmissible in the development of plaintiff's prima facie case for the purpose of establishing the existence of such injuries, where the issue is not whether such character of accident could cause such injuries, but whether or not it did cause the same. In passing upon this objection the justice said:

There is nothing in this proposition. Plaintiff was clearly entitled to adduce any testimony of a competent character to connect the cause and proximate results of the injury. This the plaintiff was entitled to do in making out her case, as well as at some other stage of the proceeding.

News Items.

Changes of Address.—Dr. L. R. Hurlburt, to 102 Niagara Street, Lockport, N. Y.

Dr. T. Weston Chester, to 143 North Tremont Street, Hartford, Conn.

Dr. Albert Carr Rice, to Sayville, N. Y.

Dr. D. H. Dommett, to Ilion, N. Y.

Dr. J. J. Carroll, to 185 Chestnut Street, Holyoke, Mass.

Dr. Charles D. Thompson, to 87 Cedar Street, Boston, Mass.

Dr. Harry R. Frost, to Rutland, Vt.

Dr. J. I. Pickney, to Westfield, Mass.

Hookworm Disease in Kentucky.—Ten stations for the study and treatment of hookworm disease were opened in Knox County, Ky., on July 22d, under the supervision of the State Board of Health. Government experts will assist in the examinations made by members of the board at these stations. It is estimated that about 20,000 persons in the Kentucky mountains are afflicted with hookworm disease.

Pellagra.—During the week ended July 6, 1912, pellagra was reported as follows: Chicago, Ill., 1 death; Montgomery, Ala., 5 deaths; Roanoke, Va., 1 case and 1 death.

Leprosy.—Samuel Isen, one of the two lepers recently reported at Bay City, Mich., broke quarantine and was missing July 15th. On July 22d Dr. Francis E. Fronczak, commissioner of health of Buffalo, reported that Isen had been found in Buffalo and was being isolated at the Contagious Disease Hospital. Dr. Sherman Williams, president of the Colorado State Board of Health, reported July 22d that there was in detention at Denver a man giving the name of C. W. Carson, who stated that he was a leper, having escaped from the leper colony at San Francisco about May 2d and travelled over the country since that time in a box car.

New York Postgraduate Medical School and Hospital.—At a reorganization meeting of the board of directors of this institution, Dr. James F. McKernon was elected president; vice-president Dr. George N. Miller resigned. The officers are as follows: President, Dr. James F. McKernon; second vice-president, Dr. Edward Quinard; treasurer, William Fahnestock, Esq.; secretary, Dr. Arthur F. Chace; secretary of the faculty, Dr. George G. Ward, Jr.; superintendent, Dr. H. T. Summersgill.

The North Carolina Medical College has announced the faculty for the season of 1912-1913 as follows: Dr. E. C. Register, emeritus professor of the practice of medicine; Dr. B. C. Nalle, professor of principles and practice of medicine; Dr. H. E. McKay, professor of physical diagnosis; Dr. Addison Brenner, professor of operative surgery; Dr. F. L. Black, professor of medical jurisprudence; Dr. J. W. Squires, professor of rectal diseases; Dr. W. R. Engle, clinical professor of tuberculosis; Dr. John Donnelly, clinical instructor in rectal diseases; Dr. Portia McKnight, clinical instructor in the practice of medicine; Dr. Yates Faison, associate professor of diseases of children and clinical medicine.

Delegates from American Academy of Medicine to Hygiene Congress.—At a recent meeting of the American Academy of Medicine the following members were named to attend the International Congress on Hygiene and Demography, which is to be held in Washington, D. C., September 23d to 28th: Dr. Joseph K. Weaver, of Norristown, Pa., chairman; Dr. L. H. Beck, of Manitou, Colo.; Dr. Richard H. Beck, Becktown, Pa.; Dr. Guy L. Connor, of Detroit; Dr. Edgar Moore Green, Easton, Pa.; Dr. M. P. E. Grossmann, of Plainfield, N. J.; Dr. Ernest Bryant Hoag, University of California; Dr. Ruth Webster Lathrop, Women's Medical College of Pennsylvania, Philadelphia; Dr. Charles McIntire, of Easton, Pa.; Dr. George C. Mosher, of Kansas City, Mo.; Dr. Horace Newhart, of Minneapolis; Dr. Helen C. Putnam, of Providence; Dr. F. W. Schultz, of Minneapolis, and Dr. Oliver W. Turner, of Augusta, Me. The academy expects to name additional delegates.

Personal.—Dr. W. T. Barger, of Cleveland, Ohio, is the new resident physician at the Jackson Health Resort, Dansville, N. Y.

Dr. W. W. Richardson, resident physician of the State Hospital for the Insane at Norristown, Pa., has tendered his resignation, to take effect in October. Doctor Richardson will go to Pittsburgh, where, it is said, he will open a private sanatorium.

Dr. S. S. Woody, of Philadelphia, chief resident physician of the Municipal Hospital, on July 24th sailed for Europe, where he will spend six weeks in investigating contagious disease hospitals in London, Dublin, Belfast, Edinburgh, Glasgow, and Paris.

Dr. John N. E. Brown, formerly superintendent of the Toronto General Hospital, has been appointed superintendent of the General Hospital of Detroit. He will enter upon his duties on September 1st.

Dr. Arthur S. Unger is now associated with Dr. W. H. Stewart in the radiographic department of the Harlem and Fordham Hospitals.

Professor Ludwig Pick, of Berlin, will deliver the Cartwright and other lectures, in New York this fall. His American students, of whom there are about 600, will tender Professor Pick a complimentary dinner, Saturday evening, November 16, 1912. Those desiring particulars should communicate with Dr. Charles Goodman, 960 Madison Avenue, New York.

Pith of Progressive Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

July 18, 1912.

1. FRANK SHERMAN MEARA: General Practitioner An Idealization.
2. L. PIERCE CLARK: Pathogenesis of Epilepsy.
3. WILLIAM F. BOOS: Alcohol as Drug.
4. JAMES LINCOLN HUNTINGTON: Regulation of Midwifery.
5. PAUL MCLENNERY: Hyperemic Treatment of Acute Anterior Poliomyelitis.
6. ROGER KINNICUTT and W. J. MIXTER: Actinomycosis Treated with Vaccines.
7. C. H. DEAN: Three Cases of Pellagra.

2. **Epilepsy.**—Clark summarizes the results of recent studies concerning the pathogenesis of epilepsy, because the sedative treatment is still the main one followed by most physicians. 1. Genuine epilepsy seems to be dependent on certain unknown complex heredity factors, producing a form of cortical and subcortical instability upon which a variety of endogenous toxins may act, causing the disease. 2. The fit is an exhibition of a reflex action of the disease and as such should not be seriously interfered with by sedatives *per se*. The sedative treatment of epilepsy is therefore to be discouraged as long there is hope of bringing the real clinical pathogenesis of the disease under control.

6. **Actinomycosis.**—Kinnicutt and Mixter treated eight cases of actinomycosis with vaccines. Two were pulmonary cases that were well advanced when first seen, grew rapidly worse, and ended fatally. Two were abdominal, and in these there was marked improvement in one, perhaps a cure in the other. Four were cervicofacial; three of these have apparently ended in recovery and one is rapidly improving.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

July 20, 1912.

1. C. JEFF MILLER: Present Status of Ligation or Excision of Pelvic Veins in Treatment of Septic Thrombophlebitis of Puerperal Origin.
2. R. R. HUGGINS: Ligation or Excision of Ovarian or Deep Pelvic Veins in Treatment of Puerperal Thrombophlebitis.
3. JOHN H. W. RHEIN: Tuberculous Meningitis.
4. M. G. STURGIS: Changed Personality Due to Head Injury.
5. ALFRED GORDON: Adipositas Cerebralis in Its Relation to Tumor of Hypophysis.
6. EDWARD A. RICH: Atrophic Form of Little's Paralysis.
7. RICHARD L. SUTTON: Xanthoma Tuberosum Multiplex Vulgaris Mistaken for Myomatosis Cutis Disseminata.
8. B. M. EDLAVITCH: Primary Carcinoma of Lung.
9. W. D. GATCHE: Aseptic Intestinal Anastomosis.
10. F. J. COTTON: Operative Treatment in Joint Fractures.
11. LEONARD W. ELY: Surgery of Bones and Joints.
12. LEWIS S. MCMURTRY: Intestinal Complications in Gynecological Operations.
13. F. CONGER SMITH: Useful Procedure in Submucous Resection of Nasal Septum.
14. W. ALLAN: Thymol for Tania saginata.

1. **Present Status of Ligation or Excision of the Pelvic Veins in Septic Thrombophlebitis.**—See this JOURNAL for June 8, 1912, page 1220.

2. **Ligation or Excision of the Ovarian or Deep Pelvic Veins in Puerperal Thrombophlebitis.**—See this JOURNAL for June 8, 1912, page 1220.

3. **Tuberculous Meningitis.**—Rhein reports an interesting point in connection with the study of the plasma cell in tuberculous meningitis, viz., that they were not found in all his nine cases. In six cases, however, they were present to a greater or less extent. This differs from the observations of Diamond, who found them present in both chronic and acute cases of tuberculous meningitis. The origin of the plasma cell the writer notes, is at present a matter of dispute.

4. **Changed Personality Due to Head Injury.**—Sturgis reports a case of this character, the interesting point of which is the long duration of the mental lapse, which persisted for about fourteen years.

6. **Atrophic Form of Little's Paralysis.**—Rich bases his remarks on three cases. In this disease, there is a lack of development, accompanied by an atrophy of all the parts of the body except the bony skeleton, the atrophic condition modifying the symptomatology, which is dependent on a lower cortical involvement than the ordinary type. The lesions involve the pons and the pituitary body, but do not affect the cranial nerves to any great extent. The atrophic form of cerebral palsy is a distinct entity, the characteristic difference from the usual form of Little's disease being in the arrested development of all parts of the body except the skeleton. The presence of a train of symptoms not present in the usual cerebral spastic palsies is due to the difference of the condition.

8. **Primary Carcinoma of the Lungs.**—Edlavitch reviews the literature and is led to the conclusion that the occurrence of primary pulmonary carcinoma as a definite pathological entity has been proved beyond a doubt. The origin of the tumor is generally in the epithelium of the bronchi, but not infrequently in the alveolar epithelium, more rarely in the epithelium of the bronchial glands. It occurs three times more frequently in the male sex. The right side is affected about twice as often as the left. It is usually unilateral, often well circumscribed, and may involve part or all of a lobe or an entire lung. Involvement of the bronchial lymph nodes is the rule, but other parts, principally the brain which appears to be especially susceptible, may be the seat of secondary metastases. Pleural effusion, generally hemorrhagic, is of frequent occurrence, and in suspected cases the presence of large epithelial cells in this pleuritic fluid is important as regards diagnosis.

9. **Aseptic Intestinal Anastomosis.**—See this JOURNAL for June 15, 1912, page 1206.

10. **Operative Treatment in Joint Fractures.**—See this JOURNAL for June 15, 1912, page 1206.

11. **Surgery of Bones and Joints.**—See this JOURNAL for June 15, 1912, page 1206.

12. **Intestinal Complications in Gynecological Operations.**—See this JOURNAL for June 15, 1912, page 1203.

13. **Useful Procedure in Submucous Resection of the Nasal Septum.**—Smith prefers making the necessary incision by the cautery electrode instead of the knife, and claims for his method a greater degree of antisepsis, absence of bleeding, absolute knowledge of the necessary depth of the incision, and a recession of the seared edges of the incision, making elevation easy and quick. Primary union as seen in the nose, is apparently not retarded.

MEDICAL RECORD.

July 20, 1912.

1. V. P. GIBNEY: Still's Disease.
2. WILLIAM S. BAINBRIDGE: De Keating-Hart Method of Thermoradiotherapy.
3. CLYDE R. MCKINNIS: Mental Disease Treated with Salvarsan with Special Reference to Blood Pressure during Injection.
4. WOLFF FREUDENBERG: Local Anesthetics in Upper Respiratory Tract, Including Adrenaline Preparations.
5. WILLIAM L. RUSSELL: Mental Hygiene Movement.
6. PERCY A. PERKINS: Large Incision and Reason for It.

1. **Still's Disease.**—Gibney reports an interesting case of this disease which at one time simulated tuberculosis, the patient having a small area of consolidation in the left lung, and later rigidity of the spine and apparent tuberculous infection of the upper dorsal and lower cervical vertebrae. X ray pictures revealed absolutely nothing in the bony or cartilaginous structures of spine, thorax, feet, or wrists. The lungs and pleurae were found almost absolutely normal. The diagnosis was thus easy. All the symptoms that made up the clinical picture were symptomatic of absorption. There seemed to be some central focus which threw out septic matter into the circulation at irregular intervals, located probably in the mediastinum. The treatment adopted was thymus extract, beginning on five grains, three times daily, upon which a gradual and steady improvement followed.

2. **De Keating-Hart Method of Thermoradiotherapy.**—Bainbridge, in a former paper on fulguration (see this JOURNAL for July 20, 1912, page 134), referred to cases in which fulguration alone was not indicated, and in which fulguration combined with thermoradiotherapy was employed. The method consists in the sensitization of the tissues by fulguration, or other means, and their irradiation, the skin surface through which the x rays must pass being previously or simultaneously cooled in order to prevent dermatitis. From a consideration of the five cases, the author arrives at the conclusion that the x rays have a more intense action upon warmed cells than upon cold ones. A more rapid destruction of the cancerous tissues with a weaker dose is produced by previously cooling the surface of the normal tissues to be traversed by the x rays. This treatment is applicable to the majority of cancers, but the autointoxication resulting from the cytolysis renders it best to remove as much of the cancer as possible and to fulgurate the field of operation in operable cases. Thermoradiotherapy alone may be employed in inoperable cases, and with patients who refuse all operative aid, care being taken to prevent too rapid cytolysis and consequent autointoxication. It is observed that when cancer has been completely removed and fulgurated, the tissues show the same sensitiveness to x rays as do warmed cancers.

3. **Treatment of Mental Disease with Salvarsan; Blood Pressure During Injection.**—McKinniss believes that the intravenous administration of salvarsan is a simple procedure entailing no serious complications. He found that there was very little change in the blood pressure, even when 195 c. c. were injected. Considerable improvement followed treatment in two patient whose psychoses were thought to be due to cerebral syphilis; in two cases of paresis there was temporary improvement from which the author concludes that little benefit will follow this treatment in cases of paresis. No advantage over mercurial treatment was noticed.

4. **Local Anesthetics in the Upper Respiratory Tract.**—Freudenthal gives careful consideration to the various affections of the upper air passages, the different local anesthetics used, and the technique of application, and emphasizes the importance of being on guard against the toxic effects of cocaine and its derivatives, and a special warning of

care in the use of adrenalin, "that wonderful remedy, without which laryngologists could hardly exist."

5. **The Mental Hygiene Movement.**—Russell says this is an attempt to bring about broader social organization for dealing with mental disorders. This country at present leads the movement which has not yet assumed definite form in Europe. There is an International Committee, but it has not yet begun active work. In this country definite organization has been arrived at, and there are already four principal centres of activity. Three of these are State organizations (New York, Connecticut, and Illinois); the fourth is the National Committee for Mental Hygiene, which was formed in 1907 and whose objects are: (a) To work for the protection of the mental health of the public; (b) to help raise the standard of care of those ill or threatened with mental disorder; (c) to promote the study of mental disorders, and to disseminate knowledge on causes, treatment, and prevention; (d) to obtain reliable data concerning conditions and methods of dealing with mental disorders; (e) to interest and enlist the aid of the Federal government; (f) to coordinate the existing agencies and aid in organizing in each State in the Union an allied but independent society for mental hygiene. The State organizations follow out the ideas of the national committee in disseminating information, promoting the establishment of outpatient departments, and psychiatric wards in general hospitals and starting psychiatric observation hospitals. Individual patients are assisted, and desirable legislation is promoted.

6. **The Large Incision and the Reason.**—Perkins makes a plea for the large incision in operations upon the abdominal cavity, especially where the peritoneum is involved. The four reasons advanced are: Safety, speed, surety (of diagnosis), and a larger measure of success. The common reasons against the large incision are a prolonged recovery and the liability to hernia. The answer to the first objection is, that with the present day aseptic technique and a proper care in the closure of the wound, the fourteenth day should see the patient up and about. Concerning the second objection, hernias are rare, the best operators averring that one is never seen following a clean case. The use of an abdominal binder or supporter, after getting up, is not considered necessary.

BRITISH MEDICAL JOURNAL.

July 13, 1912.

1. G. E. HASLIP: State, Poor, and Our Profession.
2. E. N. MASON: Modern Social Changes and Legislation as They Affect Medical Profession.
3. J. TURNER: Changes in Conception and Treatment of Insanity during Past Twenty-eight Years.
4. C. GIBSON: Plea for Harrogate and Other English Health Resorts.
5. L. M. ROUTH: Parotiditis Associated with Glycosuria and Acidosis.
6. THOMAS LEWIS: Electrocardiography and Its Clinical Importance.
7. P. P. COLE: Subperiosteal Hematoma.

3. **Changes in the Treatment of Insanity.**—Turner speaks of the state regulation of marriage and of the other proposals for the prevention of the transmission of insanity by interference with reproduction, such as the sterilization of the mentally unfit. He does not believe that a defective person necessarily begets deficient offspring, but on

the contrary is of the opinion that the offspring of a clever parent who has had an attack of insanity stands a better chance of becoming a useful member of the community than one whose parents are labelled sane, but who have not an ounce of intellect between them. He remarks that there are also individuals of great abilities in families in which lunacy has occurred. In these there may be the proper blend of mental instability and high attainments which makes for progress. He further adds that the more unfit a person is to mate the less likely he is to leave descendants, and thus the race dies out and Nature sterilizes for us. Further, methods of regulation of marriage and procreation, other than that of actual sterilization, will tend only to an increase of illegitimate offspring under the very worst conditions. He regards the tendency of the relatives of the afflicted person to conceal the fact of the insanity until late in its course, as a great factor in increasing sanity, for there are many cases of the disease, especially that known as dementia præcox, which if taken at the very inception, are susceptible of considerable relief.

5. **Parotiditis and Glycosuria.**—Routh gives the details of a remarkable case of unilateral parotiditis which arose as the result of exposure to a draft of cold air, and which was accompanied by glycosuria. The intensity of the glycosuria and acidosis, together with the specific gravity of the urine followed *pari passu* the course of the fever.

6. **Electrocardiography.**—Lewis concludes his series of papers on the clinical importance of this means of studying the heart functions and abnormalities with the following remarks: Galvanometric examination of the heart may give indications of enlargement of the walls of one or the other cardiac chamber; it may accurately locate small lesions in the musculature. It tells us when the heart beat starts at the normal impulse centre or away from it; in the last named condition it tells us that the rhythm is no longer under the normal nervous control—a fact which is of fundamental importance in the management of our case; it tells us, within certain limits, where the new beats have their origin. It gives us a separate record of contraction in auricle and in ventricle, and accurately defines the time relation of contraction in one chamber and the other; thereby it frequently elucidates physical signs which otherwise would remain obscure. It provides us with a perfect means of ascertaining the functional efficiency of the auriculoventricular bundle, the sole conducting tract upon which the ventricle depends for the reception of impulses which start its contraction. It allows us to distinguish between separate forms of slow and rapid heart action, which are of totally different significance. It provides us with an analysis of every form of cardiac irregularity, an analysis which is unrivalled in its precision by any other method. While the information derived from it relates essentially to the condition of the muscle, the method is often helpful in the diagnosis of lesions of the valves. It brings us into nearer contact with the functions of the heart muscle than does any other clinical method; it is a precise means of studying the heart as a living and moving organ. The information obtained by electrocardiography is not of purely scientific interest

in the analysis of disordered heart action. It has a great and growing value in the practical management of patients. There are few heart cases in which our knowledge is not added to by its use, and in a steadily increasing proportion facts which are essential, if sound prognosis and treatment are to be attempted, are elicited.

LANCET

July 13, 1912.

1. D'ARCY POWER: Five Cases of Acute Duodenal Perforation.
2. H. FRENCH: High Blood Pressure and Commoner Affections of Arteries.
3. R. L. KNAGGS and W. W. WALKER: Tubal Pregnancy Developing to Term without Rupture, etc.
4. JAMES SHERREN: Treatment of Chronic Ulcer of Stomach and Duodenum by Gastrojejunostomy.
5. F. E. BATTEN: Use of Celluloid Splints in Treatment of Poliomyelitis.
6. J. AICHIKOSHI, P. FILDES, and H. B. PARKER: Neosulvarsan.
7. H. CAMPBELL: Observations on Neuron. (D).

1. **Acute Duodenal Perforation.**—Power calls attention to the fact that this condition is very frequently overlooked, chiefly on account of the peculiarity of the symptoms. The onset is usually sudden, and the patient goes into more or less severe shock from which usually he soon begins to rally. There is no very distinct localization of tenderness or of muscular resistance, but careful examination will generally reveal the fact that the upper right quadrant is the more tender and resistant. The remarkable feature is the total absence of all previous symptoms, the patient having usually enjoyed excellent digestion. The prognosis was poor on account of the fact that the diagnosis was not clear and the operation was delayed. But now the prognosis has become good if the condition is recognized early and the rupture is securely closed at once.

2. **High Blood Pressure.**—French differentiates the several types of arterial lesion associated with the loose use of the term arteriosclerosis, and then considers the mechanism of its production. He holds that the two theories, the *toxic* and the *increased peripheral resistance* theories, are inadequate to explain the causation of arteriosclerosis. He offers a new one, which he calls the *sameness of calibre* theory. He suggests that in sedentary occupations the individual maintains for long periods of time approximately the same amount of vasodilatation in the splanchnic vessels, owing to lack of exercise or change of life. He always keeps his stomach active and his brain working. This results in the same change in the muscular structures of the vessels as would spinting and immobilizing a voluntary muscle in that structure. French concedes the possible cooperation of some toxine, but not a specific one necessarily. He supports this explanation by the results of graduated exercise in reduction of the pressure in sedentary patients who show a beginning rise of pressure. Further, he cites the fact that general and severe arteriosclerosis is more common among those who lead a routine life than in those who take considerable exercise and who change frequently from one state of activity to another, thus keeping their vasomotor mechanism "in training."

4. **Chronic Ulcer of the Stomach.**—Sherren analyzes the results of gastrojejunostomy in seventy-two cases of chronic ulcer of the stomach or duodenum, and concludes that the operation may be

undertaken in unselected cases with a mortality of less than three per cent., and that it will give relief in at least ninety-six per cent., with the probability of cure in more than eighty per cent.

5. **Celluloid Splints.**—Batten finds that these are very useful, comfortable, and economical in the treatment of poliomyelitis. They are made on a cast of the legs or other part of the body of the patient, and are very light, so that walking is made possible when they are worn. He would apply them in all cases of the disease after the acute symptoms have passed off. Many patients are able to walk with them who could not even stand without them, and if this is not accomplished, or necessary, they certainly tend to reduce the extent of the resulting deformity of the disease.

6. **Neosalvarsan.**—McIntosh, Fildes, and Parker, as the result of human use and animal tests of this modification of arsenobenzol, find that it has a diminished toxicity to man as compared with its predecessor. This allows of more intensive treatment. It must be given, otherwise, exactly as was salvarsan, that is, that it is necessary to give repeated doses until the Wassermann reaction is made negative. Its greater solubility is of advantage, for less total fluid is required. It is neutral, and saline is not to be used in its solution, so that its preparation for injection is simpler.

AUSTRALASIAN MEDICAL GAZETTE.

June 8, 1912.

1. A. E. FINCKH: Hodgkin's Disease in Light of Modern Research.
2. SINCLAIR GILES: Some Unusual Symptoms in Lymphadenoma.
3. L. HERSCHL HARRIS: Treatment of Hodgkin's Disease by X Rays.

1 and 3. **Hodgkin's Disease.**—Finckh and Harris have views that by no means coincide concerning the value of treatment in this disease. The former says that no drug has yet been found to render much service, that x ray treatment leads to decided improvement in only a small proportion of cases, and that when everything has been summed up, Hodgkin's disease is a hopeless condition. Harris maintains, on the contrary, that x rays in filtered doses, properly administered, are of considerable use, that most cases are relieved and some stay so for years. Their efficacy is limited in very acute cases with marked cachexia and asthenia. Thorough and correct doses must be employed and all the enlarged areas attacked, including the spleen and liver. The rays should be tried alone and, failing response, arsenic may be employed.

LYON MÉDICAL

June 23, 1912.

1. J. P. MORAT: Nerve Grafting (*To be continued*).
2. MICHAUD: Massage, Mechanotherapy, and Motor Reeducation in Tabes, Spastic Paraplegia, and Hemiplegia in Course of Cure at Springs of Lamalou.

2. **Physical Treatment in Tabes, Spastic Paraplegia, and Hemiplegia.**—Michaud states that in tabes, massage in combination with mechanical treatment acts as a sedative to spasm and a tonic in the presence of paresis. Vasomotor disturbances are remedied, the circulation as a whole is activated, nutrition of the affected tissues improved, stiffness of joints and contractures are diminished, and intraarticular effusions caused to disappear. In tabetics with cachexia, cardiovascular lesions or amaurosis, physical treatment by these

two methods alone is indicated, but in others motor reeducation should soon be added to it. The latter may improve not only the motor functions, but also sometimes the sensory. Massage, which is only of secondary importance in the treatment of simple incoordination, is especially useful where there is paresis of muscles. Hypotonia should be combated by massage, mechanotherapy, and special exercises which tend to overcome the state of muscular relaxation by giving rise to a compensatory action on the part of the cortical centres of voluntary motion. In spastic paraplegias the same methods of physical treatment are often of great use. At first gentle, passive movements and effleurage should alone be employed, in order merely to diminish contractures and relieve pain by displacing the blood from the parts. Later, the massage should be carried out so as to improve the condition of the parietic muscles, due care being taken not to induce contracture in neighboring muscular groups; reeducation is also indicated in this second period. Certain forms of hemiplegia, e. g., cases occurring in the young and those of specific origin, may also at some time be benefited by a combination of the three methods referred to.

PRESSE MÉDICALE.

July 10, 1912.

1. L. MAIRE and GASTON PARTURIER: Surgical Treatment of Gastric Crises of Tabes.
2. PILOD: Antiseptic Efficiency of Soap.

1. **Surgery in Tabetic Gastric Crises.**—Maire and Parturier, dissatisfied with medicinal therapeutics in gastric crises, have tried the operation of Franke, which they consider superior to that of Foerster, with satisfactory results. They prefer a single vertical incision which divides the muscular fibres in the direction they run and renders easy the exposure of the intercostal nerves. The ventral position is good if the lumbar region is raised by means of a sand cushion under the abdomen. Four months after operation the two patients suffer no pain, have excellent digestion, have gained in weight, and testify to their *joie de vivre*.

2. **Soap as an Antiseptic.**—Pilod experimented with a hard sodium soap, known as Marseilles soap, which is used almost universally in France for pre-operative work, to establish its antiseptic qualities, if any, particularly on the streptococci. His results were negative. He avers that twenty minutes' use of soap does not sterilize either hands or site of operation, and that soap is useful only to saponify the cutaneous grease and thus render the surface more sensitive to the action of real antiseptics.

BERLINER KLINISCHE WOCHENSCHRIFT.

May 27, 1912.

1. F. KARWSEK: Phlegmon Situated behind Esophagus Produced by Foreign Bodies.
2. G. KLEMPERER and R. MÜHSAM: Splenic Anemia Cured by Extirpation of Spleen.
3. MUNCH SØGAARD: Carcinoma Mortality among Lepers.
4. WILHELM WEISBERG: Heredity and Serology.
5. HERMANN LUDKE: Formation of Antibodies in Cultures of Body Cells in Vivo.
6. W. ENGELMANN: Emanation Contents of Blood after Drinking Emanation Water.
7. P. SCHAEFER: Luminal.
8. FRITZ HOPPE: Melabrin, New Antipyretic and Antirheumatic.
9. VIKTO HINZE: Care of Teeth of Persons Working in Lead.

2. **Splenic Anemia Cured by Extirpation of the Spleen.**—Klemperer and Mühsam give the history of a man, thirty-six years of age, who was

excessively anemic and who was operated upon by Mühsam. The very much enlarged spleen was extirpated and the patient made an uninterrupted recovery. While on the day of the operation 35,000 leucocytes were found, the day after the number was only 24,000, and four days later, 13,000, where they remained for five weeks, to be finally reduced to 8,000. The red blood corpuscles increased from 2,700,000 on the day of operation to 5,750,000 on the day of his discharge, when the hemoglobin content was seventy per cent. Mühsam comes to the conclusion that in enlargement of the spleen with uncomplicated anemia, that is, where syphilis and leucemia are excluded, extirpation is indicated.

3. Investigation on Carcinoma Mortality among Lepers.—Soëgaard has made a thorough investigation into the question of carcinoma mortality among lepers. He cites the asylums of Bergen, Bombay, Trinidad, Tungku, Hanchow, Järfö, and private correspondence. His conclusion is that the lepers are relatively immune against malignant neoplasms.

7. Luminal.—Schaefer's report about his experience with luminal coincides with those we have quoted in these pages.

8. Melubrin, a New Antipyretic and Antirheumatic.—Hoppe has used melubrin in articular rheumatism. Melubrin is an antipyrine derivative in which one atom of hydrogen of the pyrazolon group is substituted by sodium amidomethan-sulphuric acid. It is a white, crystalline, nearly tasteless powder, freely soluble in water. In aqueous solution it easily disintegrates and should therefore be prescribed in powder form. He has used it in doses of one gramme, three or four times a day, which had to be increased to six or eight doses. The patients did not show any subjective symptoms; the pain disappeared, the temperature receded, the swelling of the joints abated, and only a certain stiffness remained. Recurrences were again cured through the drug. But he observed a few cases in which a complete cure was not attained after a treatment of fourteen days, but in these cases three or four days of from three to four grammes of salicylic acid given daily effected the cure.

CORRESPONDENZ-BLATT FÜR SCHWEIZER AERZTE

June 1, 1912.

1. HANS HUNZIKER: Fight against Quacks and Patent Medicines.
2. OTTO STINER: Serum Diagnosis in Congenital Luës.

June 10, 1912.

3. MAX STIFFER: Conservative Therapeutics of Felampasia.
4. VALFER FREY: Lumbar Puncture in Uremia.
5. TIRCHÉ: Use of Early Reaction According to von Pirquet in Diagnosis of Variola.

June 20, 1912.

6. Professor Theodor Kocher:
7. W. SILBERSCHMIDT: Anaphylaxis.
8. J. HEGESCHWEILER: Rupture of Ear Drum; Prognosis.

WIENER KLINISCHE WOCHENSCHRIFT

May 30, 1912.

1. H. SCHITT: New Schema for Phthisis.
2. WILHELM NEUMANN: Active Specific Therapeutics of Tuberculosis.
3. M. OPPENHEIM: Syphilis Exanthemata after Salvarsan Treatment.
4. OTTO VON FRISCH: Congenital Metatarsus Varus.
5. L. RETHI: Severe Hemorrhages for Several Weeks after Extirpation of Hyper trophies of Nasal Mucosa.
6. FRITZ DAUWITZ: Production of St. Joachimstal Radium Carriers.

2. Active Specific Therapeutics of Tuberculosis.—Neumann reviews the results produced by active, specific tuberculin therapeutics in diagnosis

of tuberculosis. He speaks of Koch's subcutaneous injection which, he says, has the greatest diagnostic value. He then takes up von Pirquet's method. The third is the method advocated by von Wolff-Eisner and Calmette, which was opposed by Bandler and Röpke. The largest proportion of mistaken results is found in Moro's method. He furthermore speaks of Wright's opsonin and of other methods. The article is very complete and should be read in the original.

ZENTRALBLATT FÜR CHIRURGIE.

July 6, 1912.

1. D. SCHOUTE: Injection with Salt Solution.
2. M. BARUCH: Response to Reply of Klose and Lampe to Article on Experimental Production of Exophthalmic Goitre.
3. R. VOGL: Recurrent Strumitis with Formation of Calculus in Thyroid Gland and Rupture into Sinus Pyramidalis and Esophagus.
4. A. E. STEIN: Liver Resectomy.

ZENTRALBLATT FÜR GYNÄKOLOGIE.

June 1, 1912.

1. W. THORN: Importance of Differentiating in Official Statistics between Puerperal Fever and Death from Such Cases as post abortum and Those post partum maturum, præmaturum, et immaturum.
2. A. BRUN: Fight against Criminal Abortion.
3. H. KUSTER: Has the Existence of Premontory Symptoms of High Temperature Been Proved in Thrombosis and Embolism?
4. W. SIGWART: Momburg's Tube or Tourniquet?
5. A. LABHARDT: Operative Treatment of Post Partum Hemorrhages.
6. A. SOLVEJ: Answer to the Article by W. Bylich, Alleged "Dyspagic" (dyspygic) Pelvis of Solowij.
7. W. BECKMANN: Hydrorhœa Gravidarum Amniatis in Endoamniotic Development of Fetus.

June 15, 1912.

8. J. W. C. VAN KESTEREN: Results of Operative Treatment of Diseases of Inflamed Annexa; Posterior Laparoclythotomy.
9. H. THALER: Use of Local Anesthesia and Local Exsanguination of Adrenals in Anterior Uterine Trachelotomy.
10. A. MÜLLER: Blind Ending of Esophagus with Communication of Thoracic Part with Trachea.
11. FLOEL: Remarks on Schubert's Formation of Vagina.

June 22, 1912.

12. H. SCHWEITZER: Therapeutics of Placenta Prævia.
13. W. STORGANOFF: Treatment of Eclampsia after Prophylactic Method Used in Berlin Clinics.
14. V. FROMMER: Mechanical Cervix Enlargement.
15. E. SACHS: Prognostic Importance of Germ Test in Blood.
16. F. KRIHN: Prophylaxis of Thrombosis through Prolonged Air Pressure Massage.

2. Fight against Criminal Abortion.—There have appeared in the *Zentralblatt* quite a number of articles dealing with this subject. Brun, the present author, remarks that criminal abortion is usually done by midwives, who very often succumb to temptation through poverty. He therefore wishes the social as well as financial status of midwives to be improved that they may not be tempted to perform criminal operations.

5. Operative Treatment of Post Partum Hemorrhages.—Labhardt, for three years, has insisted upon surgical interference in severe post partum hemorrhages. He cites four cases and such literature as favors his opinion.

ZENTRALBLATT FÜR INNERE MEDIZIN.

May 25, 1912.

1. HUGO PREBRAM and JULIUS LÖWY: Excretion of Colloids in Urine in Diabetes Mellitus.

June 8, 1912.

2. P. MESERITZKY: Decomposition of Oxypurins by Radium Emanation.
3. KRONE: Researches on Calcium Metabolism in Constipation and Diarrhea.

June 22, 1912.

4. L. DE JAGER: Modified Guaic Test.
5. L. DE JAGER: Precipitation of Various Compounds by Means of Formol Urea.
6. L. DE JAGER: Modified Test for Sugar.

2. **Purin Bodies and Radium Emanation.**—Messernitzky studied the action of the radium emanation upon uric acid, xanthin, and hypoxanthin. The first was decomposed to a considerable extent, with liberation of ammonia; xanthin was broken down only in slight degree, while hypoxanthin was entirely unaffected. The alpha rays were found to be at least partly responsible for the effect on uric acid.

4. **Modified Guaiac Test.**—De Jager, in order to bring out more plainly the blue color denoting a positive result in the guaiac test for blood in the feces, proceeds as follows: A piece of the feces the size of a pea is rubbed up in a broad test tube with thirty per cent. acetic acid and the tube filled about two thirds with the acid. Ether is then added, the tube shaken up and then allowed to stand until the ether rises to the surface; the addition of a few drops of alcohol, together with gentle stirring, will hasten the separation of the ether. To five c. c. of the ether solution are then added five drops of a twenty per cent. sodium hydroxide solution, ten drops of freshly prepared guaiac solution, and two c. c. of a three per cent. solution of hydrogen peroxide. Where a small amount of blood is present there develops a distinct green coloration; if the amount is larger, indigo blue. Thus performed, the guaiac test was found to be more sensitive than where sodium hydroxide had not been added, four parts of blood in 100,000 giving a distinctly positive and prompt result, as against six to 100,000 where the alkali is omitted.

6. **Modified Test for Sugar.**—De Jager describes a modification of a test for sugar already published by him. Milk of lime, made by adding thirty grammes of calcium hydroxide to water, up to 100 c. c., and allowed to stand at least twenty-four hours before use, is employed in the test. To five c. c. of the urine are added ten drops of milk of lime and five drops of a ten per cent. solution of copper sulphate. The mixture is then heated to boiling. Where sugar is present, a red or violet coloration of the precipitate appears, unless the amount of sugar is very large, when a yellow color is seen. The limit of sensitiveness of the test is one part of sugar in 10,000, sometimes even lower. The lime suspension should always be well shaken before it is used.

ROUSSKY VRATCH.

April 14, 1912.

1. G. V. CHLOPIN: Organization for Instructing Physicians as Sanitarians.
2. G. S. KULESH: Pathological Anatomy of Pulmonary Plague in Manchuria (1910-1911).
3. PH. D. RUMJANTSEV: Nephritis during Scarlet Fever.
4. M. D. TUSHINSKY and G. A. IVASHENTZOFF: Wassermann Reaction in Hospital Practice.
5. P. A. KUTCHENKO: Cerebral Abscess in Course of Typhoid Fever and Caused by Gaffky-Eberth Bacillus.
6. A. L. SWIDOMSKY: Sterilization of Drinking Waters with Small Quantities of Chloride of Lime.

1. **Medical Sanitarians.**—Chlopin argues in favor of special preparation of physicians as sanitarians, and to prove the inadequacy of sanitary supervision in Russia he brings forward the following interesting statistics: The general mortality in Russia is higher than in any other European country, 28.9 per 1,000. In some parts of Russia conditions are still worse; for instance, in Astrachan the general mortality has been forty-three to 45.5 per 1,000, while in Samara forty-two to fifty-six per

1,000. This high mortality is determined largely by the infant mortality before one year. The mortality from infectious diseases reaches fifty to sixty per cent. of the total. Particularly destructive are the epidemics which sweep over the country. Thus, from 1892 to 1894 an epidemic of cholera attacked 800,000 people, while the epidemic of 1907, 1910, claimed 297,665, a total during the two epidemics of 1,097,665 persons. In St. Petersburg alone, during the cholera epidemic of 1907, 1910, 16,663 persons were attacked, of whom 7,273 died. Taking the mortality from cholera at forty per cent., we get the enormous figure of 440,000 persons killed by cholera during the two epidemics. Typhus appeared in epidemic form in Southern Russia in 1908, 1909, attacking 284,000 persons, while typhoid fever gets annually 500,000 victims, not to mention numerous cases which escape unnoticed. This high mortality is due to lack of sanitary supervision, and to overcome this, the author suggests that a special course in hygiene and sanitation be given to physicians. This course already introduced by the author in Elenin Institute embraces climatology; dwelling and clothing; water supplies; disposal of sewage and garbage; food; adulteration of foods and drinks; methods of sanitary investigation, chemical and bacteriological; school hygiene; physical training and gymnastics; industrial hygiene and factory legislation; epidemiology of the more important acute infectious diseases and measures of combating them; epidemiology of typhoid fever; epidemiology of the plague; study of immunity; the chemistry of bacterins and their rôle in the changes which take place in the elements necessary to life; disinfection; organization of the governmental sanitary medical system and legislation in Russia and other countries; principles of public hygiene; organization of municipal hygiene; principles of vital statistics; principles of sanitary technique; clinics of cholera, relapsing and typhoid fever; pathological anatomy of diphtheria, cholera, plague and typhoid. In addition, practical instruction in chemical methods, bacteriology, pathological anatomy, school hygiene, problems of the sanitary expert, problems of the sanitary technical expert. Those who desire are also given the privilege of spending in the bacteriological city laboratory one day, and in the chemical department of the city laboratory three days.

2. **Bubonic Plague.**—Kulesh presents the following conclusions from a study of seventy autopsies: 1. Pulmonary bubonic plague is an independent purulent inflammation in which the blood and lymphatics are loaded with the plague bacilli. 2. The plague bacilli may enter in some cases by way of the mouth, causing specific infection of the tonsils, or by way of the mucous membrane of the upper respiratory passages. The lungs in these cases are affected secondarily, either through the blood, or through a descending bronchitis. 3. Pulmonary plague appears principally as a lobar pneumonia, or a pleuropneumonia owing to the involvement of the pleura. This pneumonia is very similar to fibrinous pneumonia, except that the exudate is free from fibrin.

4. **Wassermann Reaction in the Hospital.**—Tushinsky and Ivashentzoff present the following

conclusions based on a careful study of extensive hospital material: 1. In performing the Wassermann test it is necessary to adhere to the original Wassermann method. 2. It is necessary to work with several antigens differently prepared. It is better to use simultaneously antigens prepared from different livers. 3. It is necessary to titrate the various fluids before the test, the same day. 4. The best results are obtained from a watery antigen. 5. Alcoholic and acetone antigens prepared from syphilitic livers give very good results, but at times nonspecific reactions are obtained. Particularly marked results in syphilitics are obtained with the acetone antigen. 6. Alcoholic antigen from the guinea pig heart does not give as good results as the extract from syphilitic organs. 7. Aneurysm of the aorta gives, as a rule, a positive reaction. A negative reaction is the exception. 8. Valvular aortic lesions give in a large proportion of cases (sixty-eight per cent.) a positive reaction. In such cases the lesions are caused by a syphilitic mesoarteritis. A negative reaction points to endocarditis as the primary cause. 9. Lesions of the mitral valve give, as a rule, a negative reaction. 10. It is essential to aim at an early diagnosis of syphilitic affections of the aorta, and institute early treatment, not only with iodine, but with mercury and salvarsan. 11. Atrophic cirrhosis gives a positive reaction in approximately half the cases, pointing to syphilitic origin. 12. Hypertrophic and mixed cirrhosis give, as a rule, a negative reaction. 13. Acute yellow atrophy of the liver gives frequently a positive reaction. 14. In some cases of acute and subacute articular rheumatism in young people (from thirteen to eighteen years), a positive Wassermann reaction is obtained, pointing to hereditary syphilis. 15. A very marked reaction is obtained in ulcerative and sclerotic affections of the throat and larynx, when due to syphilis. A negative reaction excludes syphilis. 16. Cancer and sarcoma give, as a rule, a negative reaction. 17. In tumors of the mediastinum a positive reaction points to aneurysm, a negative to a new growth. 18. In lead poisoning the reaction is negative. 19. In paroxysmal hemoglobinuria the reaction is frequently positive, serving as an indication for specific treatment. 20. In malaria and relapsing fever a mild positive reaction is obtained (a group reaction). 21. Febrile diseases as such give a negative reaction. 22. Syphilis with symptoms gives, as a rule, a marked positive reaction. 23. A positive reaction is constantly obtained in all recent syphilitic affections of the nervous system as well as in all other manifestations of syphilis, being masked only by specific treatment. 24. No other affection of the nervous system, not caused by syphilis, gives a positive reaction. 25. In locomotor ataxia a positive reaction is obtained in about seventy-five per cent., and not 100 per cent. because the majority of patients are treated with mercury and iodides before the test is made. 26. In progressive paralysis a positive reaction is obtained in 100 per cent.; a negative reaction, with perfect technique, puts the diagnosis under suspicion. 27. The Wassermann reaction shows a tendency to disappear under treatment with salvarsan. The specific treatment should be controlled

by the Wassermann test. 28. Frequently, the reaction becomes more marked after treatment with salvarsan. This, however, is temporary. 29. The reaction is influenced by treatment more readily in syphilitic affections of the nervous system, and less so in parasyphilitic affections; more readily in tabes than in progressive paralysis. The marked disappearance of the reaction following treatment in "progressive paralysis" points to syphilis of the brain. 30. In syphilis of the nervous system the reaction is not only of diagnostic but therapeutic importance. 31. The marked stability of the reaction in parasyphilitic affections increases its diagnostic value, while for the same reason its value is diminished as a control in the treatment of tabes, and it is of no value as a control in the treatment of progressive paralysis.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

JUNE, 1912.

1. JOHN B. DEEVER: Surgery of Bile Ducts.
2. RUSSELL L. CECIL and KENNETH BULKLEY: Oxyuris and Trichocephalus Appendicitis.
3. JOHN H. MUSSER: Problems in Treatment of Exophthalmic Goitre.
4. EDWARD P. DAVIS: Thyroid Disease Complicating Pregnancy and Parturition.
5. NELLIS B. FOSTER: Functional Tests for Hepatic Sclerosis.
6. H. M. McCLARAHAN: Management of Asthma in Children.
7. ASTLEY P. C. ASHURST and RUTHGROVE L. JOHN: Treatment of Fracture of Forearm; End Results of Fifty-two Cases Treated without Operation.
8. ALLAN EUSTIS: Toxic Pathogenesis of Bronchial Asthma.
9. WILLIAM T. CORLETT and HAROLD N. COLE: Recurrent Disease of Skin Associated with High Winds and Cold Weather, for Which the Name Dermatitis hiemalis has Been Proposed.
10. EDWIN BEER: Effects of Ureteral Obstruction on Kidney Function and Structure.
11. J. HAROLD AUSTIN and GEORGE M. PIERSON: Crebore Micrograph in Clinical and Experimental Study of Cardiovascular Physiology.

1. **Surgery of the Bile Ducts.**—Deever calls to our notice that with the exception of malignant disease all the conditions calling for surgical attention upon any part of the biliary tract arise from infection; low grade infections by microorganisms greatly attenuated produce gallstone disease, or cholecystic inflammation with the formation of calculi, while acute invasions by organisms of high virulence are followed by acute forms of cholecystitis, cholangitis without the formation of stones because the process is too rapid. These acute processes of infection may, however, partially subside and become transformed into a sluggish stone forming catarrh. The form of disease of the biliary tract can be identified with a particular organism. The preponderance of the colon bacillus is not remarkable, since this organism is at all times present in a large part of the alimentary tract. Most infections soon become mixed, and the hardy colon bacillus overgrows the original invader, and at operation is alone found. It is, however, possible that the colon bacillus may be the infecting organism *ab initio* and may alone produce all the varied phenomena of infection of the biliary system. *Bacillus typhosus* may also be demonstrated as an infecting cause. No special set of pathological changes can be charged to any particular organism. Biliary disease being due to infection, its relief must be found in the general surgical treatment of infection, drainage. Two indications must be met by operation, the immediate mechanical relief of conditions present, and drainage for a sufficient time to cure the infection. In the early stage cholecystostomy would suffice, as infection is the

only condition present. Operation is indicated when medical treatment fails to control the inaugural symptoms. As a result of gallbladder infection we have pancreatitis which if acute must be treated as a separate clinical factor. The time to be of most service in a case of obstruction of the common duct is during the existence of the obstruction. Hemorrhage, one of the greatest dangers, does not occur in the early stages, but only when a cholemic state has been present a long time. Injections of human blood serum fortifies the patient when it is feared. The author urges against delay in operation when it is indicated.

2. Critical Study of Oxyuris and Trichocephalus Appendicitis.—Cecil and Bulkley conclude that there is a definite and characteristic form of appendicitis produced by *Oxyuris vermicularis* or *Trichocephalus trichiura* which is not uncommon, but constitutes fifteen per cent. of the 129 cases of appendicitis in children as found in the literature. The typical pathological changes are a catarrhal type of inflammation and punctures and ulceration of the appendiceal mucosa by the parasite. Clinically it is noticed that subjective signs are exaggerated and objective signs are lacking. There is frequently a lack of rigidity, and it is always much less than one would expect from the great amount of tenderness present. The parasites or their ova may occasionally be demonstrated in the feces. Appendectomy is the ideal treatment.

3. Treatment of Exophthalmic Goitre.—Musser is opposed to the surgical treatment of endemic goitre until proper general treatment over a long period has been employed. In cases of goitre associated with functional or organic disturbance of other secretory organs, there should be no operation until the complicating disorders are removed or relieved. If relapse occurs in spite of appropriate treatment directed against the goitre or against the other organic disorders, he advises surgical intervention. The medical treatment should extend over from six months to two years, and unless the patient is under the absolute control of the medical attendant, favorable results should not be promised. The same rigid and prolonged after treatment is demanded by surgical intervention to insure permanent results. In the treatment of goitre the surgeon does too much and the physician too little.

4. Thyroid Disease in Pregnancy and Parturition.—Davis notes that activity of the thyroid gland and the functions of the female genital organs are closely related, and that the thyroid and ovaries mutually influence functional activity. Thyroid secretion and ovarian secretion neutralize each other. Ovarian overactivity frequently causes exophthalmic goitre. The author concludes that the condition of the thyroid gland should be observed in examining all cases of pregnancy. If this gland is enlarged or altered the patient's nitrogenous metabolism should be closely watched, and if lack of thyroid secretion is in evidence, an available form of the active principle of the glands should be administered, best in one grain doses, three times daily, and continued for from four to seven months. No patient should be considered well, or in condition to be discharged, who does not seek surgical

advice and treatment permanently to remedy the thyroid condition, after recovery from parturition. As the induction of labor is too slow and uncertain in these cases it is seldom indicated. The mother's nervous disturbance is increased by the pressure of elastic bags, and the child is exposed to an additional risk by a delivery through a partially dilated birth canal. When degeneration of the thyroid is not apparently present, but thyroid material is formed in too great abundance, absolute rest and milk diet, sedatives, and ice applied over the gland should be employed immediately so that improvement may follow, if possible, until the viability of the child may be assured.

AMERICAN JOURNAL OF UROLOGY.

May, 1912.

1. B. S. BARRINGER: Hematuria of Nephritis and Renal Papillitis From Surgical Standpoint.
2. H. H. FOWLER: Profuse Unilateral Renal Hemorrhage; Nephrectomy.
3. E. O. SMITH: Prophylaxis and Treatment of Postoperative Anuria.
4. V. C. PEDERSEN: Fragment of Glass Irrigating Nozzle Removed from Bladder without Open Operation.
5. V. C. PEDERSEN: Burn of Urethra with Lunar Cautery.
6. M. L. HEIDINGSFELD: Elephantiasis Cutis Penis.

1. Hematuria of Nephritis.—Barringer reviews seventy-three cases of hematuria of unilateral nephritis. In most of the cases with pathological changes of the kidney pelvis or papilla there was an accompanying nephritis, and the author believes that the nephritis was probably the cause of the pathological changes in the kidney pelvis. The differential diagnosis between hemorrhagic nephritis and neoplasm is especially considered, the main point of difference being that neoplasm is seen in patients from forty to seventy years of age, while hemorrhagic nephritis occurs from twenty to fifty years of age; the neoplasm presents a tumor in most cases, while the opposite is true of hemorrhagic nephritis; hematuria may persist for years and no kidney tumor be present in hemorrhagic nephritis, while this is very rare in neoplasm; finally, the functional capacity in nephritis is normal, while in tumor it is decreased. The author believes that exploratory operation for diagnosis is often necessary; that for treatment nephrectomy is contraindicated unless there is danger of death from hemorrhage; that nephrotomy is always contraindicated; and if nonoperative measures, such as rest in bed, internal administration of turpentine, injection of adrenalin into the renal pelvis fail, that decapsulation or pyelotomy or both are preferable to nephrotomy or papillectomy.

2. Unilateral Renal Hemorrhage.—Fowler's case was in a man, twenty-six years of age, who had hematuria for a month. There was slight pain in the region of the left kidney, and no other symptoms. The patient was markedly anemic. The cystoscope showed a clot projecting from the orifice of the left ureter. Because of continued hemorrhage and the patient's alarming condition, left nephrectomy was performed. The kidney showed a slight degree of nephritis. Some of the large veins were distended, especially those near the apices of the papilla. But the author believes that the varicose condition of the vessels of the papilla was not sufficient to account for the hemorrhage, and that much hemorrhage must have occurred by way of the glomeruli and tubules.

4. **Glass in Bladder.**—See JOURNAL, May 18, 1912.

5. **Caustic Cast of Urethra.**—See JOURNAL, May 25, 1912.

LONG ISLAND MEDICAL JOURNAL.

June, 1912.

1. J. A. McCORKLE: Senility, with Suggestions as to Management.
2. L. KERR: Treatment of Summer Gastroenteric Disease in Children.
3. D. S. MACNAUGHTEN: Infection Following Abortion.
4. F. H. KNIGHT: Drainage of Abdominal Wounds.
5. L. C. AGER: Is Phlyctenulosis a Manifestation of Tuberculosis?
6. W. L. DUFFIELD: Dangers and Discomfort of Misplaced Testicle.

1. **Management of Senility.**—McCorkle says a plausible theory must not lead us to forget that vascular spasms occur in the young and middle aged without any manifestations of arteriosclerosis. In migraine, the temporal artery is often found to be firmly contracted and feels like a piano wire. The spasm is overcome and the pain relieved by the most powerful vasodilator, vomiting. No doubt many of the unexplained pains in the abdomen are due to vascular spasm, with or without arterial change. This is termed by some authors headache in the stomach. The danger of arterial strain and subsequent degeneration is not confined to the overworked. There is, equal, if not greater, danger in luxurious idleness, with its wasted energy and dissipation. Adverse circumstances, mental worry, and brain distress cause the arrival of age before the appointed time. He contends that the most excellent remedy for the very old is opium. After life's work is over and when the affairs of to-day have lost their interest opium in small doses becomes a comfort and a solace to the aged and infirm. The gum opium is the best. Bromides are contraindicated in the very old because they confuse, and make the mental process slow. In treating the diseases of advanced life the least possible amount of medicine that will meet the indication is the measure of the dose.

2. **Treatment of Summer Gastroenteric Disease in Children.**—Kerr asserts that in the management of the choleraic cases, the effort must be made to support the patient, and place him in a position to bear up until the acute symptoms subside. Everything should be made subservient to the conservation of strength. Enforced rest, preferably in the open, stimulants always, sedatives usually, are the only forms of medicine indicated. These must be given hypodermically, except in rare cases (not more than two emergency rectal injections). The most trustworthy stimulant is tincture of straphanthus, given with brandy in the serious cases and alone in the less severe cases. Morphine is the best sedative, being certain, safe, and prompt, and its action is enhanced by the addition of atropine.

3. **Infection Following Abortion.**—MacNaughten says we have an extremely common condition in puerperal infections, making up a fairly large percentage of the cases admitted to the gynecological wards. In Germany and England the consensus is against the routine use of the curette. The method of promoting disinfection as well as drainage of the uterine cavity by means of the self retaining catheter, placed within the cervix, with irrigation every three or four hours, may be useful in some cases.

4. **Drainage of Abdominal Wounds.**—Knight says the Fowler position is decidedly of advantage

in cases where free septic material may be localized, in a position easy of access. The horizontal position is useful in all cases of localized infection and for infections in the upper abdomen. He picks flaws in the glass tube drain, cigarette drain, and others, calling attention to the old fashioned wick, without any armor, which seems to him the best drain; in thirty-three cases he did not have a single death. The drain remained in place four days.

5. **Is Phlyctenulosis a Manifestation of Tuberculosis?**—Ager says the percentage of spontaneous recovery in such cases is perhaps as high as in tuberculosis in other portions of the body. Clinical statistics show a causative relation between these two diseases, and if phlyctenulosis is not a direct product of a tuberculous infection, nevertheless the examining physician should look for evidence of incipient tuberculosis, and systemic treatment should be guided by the results of such examinations.

MEDICAL REVIEW OF REVIEWS.

June, 1912.

1. J. VICTOR HABERMAN: Hysteria.
2. UDO J. WILE: Anaphylaxis in Relation of Skin to Disorders of Genitourinary System.
3. WARD A. HOLDEN: Occupational Diseases of Eye.
4. STEPHEN W. WELLS: Pulmonary Tuberculosis Treated with Diuradin.
5. WILLIAM J. ROBINSON: Gonorrhea and Marriage.
6. JOSEPH M. LEVY: Impaction of Third Molar Tooth.
7. HAROLD NIELHOFF: Value of Percussion in Localizing Subacute Intraperitoneal Infections.
8. A. MACKENZIE FORBES: Internal and External Atony.
9. MICHAEL M. DAVIS: Social Diagnosis.

8. **Internal and External Atony.**—Forbes recalls that this name was given, in 1909, to a condition of great laxity of the spinal and other ligaments associated with enteroptosis. As to treatment, the author says success has been attained by general measures calculated to improve nutrition, and local measures such as the elevation of the prolapsed viscera and control of the kypholordosis by use of a simple brace and apron. The preparation of this apparatus requires considerable care. Its aim is to support the prolapsed viscera and to maintain them in a position as nearly as possible to what is normal in the individual patient. The prolapsed viscera are therefore replaced by posture and maintained in their new position while a plaster cast of the anterior abdominal wall is fashioned. On this an apron is made. In winter leather is used for its preparation with satisfaction; in summer perforated aluminum. Anatomical results have been demonstrated by means of a series of radiograms.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL.

May, 1912.

1. M. A. SHLENKER: Care of Obstetrical Patient in Allgemeines Krankenhaus Frauenklinik, Vienna.
2. E. M. HUMMEL: Study of Brain Tumors.

June, 1912.

3. RANDOLPH LYONS: Effect of Ipecac, Phenol, and Salicylic Acid on Ameba in *Ptilo*.
4. WILLIAM H. HARRIS: Rush Section Diagnosis as Aid to Surgeon.
5. CREIGHTON WELLMAN: New Orleans School of Tropical Medicine and Hygiene.
6. OSCAR DOVLING: Modern Sanitation.
7. ABNER H. COOK: Diagnostic Value of Reaction Following Intravenous Injection of Salvarsan.

1. **Care of the Obstetrical Patient in the Vienna Hospitals.**—Shlenker says that with the onset of labor the patient is made surgically clean, the external genitals being scrubbed with soap and water, and afterward irrigated with solution of bichloride of mercury. Delivery is usually in the lat-

eral position and if normal is made by a midwife under the direction of a clinical assistant. When laceration is inevitable episiotomy is very frequently performed. All lacerations are immediately repaired with silk sutures. After delivery, early rising is encouraged. In the absence of complications the woman is permitted to get out of bed for ten minutes within the first twenty-four hours, the second day for twenty minutes, morning and evening, after which she is allowed to be up and about as much as she desires. She is, meanwhile, carefully watched for anything abnormal. Temperature and pulse are taken thrice daily, and the slightest disturbance is a signal for the woman's return to bed. Superficial lacerations are no bar to early rising, but those having deep lacerations remain in bed till the sixth day. The women usually leave the hospital on the tenth day. The placenta is never expressed, except in eclampsia, hemorrhage, or when fever is present, nor is the uterus ever manipulated or massaged. It is allowed to expel its contents unaided. They assert that any interference predisposes to hemorrhage. In uterine inertia and post partum bleeding alone is light massage used and ergot administered. No ante partum douches are given unless the patient has a profuse discharge or is found to be infected. The same holds good during the post partum period, save that the external genitals are irrigated, unless douches are especially indicated (foul discharge, fever, etc.), in which instance one, or perhaps two, intrauterine douches or a hot irrigation of ninety-five per cent. alcohol, either of which is contraindicated if there is a suspicion of infection of the annexa or parametrium. Vaginal douches are reserved until the tenth day.

3. **Effect of Ipecac, Phenol, and Salicylic Acid on Ameba in Vitro.**—Lyons's experiments as to the mode of action of ipecac upon ameba were suggested by the successful clinical results following the use of ipecac in amebic dysentery. As the ipecac is usually dispensed in salol coated pills and as ingested salol is split into its component parts, phenol and salicylic acid, their action upon ameba was separately tested. Experiments with ipecac on ameba *in vitro* failed to explain its clinical value in dysentery, although in a few experiments the ipecac apparently exerted a slight inhibitive action upon the ameba. The curative action of the ipecac is possibly dependent upon some specific change which the drug undergoes after ingestion. Again, it is highly probable that the ameba artificially propagated is not *Entamoeba histolytica*, and may on that account be more resistant to the action of the drug. Phenol had no action except in strong solutions and that action was chiefly upon symbiotic bacteria, and therefore clinically unimportant. Salicylic acid in dilutions up to one in 5,000 showed marked destructive action upon ameba. Slight inhibitive effects were produced by dilutions up to one in 10,000. It is strongly bactericidal. This marked effect of salicylic acid on ameba gives salol preference as a coating for ipecac pills as it yields sixty-four per cent. of salicylic acid. The use of watery solutions of salicylic acid is suggested, one in 4,000 to one in 1,000, as irrigations in amebic dysentery.

4. **Rush Section Diagnosis as an Aid to the Surgeon.**—Harris makes a special plea for rush sections in tumor masses, or in tumors suspected of malignancy. He favors a partial imbedding of thin celloidin with a modified eosin hematoxylin method of staining. It is not as rapid as plain methylene blue, but the differentiation is better and this makes for speed by avoiding repeated staining and perhaps sectioning.

7. **Diagnostic Value of the Reaction Following the Intravenous Injection of Salvarsan.**—Cook points out that we have been led to believe that the reaction following an intravenous injection of salvarsan is produced by endotoxine eliminated by dead *treponema pallida*. The deduction from this that the graver the syphilitic infection the more marked the reaction is accepted by no small part of the profession and is used by them as a test for lues, and as an indication to the extent and amount of treatment. Cook has found clinically that a severe reaction is sometimes obtained in mild, and no reaction in severe infections. These variations in reactions prove, therefore, that as a test for the presence of syphilis, or as a gauge upon which to base treatment, it is absolutely valueless. The reaction is not due to the elimination of endotoxines, but to the contamination of the distilled water in the solution. By sterilizing containers, catching the water as it dropped from the still, adding the necessary amount of salt, and boiling the solution, afterward cooling and immediately making and administering the solution, except in a very small percentage of cases, reactions will cease. These conclusions are in accord with the recent work of Hort and Penfold, Swift and Ellis, Wechselmann, and most recently of Ehrlich himself.

PENNSYLVANIA MEDICAL JOURNAL.

June, 1912.

1. C. C. SANDELS: Treatment of Tuberculosis of Larynx.
2. G. B. WOOD: Tonsils and Tuberculosis.
3. E. TIKEREN: Pupils in Health and Disease.
4. J. H. W. RHEIN: Diagnosis and Pathology of Tumors of Pons.
5. W. REBER: Orbital Diseases Secondary to Sinusitis.
6. E. B. HECKEL: Orbital Cellulitis from Causes Other than Sinusitis.
7. R. H. SKILLERN: Relation of Ethmoid Diseases to Orbital Conditions.
8. H. F. HANSELL: Surgical Treatment of Orbital Cellulitis.
9. A. B. SHWELBY: Anaphylaxis in Relation to Bacterial Infection.
10. J. F. SMALL: Pneumothorax as Curative Factor in Pulmonary Tuberculosis.
11. J. T. ULLOM: High Blood Pressure.

2. **Tonsils and Tuberculosis.**—Wood gives a valuable and extensive bibliography relating to the rôle played by the tonsils in tuberculosis, and summarizes the research done on this question. Tonsillar tuberculosis is of two forms, latent and manifest. The former is not very frequent, but the latter is far commoner than might be supposed. Secondary involvement of the tonsil in pulmonary tuberculosis occurs in practically all cases in the advanced stages. Extension of the disease from an infected tonsil may be by the way of the lymphatics with the production of cervical adenitis. Wood describes a small lymph gland of infrequent occurrence, lying in the notch formed by the junction of the subclavian and internal jugular veins. This gland lies in very close proximity to the pleura, over the apex of the lung, and it is through tuberculous involvement of this that tonsillar tuberculosis gives rise to pulmonary involvement by extension through the lymph channels. In general the

course of events is the development of tuberculous cervical adenitis, the glands of which break down, with the liberation of the bacilli into the blood stream and the production of general miliary tuberculosis. In no case of this type was Wood able to find evidence of any direct extension of the disease to the apex of the lung.

5. Orbital Diseases Secondary to Sinusitis.—Reber traces the development of a number of orbital diseases to extension of infection from the adjacent sinuses, and he gives a number of case reports to illustrate this mode of orbital infection. He concludes his paper with the following summary: All manner of orbital diseases, extraocular and intraocular, are at present traceable to suppurative or nonsuppurative diseases of the accessory sinuses. It will often require painstaking and prolonged study on the part of the rhinologist finally to establish the relation. Even in the presence of what appear to be negative findings, intranasal treatment, which will deplete the mucosa to the greatest extent, should be instituted.

JOURNAL D'UROLOGIE.

February, 1912.

1. N. HEITZBOYER: Albarran.
2. WEIDAL and WEILL: Pericarditis Accompanying Bright's Disease.
3. BOURCY and LÉGUEU: Large Cyst of Suprarenal Capsule.
4. B. BOETZ: Pathology and Surgery of Horseshoe Kidney.
5. A. HOVELACQUE: Anatomopathological Study of Complete Ectrophy of Bladder.
6. G. MARION: Double Urethra in Male.
7. HEITZBOYER and HOVELACQUE: Operation for Making New Bladder and Urethra.

3. Cyst of Suprarenal Capsule.—Bourcy and Legueu describe a case of large cyst of the suprarenal capsule. A patient of sixty-one years presented a large, painful, left sided, abdominal tumor, without eosinophilia; the Wassermann reaction was negative; the hydatid antibody reaction was twice negative and once positive. A diagnosis was made of hydatid cyst. At the operation a cyst of the suprarenal capsule (holding five litres) was found. The cyst practically surrounded the kidney. The patient died following operation. The authors point out that these are lymphangiomatous cysts of the suprarenal capsule; that pressure of the large number of sympathetic nerves found in the vicinity of the cyst gives painful symptoms; that the diagnosis is very difficult. The operation consists of excision of the sac and is always grave.

6. Double Urethra.—Marion describes a patient who presented, one centimetre from a normal meatus, a small orifice from which a few drops of urine sometimes came. This orifice was found to be the exit of an accessory urethra which went as far as the bulb and then connected with the real urethra. Because of a persistent urethritis the accessory canal was extirpated.

REVUE MÉDICALE DE LA SUISSE ROMANDE

May, 1912.

1. LUCIEN JEANNERET: Malignant Chorionepithelioma of Fallopian Tube.
2. ALEX CRAMER: Lumbar Puncture.
3. JAGUEROUD: Early Diagnosis of Secondary Tuberculosis of Intestine in Chronic Pulmonary Tuberculosis.
4. CHARLES FAVRE: Fractured Skull without Local Signs but with Localized Cerebral Involvement. Recovery after Decompression Operation.

1. Chorionepithelioma of Fallopian Tube.—Jeanneret reports a case of this nature which developed after a tubal pregnancy and reviews the cases previously recorded. Of about 350 reported

cases of chorionepithelioma, but eleven—3.14 per cent.—were tubal. The history in these cases generally shows three characteristic periods: 1. Complications of extrauterine pregnancy; 2, quiescence; 3. rapid growth of the tumor, with pain and cachexia. The tumor is situated at the junction of a tube with the uterus, being attached directly or by a short pedicle. Its surface is uneven and dark red in color, its wall readily broken, and the cavity in the interior filled with blood. Adhesions to neighboring organs are early formed. Microscopically, the tumor tissue is generally that of the ordinary chorionepithelioma. The wall of the tube is sometimes rapidly eroded and perforated. Even after early excision, prompt recurrence has been observed. Metastases involve especially the vagina, liver, lungs, and brain. No case of recovery from the condition, either with or without operation, has as yet been reported.

3. Secondary Intestinal Tuberculosis.—Jagueroud sought to detect the advent of secondary intestinal tuberculosis in phthisical patients at the earliest possible moment, in order to get an exact idea of the results to be expected from prompt treatment of this complication. Of twenty-one cases of chronic pulmonary tuberculosis in which the intestine became involved, this involvement took place in the first stage of the lung disease in two instances, in the second stage fourteen times, and in the third five times. Disturbances of gastric digestion were constantly observed at the start of the intestinal involvement: whereas, in general, tuberculous patients are able to take care of large amounts of food without difficulty; those in whom intestinal tuberculosis is developing lose their appetite and suffer from epigastric pain, eructations, and sometimes vomiting. Though such digestive disturbances may appear temporarily in any case of tuberculosis, their persistence in spite of all dieting and drug medication distinctly suggests incipient intestinal disease. Zahn and Rousseff have expressed the opinion that changes in the stomach precede and play an important rôle in the production of intestinal tuberculosis. The author believes, however, that functional gastric disturbances may also be due to reflex irritation from a tuberculous intestinal focus, as he has seen marked gastric symptoms disappear wholly and immediately after excision or exclusion of the diseased loop of intestine. The early intestinal symptoms of secondary bowel tuberculosis are not well marked. Diarrhea rarely appears in the first stage of the disease; constipation may be present instead. Oftener the stools are irregular, normal for a day or two, then soft, very voluminous, and malodorous. Microscopically, tubercle bacilli may or may not be found; it is only where they occur in large numbers in a patient who is careful not to swallow sputum that intestinal tuberculosis is strongly suggested. Pain in the abdomen is rarely complained of, though palpation sometimes elicits distinct tenderness. Occasionally a tumor suggesting in shape a banana or cigar may be felt, but this indicates almost always disease of some standing. Sometimes symptoms of subacute or chronic appendicitis herald the beginning of intestinal involvement, though the appendix is rarely affected without the cecum. Of

much diagnostic import is the appearance, in a patient previously afebrile, of unexpected, irregular rises of temperature; the morning temperature is already above normal, and an evanescent fever after each of the heavier meals, with the temperature often normal between 4 and 7 o'clock, is especially characteristic. In patients already febrile the distinction is less easy, but can be made. As regards treatment, Jaquero tried various drugs without success. Heliotherapy and astringent or antiseptic irrigations sometimes proved definitely harmful. Tuberculin and serum treatment led to only temporary improvement. While the author believes cases diagnosed very early may be effectively treated, the only resource now available is prompt surgical intervention. The disease often remaining localized for some time in the ileocecal region, the affected area may be excised with hope of success; or, if the process is too widespread, simple exclusion of the portion of gut involved may also lead to a definite cure.

Proceedings of Societies.

AMERICAN THERAPEUTIC SOCIETY.

Thirtieth Annual Meeting, Held under the Auspices of McGill University, at Montreal, Canada, May 31 and June 1, 1912.

The President, DR. ALEXANDER D. BLACKADER, in the Chair.

(Concluded from page 202.)

Modern Methods of Drug Standardization.—

DR. F. E. STEWART, of Germantown, Pa., said that, with the collaboration of Dr. A. PARKER HITCHENS and Dr. W. F. ELGIN, Professor CHARLES E. VANDERKLEED, and P. S. PITTINGER, Phar. D., his object was to place in the hands of the American Therapeutic Society a plan for teaching standardization which had been employed during the past winter by himself and his associates in lectures before the Philadelphia College of Pharmacy. He first gave a review of the standardization work of the United States Pharmacopoeial Convention and its committee on revision during the past two decades, stating that in no better way could we obtain an adequate idea of the subject of modern drug standardization. Drug standardization, in its large and comprehensive meaning, consisted in fixing a scientific nomenclature; in providing methods for insuring uniformity in composition, physiological action, and therapeutic effect; in adjusting finished products to fixed standards and keeping them up to the standard for a sufficient length of time to permit their proper application as therapeutic agents; in reducing this knowledge to law, and embodying it in such system that we might have a science of materia medica; in embodying this knowledge in textbooks and teaching it to the medical and pharmaceutical professions, so that it might be used by physicians and pharmacists in their respective arts. Therefore, the importance of drug standardization could not be overrated. He next described chemical standardization, botanical standardization, pharmacological or physiological standardization, the bacterial count method of standardization used in preparing bacterial vaccines; standardization by testing for the ab-

sence of contaminating bacteria; serological standardization; therapodynamic standardization, and clinical standardization. The object of therapodynamic standardization was to determine the activity of individual lots of the drug or preparation tested by observing and, if possible, measuring its effects upon diseased tissues, while that of clinical standardization was to determine the value of the drug as a therapeutic agent. Methods for the determination of the identity, purity, and strength of medicinal chemicals, and standards for these, were well exemplified in the *United States Pharmacopœia*, and the extension of this work to the unofficial materia medica was rapidly being brought about by the American Medical Association and the American Pharmaceutical Association. Pharmaceutical assaying might be defined as the art of determining the amounts of medicinally active constituents of drugs and their preparations. As such, it was an exceedingly important link in the chain of progress, binding together medicine and pharmacy under the inclusive science of pharmacology. The possibility of deterioration was an important consideration for the therapist; but, fortunately, only a few drugs and their preparations were subject to rapid deterioration. Among these were digitalis, strophanthus, and ergot preparations.

DR. CHARLES E. DE M. SAJOUS said that at the annual dinner of the society he had emphasized the need of courage and perseverance, regardless of criticism and opposition, in pursuing original lines of thought or research which one believed to be of value to human welfare. This applied to the class of work in which Doctor Stewart had so long been engaged. Nothing was so valuable to us as a profession as work of just this kind, for there was nothing that would so paralyze our efforts as to have to fight with weapons made of lead or wood.

DOCTOR OSBORNE said that Doctor Stewart's efforts were certainly very much needed. Now that we realized something of what he had done, we should fight in company with him. He himself was a member of the Committee on Scope in the preparation of the next issue of the *United States Pharmacopœia*, and this committee, without discussion, had fixed upon a very few drugs for admission to it, not more than twelve. It would be found, however, that by the time the work had got through all the various other committees, the new pharmacopœia would contain as had always been the case, a quantity of perfectly useless drugs. Our pharmacopœia was the most antiquated modern medical book in the world, purely medieval; but still he believed that Doctor Stewart's efforts would finally triumph, and that their results would be seen in future pharmacopœias.

Value of Enterostomy in Certain Conditions in Ileus.—DR. L. H. TAYLOR, of Washington, D. C., said the object in opening the bowel was to permit the escape of gas and fluid content, and upon the gut's ability to empty itself would depend the success or failure of the procedure. In ileus, or at least those cases of it where the condition was grave enough to warrant enterostomy, peristalsis had either ceased or become so feeble as to be negligible, and we had to rely on the contractions of the diaphragm and of the parietal abdominal muscles. If either of the latter forces was much weak-

ened we could not expect to get much result. Therefore to allow tympanites to go on to a high degree was to invite disaster. The ideal time for enterostomy was before peristalsis had ceased, but the operation should not be delayed when it had become apparent that it was going to cease, in spite of the ordinary remedies. The only reliable way to determine this was by the frequent use of the stethoscope and careful observation of the character of the vomitus. The larger number of his cases had been operated in for the cause of the condition, and in such, a loop of bowel could be drawn out through the original incision after the sutures had been cut. Where the patient was nearly moribund sensation was so much obtunded that no anesthetic was required; when this was not the case he had given a light primary ether anesthesia. In reflex ileus, where there had been no previous incision, he had used local anesthesia. A patient needing enterostomy for ileus was in no condition to be moved. The operation should be done in the patient's room, and should, furthermore, be of the simplest and quickest character. It was his firm conviction that a slow, deliberate operation, with the usual operating room paraphernalia, technique, and courtesies, would kill every patient. It was extremely important to get the enterostomy low down in the ileum for two reasons: First, the further away it was from the pylorus, the larger the area of distended gut that would be drained; second, the nearer the pylorus, the more acid would be the character of the discharge which later would be thrown out over the skin and the greater the interference with nutrition when food could be recommenced and the wound expected to heal. In appropriate cases, where the abdominal muscles were not stretched beyond their limit of tonicity and there was still some bowel power, the relief was immediate, and the quantities of gas and pea soup bowel content discharged were enormous. Cessation of vomiting took place almost at once, and as a rule did not recur. If it did, gastric lavage, to clean out the bowel content which had regurgitated before the enterostomy was done, would usually suffice to check it. The character of the pulse soon improved, and in a few hours there was a change in the patient from the appearance of imminent death to one of comparative comfort. In but two instances had he found it necessary to resort to operative interference to close the fistula. So far as his individual judgment went, he had no hesitation in saying that, in his opinion, every one of his twenty patients would have died promptly if enterostomy had not been performed. Sixteen of the series were cases of peritonitis due to various causes, two were incident to toxemia outside the abdominal cavity, one followed on the third day after a high forceps delivery and post partum hemorrhage, and one was reflex. Of the two toxicemic cases, in both of which the patients died, one was due to lobar pneumonia in a woman eight and one half months pregnant, and the other to a general gas bacillus infection in a woman operated upon for a large, partially strangulated uterine fibroid. Excluding these two, the series showed a mortality of 16.6 per cent.

Therapeutics of Sacroiliac Relaxation after Operation, Labor, etc.—Dr. A. ERNEST GALLANT,

of New York, said that the symptoms in this class of cases, as noted by different observers, were, backache, pain, radiating from the gluteals, down the thigh to the calf, occipital headache, and disability. Any motion aggravated the patient's suffering, and for some only the semireclining posture afforded any relief by day or night. Inspection of the joint area might show no perceptible deviation from the normal, or there might be found: (a) Lateral curvature of the spine; (b) obliteration of the spinal curve; (c) tilting of the pelvis to the same side, the posterior superior spine being elevated; (d) flattening of the back; (e) prominence of the sacrum. Having described the diagnostic palpation and manipulation of sacroiliac relaxation and treated of its differential diagnosis, he related several illustrative cases in his practice, and went on to say that, as might be expected, neither drugs, diet, nor local applications were of any avail. Immobilization was required, and if there were a dislocation of the sacroiliac synchondroses, this should first be reduced. In relaxation he had always succeeded in securing almost immediate relief by encircling the pelvis, on a level with the anterior superior spine, with adhesive plaster. The ends of the strips lapped over the sacrum, and the plaster was secured from slipping by a safety pin. Later, this dressing could be replaced by a strong, inelastic belt or by Doctor Gallant's special corset. While in his hands plaster strapping had proved efficient for temporary fixation, others had deemed it necessary in some cases to apply a plaster of Paris jacket or steel brace, and follow this up with a belt, to be worn for some months, or until the joint had been restored to its natural relative immobility. In the relief of this condition, as Reynolds and Lovett had stated, a proper corset accomplished three things: It tended to correct vicious balance by carrying the centre of gravity backward, thus relieving muscular strain, partially splinted the lower back, and furnished an artificial annular ligament to the gluteal muscles. Practically all the women whom he had seen suffering from this condition also had movable kidney and associated visceral ptoses, so that his corset was of service, not only in immobilizing the sacroiliac joint, but also in affording the much needed support of all the viscera, thoracic and abdominal.

Treatment of the Gastric Neuroses.—Dr. REYNOLD WEBB WILSON, of New York, made a plea for paying more and better attention to the individual with an unruly stomach, rather than in the way of disparagement of the special consideration of morbid gastric processes. Accuracy in diagnosis was by no means to be deprecated, but, in the careful cultivation of the narrower field, the greater general condition was not to be lost sight of. Formerly all the gastric neuroses, now generally enumerated as twelve, were grouped under the one term, "nervous dyspepsia," and, from the standpoint of the therapist, this was perhaps not so illogical as might be supposed, while the substitution of the term gastric neurosis for nervous dyspepsia had not been altogether fortunate, since it favored the conception of a gastric neurosis as a morbid entity. The conclusion was tenable that the chemistry of gastric secretion and the physics of stomach motility were not elucidated in textbooks built upon an isolated laboratory investiga-

tion. This should be predicated upon what the organism might do when its pathology was physiological gone wrong, and a neurotic subject was doing his, or usually her, utmost in the way of vagaries. As there was no panacea for the neurotic condition dominating the individual, so there was no specific for any one of the twelve varieties of gastric neurosis. With many women in the higher walks of life, in addition to the regulation of the habits and the employment of various physical agencies, much benefit often came from the administration, after meals, of ten drops of tincture of nux vomica, six grains of resorcinol, and one drachm of peppermint water, diluted in two ounces of water.

Filariasis Treated with Dioxidiamidoarsenobenzol.—Dr. NOBLE P. BARNES said that the human circulation was the habitat of the larvæ of possibly six distinct species of filariæ: the two of pathological importance being *Microfilaria Bancrofti seu nocturna*, the adult of which inhabited the lymphatics, and *Filaria diurna*, living in the subcutaneous tissue. There was abundant evidence that these were the etiological factors in endemic chyluria, lymphatic varix, lymphatic scrotum, elephantiasis, and other obscure tropical diseases. Manson and others had demonstrated the mosquito, of various species, to be the intermediary host of *Filaria Bancrofti*, and it had been suggested that the object of the nightly swarming was a necessary corollary to the life habits of the mosquito, its liberating agent. That the parasites were capable of decided longevity was recognized by all observers. Treatment, medicinal, mechanical, or surgical, had been entirely unsatisfactory, and the only possible means of escape appeared to be by protection from the mosquito. The patient to whose case he desired to call attention was a negress, thirty-eight years old and a widow, who lived in Washington and was admitted to Casualty Hospital, October 9, 1911. She was born at Annapolis, Md., and had had two unusually large children, one of whom died in infancy and the other at the age of four years. For ten years past she had weighed some 380 pounds, and for the last three years had had shortness of breath on exertion. On September 16, 1911, while running for a street car, she fell and injured her abdomen and legs, and she asserted that at that time these had begun to swell, the swelling steadily progressing ever since. She had spent most of her life in the vicinity of Washington, but as she was an expert cook, she was sometimes taken to the summer homes of wealthy families. About five months before admission she served a supper at Culpepper, Va., remaining there two days, and this was the farthest South she had ever been. Physical examination showed that the bones were large, the muscles flabby, and the entire body was excessively fat. Skin warm and moist, except on the lower legs, where it was dry and scaly; hair thick and in good condition; finger nails normal; toe nails thick and brittle; abdomen large; heart and lungs normal. The entire right thigh and leg and the left leg were greatly enlarged, the middle of the right thigh measuring thirty-six inches in circumference. On October 19th, beginning at 8 p. m., hourly examinations of the blood were begun, and by midnight the microfilariae were recognized, while two hours later they were so numerous

that everything else in the field was lost sight of. No malarial organisms were discovered. Under the use of dioxidiamidoarsenobenzol the enlargement of the limbs had markedly diminished. The case was still under observation. So far as known, there were no other cases of filariasis in Washington or its vicinity, and it was entirely unknown how the patient contracted the disease.

Dioxidiamidoarsenobenzol in the Treatment of Various Clinical Forms of Syphilis.—Dr. JAMES M. ANDERS, of Philadelphia, through Dr. P. Brynberg Porter, of New York, said that, notwithstanding the extensive trial already accorded to this remedy, its precise value was still imperfectly known. It was probably correct that the best results were obtained from its intravenous injection, followed by its intramuscular injection in order to prolong the effects. It was also generally conceded that following its administration, treatment by mercury was necessary to secure the most lasting results. It might be doubted, however, whether the question of dose had been determined sufficiently accurately, and the same statement held true of the numerous contraindications. He gave the reports of twenty cases, after which he stated that his experience confirmed the view that the remedy had a far reaching favorable effect in syphilis, and that it had a more rapid action than mercury. When he adopted the combined use of it and mercury the tendency to relapses seemed less evident. A principal reason for failure to cure by its use he believed to be in many instances the insufficient number of doses given. The injections should preferably be made at intervals of about eight weeks for four doses in succession, unless a relapse occurred earlier; in which case it should be administered without delay. An exception should be made to this rule in cases in which a negative Wassermann was found repeatedly following the first or second injection, and all recognizable signs of the disease had disappeared.

Election of Officers.—The following officers were elected: President, Dr. Noble P. Barnes, of Washington; first vice-president, Dr. Howard Van Rensselaer, of Albany; second vice-president, Dr. Robert T. Morris, of New York; third vice-president, Dr. Francis M. Pottenger, of Los Angeles; secretary, Dr. Lewis H. Taylor, of Washington; treasurer, Dr. A. Ernest Gallant, of New York.

The next annual meeting is to be held at Washington, D. C., in May, 1913.

Letters to the Editor.

MEDICAL EDUCATION.

AKRON, OHIO, July 22, 1912.

To the Editor:

With only one part of Mr. W. C. Griggs's letter can I agree, that is his estimate of the officers of the British (not "English") Royal Army Medical Corps. It is true that it has produced some very famous men, such as Ross, but I know, especially after my experience in the South African war, that the average officer of that corps is far from brilliant. The best physicians or surgeons do not join the army.

Mr. Griggs's idea of the comparative stiffness of United States and British licensing boards is de-

cidedly wrong. Our most difficult State board examination is not nearly as severe as those of the Canadian Provinces, especially Ontario, Quebec, Nova Scotia. The British examining boards are still more difficult, their clinical and laboratory examinations being far more difficult and thorough than that of any State in the United States.

A. S. McCORMICK, L. A., M. D.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Recent Advances in Hematology. Being the Dr. James Watson Lectures for 1910. By WALTER K. HUNTER, M. D., D. Sc., Fellow of the Royal Faculty of Physicians and Surgeons, Glasgow, Physician to the Glasgow Royal Infirmary, etc. With a Colored Plate. New York: William Wood & Co., 1912. Pp. vi-119. (Price, \$2.25.)

This book consists of three lectures on the subject delivered by the author in November, 1910. As only a hundred and ten pages are devoted to the subject the presentation naturally cannot take up in detail a consideration of the entire field of hematology. There is, however, much information in the chapters and they prove to be interesting reading. The first lecture takes up the physical characteristics of the blood, its specific gravity, alkalinity, coagulation time, viscosity, and volume; then the red cells and the white are fully discussed. In the second lecture the changes in the blood making tissues are dealt with and certain definite blood diseases, as secondary anemia, chlorosis, and the splenic anemias. The third lecture discusses pernicious anemia and the types that are associated with certain diseased conditions. This is taken up quite fully and is of much interest. Hemoglobinuria, leucemia, purpura, etc., are passed upon more or less briefly. In addition, an appendix dealing with methods of fixing and of staining blood films has been added. The book is of distinct value in giving the reader an understanding of the recent ideas concerning the various blood diseases and can be well recommended.

False Modesty, That Protects Vice by Ignorance. By E. B. LOWRY, M. D., Author of *Confidences, Truths*, etc. Chicago: Forbes & Co., 1912. Pp. 110.

One of the most satisfactory indications of the advance that is being made in the present day, is the importance that is being attached to the proper presentation of questions relating to considerations of sex. The subtitle of this publication expresses in a nutshell the attitude that has been taken by previous generations. The belief that innocence and virtue can be attained only through ignorance has probably led to more sorrow and suffering than any one other mistake. The great amount of energy that is now being expended in order that the coming generations shall be better able to protect themselves, is one of the most splendid indications of the awakened conscience. This book gives very briefly a résumé of the many questions bearing upon the dissemination of knowledge. Its eight chapters deal with different phases of the subject and each is of great value. No person, however little inclined to thoughtful consideration, could read this small book and fail to be impressed by the dispassionate logic of the author. Everyone who has children or is in any way interested in them should obtain a copy and give close attention to its contents.

Primary Malignant Growths of the Lungs and Bronchi: A Pathological and Clinical Study. By I. ADLER, A. M., M. D., Professor Emeritus of the New York Polyclinic, Consulting Physician to the German, Beth Israel, Har Moriah, and People's Hospitals, and Montefiore Home and Hospital. New York: Longmans, Green, & Co., 1912. Pp. xii-325.

Doctor Adler gives, in his monograph, a most extensive review of the subject. In the introductory pages he briefly discusses the statistics concerning the frequency of primary tumors of the lungs and the great difficulty in obtaining trustworthy figures. Some twenty pages are then devoted to the bearing of the so called precancerous influences upon the formation of malignant growths, the

effects of race, heredity, sex, and age. The theories bearing upon cancer in general are briefly gone into, with special reference to carcinoma of the lung. Some thirty pages deal with the gross and the microscopic pathology of the condition, and the monograph concludes with forty pages on the clinical aspects of the disease. Doctor Adler discusses in turn pain, cough, sputum, respiratory difficulties, cachexia, and the blood count. The various types are also classified and their symptoms presented. To this material a hundred and ten pages are devoted. The remaining two hundred pages consist of four tables, the first and largest being of carcinoma cases; the second, sarcoma; the third, doubtful; and the fourth, a few miscellaneous cases. The book is interesting and contains many valuable bits of information. One cannot help feeling, however, that with the tables omitted and the material rather more concentrated, the publication could have been considerably reduced in size without losing any of its value.

Miscellany.

Our Progress in Athletics.—The great superiority of the American athletes in the Olympic games at Stockholm may result in changes in training in Europe, observes the *Army and Navy Journal* for July 20, 1912. The fact that the Americans were so much better in the events requiring speed and agility, such as the sprint races and the jumping and pole vaulting, while inferior in the endurance runs, is taken by some European students of athletics as an evidence of the effect of our invigorating climate in promoting speed and dash rather than endurance. On this point it should be remembered that the Americans were not acclimated and that a long sea voyage does not fit men for great, long continued exertion. It will be time enough to talk about our inferiority in such feats when we are beaten in our own climate. Our representatives also led the world with rifle, gun, and revolver. English critics of Great Britain's showing insist that there must be a democratization of her athletics. At present her athletic representatives are drawn chiefly from a very few universities, entrance to which is hedged about with many restrictions, whereas the United States picks up an athlete wherever he may be found. Besides, in America are hundreds of colleges, universities, and academies which are constantly turning out splendid athletes. No one could observe the great Stockholm contests without speculating on the chances the athletes of ancient Greece and Rome would have with such fleet and powerful representatives of modern athleticism as competed at the Swedish capital. The Swedes made a great hit with the visitors from all countries for the thoroughness of their preparations of the stadium and paraphernalia and for the fairness and impartiality of their judges and officials. Their showing in the programme must give the world a still higher admiration for the big hearted, big limbed giants of Scandinavia.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, yellow fever, plague, and smallpox were reported to the surgeon general of the United States Public Health and Marine Hospital Service during the week ending July 20, 1912:

CHOLERA.—FOREIGN: India (Moulmein), May 4-11, 6 cases, 6 deaths; Japan (Formosa), June 9-15, 21 cases, 12 deaths; Turkey in Asia, May 10-June 15, 58 cases, 67 deaths; May 1-June 15, 14 cases, 7 deaths.

YELLOW FEVER.—*Foreign*: Brazil (Manaus), June 10-19, 54 cases, 7 deaths; *Plague*.—*Insular*: *Porto Rico* (San Juan), June 1-19, 4 cases, 1 death; *China* (Hong Kong), June 0-15, 126 cases, 104 deaths; June 19, 1 death; *Cuba* (Havana), July 14-22, 1 case; *India* (Karachi), June 0-15, 3 cases, 3 deaths; *Japan* (Formosa), June 2-15, 15 cases, 14 deaths; *Java*, June 2-8, 12 cases, 9 deaths; *Persia*, May 19-June 1, 43 cases, 30 deaths; *Roum*, June 5-19, 10 cases, 9 deaths; *Spain* (Barcelona), June 1-19, 10 cases, 10 deaths; *United States*: *Indiana*, June 1-30, 91 cases, 3 deaths; *Konsa*, May 1-31, 21 cases; *Ohio*, June 1-30, 15 cases.

Smallpox.—*Foreign*: *Adria* (Aden), June 18-24, 1 death; *British East Africa* (Mombasa), May 1-31, 2 cases; *Brazil* (Rio de Janeiro), March 1-June 22, 60 cases, 8 deaths; *China* (Shanghai), June 1-16, 6 deaths; May 7, 300 cases, 4 deaths; *France* (Algeria), June 1-19, 1 case; *Germany* (Berlin), June 1-19, 6 cases; *Great Britain* (Bristol), June 2-28, 2 cases; *India* (Madras), June 0-15, 2 cases, 1 death; *Italy*, June 23-July 6, 8 cases, 1 death; *Japan* (Kobe), June 17-23, 31 cases, 1 death; *Mexico*, June 1-19, 155 cases, 70 deaths; June 18-28, 1 case, 1 death; *Mexico*, July 1-9, 2 deaths; *Netherlands*, June 1-19, 2-22, 11 cases, 0 deaths; *Persia* (Constantinople), June 1-19, 1 case; *Portugal* (Lisbon), June 1-19, 1 case; *Russia*, May 12-June 29, 17 cases, 7 deaths; *Spain* (Barcelona), July 1-6, 1 death; *Turkey* (Beirut), June 1-29, 15 cases; *Constantinople*, June 24-30, 0 deaths.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending July 27, 1912:

Army for the week ending July 27, 1912.

Clarke, Howard, Lieutenant. Granted two months' leave of absence. **Collins**, C. C., Major. Relieved from duty at Fort Robinson, Neb., and ordered to Fort Screven, Ga., for duty. **Hall**, William E., Lieutenant. Leave of absence extended one month and twenty days. **Hartnett**, E. H., Major. Left Fort Du Pont, Del., on ten days' leave of absence. **Jones**, Harold W., Captain. Granted three months' leave of absence, with permission to apply for fifteen days' extension. **Macy**, Frederick S., Captain. Leave of absence extended thirty days. **Miller**, R. B., Major. Granted two months' and fifteen days' leave of absence about September 15, 1912. **Mueller**, Armin, Captain. Granted leave of absence for one month and fifteen days. **Reynolds**, F. F., Major. Granted two months' leave of absence about August 6, 1912. **Woodbury**, Frank T., Major. Relieved from duty at Fort Screven, Ga., and ordered to Columbus Barracks, Ohio, for duty.

By paragraph 14, Special Orders 169, Headquarters Eastern Division, July 24, 1912, under War Department instructions of January 17, 1912, the following named officers of the Medical Corps will report at Governor's Island, N. Y., prepared for field duty, August 8, 1912, for instruction, and will proceed, on August 9, 1912, to points in Connecticut, to be indicated later, for duty in connection with the Connecticut Maneuver Campaign, August 10th to 19th inclusive:

Major William H. Wilson, Major Thomas J. Kirkpatrick, Major Basil H. Dutcher, Major Henry Page, Major Albert E. Truby, Major James R. Church, Major Samuel M. Waterhouse, Major M. A. W. Shockley, Major Paul C. Hutton, Major Gideon McD. Van Poole, Major Robert U. Patterson, Major James F. Hall, Captain W. L. Little, Captain P. W. Huntington, Captain Edgar W. Miller, Captain W. R. Davis, Captain L. H. Hanson, Captain W. K. Bartlett, Captain Arthur N. Tasker, Captain G. L. McKinnery.

Navv Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending July 27, 1912:

Barker, Z. A., Acting Assistant Surgeon. Detached from the Marine Recruiting Station, Detroit, Mich., and ordered to the Marine Recruiting Station, San Francisco, Cal. **Farenholt, Ammen**, Surgeon. Detached from the Marine Recruiting Station, San Francisco, Cal., and ordered to the Naval Training Station, San Francisco. **Hart, S. D.**, Assistant Surgeon. Detached from *Elcano* and ordered to the Naval Hospital, Mare Island, Cal. **Hayward, A. B.**, Past Assistant Surgeon. Ordered to the Naval Hospital, Philadelphia, Pa. **Longabaugh, R. I.**, Past Assistant Surgeon. Detached from the Naval Hospital, New York, and ordered to the Naval Station, Guam. **Lung, G. A.**, Surgeon. Ordered to the receiving ship, Navy Yard, Boston, Mass. **Miller, J. T.**, Past Assistant Surgeon. Detached from the Navy Yard, Norfolk, Va., and ordered to the Reserve Torpedo Group, Navy Yard, Charleston, S. C. **Sinclair, J. A. B.**, Past Assistant Surgeon. Resignation accepted to take effect July 22d.

Births, Marriages, and Deaths.

Born.

Lyster.—In Fort Oglethorpe, Ga., on Thursday, July 18th, to Major William Lyster, Medical Corps, United States Army, and Mrs. Lyster, a daughter. **Wright.**—In Salt Lake City, Utah, on Thursday, July 18th, to Dr. William A. Wright and Mrs. Wright, a son.

Married.

Casey—Perrong.—In Ashland, Pa., on Wednesday, July 24th, Dr. Thomas B. Casey and Miss M. Perrong. **Cole—Schultz.**—In New York, on Thursday, July 25th, Dr. Andrew Cole and Mrs. Anne Schultz. **Jones—Heaton.**—In Newport, Ky., on Tuesday, July 16th, Dr. Charles Jones and Miss Catherine Heaton. **Lowry—Burns.**—In North Washington, Pa., on Wednesday, July 17th, Dr. Walter A. Lowry and Miss Mary Irene Burns. **McFarland—Budd.**—In Burlington, N. J., on Wednesday, July 24th, Dr. James McFarland and Miss Goldy Budd. **Provandie—Bell.**—In Collingwood, Ontario, on Monday, July 22d, Dr. Paul H. Provandie and Miss Margaret Flora Bell. **Rank—Cary.**—In Manitowoc, Mich., on Thursday, July 18th, Dr. A. F. Rank and Miss Catherine Cary. **Sammis—Stanley.**—In Milbridge, Me., on Tuesday, June 18, Dr. George Frank Sammis, of Brooklyn, N. Y., and Miss Frances Stanley.

Died.

Anderson.—In Tanglewood, Texas, on Thursday, July 18th, Dr. George M. Anderson, aged seventy-three years.

Bellows.—In Huntington Valley, Pa., on Friday, July 19th, Dr. Horace M. Bellows, aged seventy-three years.

Boyd.—In Nashville, Tenn., on Saturday, July 20th, Dr. H. Boyd.

Bryning.—In Atchison, Kansas, on Sunday, July 14th, Dr. J. V. Bryning, aged seventy-five years.

Caffery.—In San Antonio, Texas, on Thursday, July 18th, Dr. Russell Caffery, aged forty-five years.

Clark.—In Kansas City, Mo., on Sunday, July 14th, Dr. J. T. R. Clark.

Cochran.—In New York, on Wednesday, July 17th, Dr. Frank T. Cochran, aged sixty years.

Condict.—In Lebanon, Pa., on Sunday, July 21st, Dr. Frederick L. Condict, of New Brunswick, N. J.

Cooper.—In Wellsville, N. Y., on Wednesday, July 17th, Dr. John Monroe Cooper, aged forty-six years.

Dickerson.—In Bowling Green, Ky., on Monday, July 15th, Dr. W. H. Dickerson, aged seventy-nine years.

Dolan.—In Gaylordsville, Conn., on Wednesday, July 17th, Dr. John A. Dolan, aged forty-six years.

Eason.—In Cobbtown, Ga., on Sunday, July 14th, Dr. M. W. Eason.

Exton.—In Arlington, N. J., on Thursday, July 25th, Dr. James A. Exton, aged sixty-seven years.

Gibbes.—In McAlester, Okla., on Thursday, July 18th, Dr. Heneage Gibbes, aged seventy years.

Hayes.—In Cincinnati, Ohio, on Tuesday, July 23d, Dr. Michael W. Hayes, aged seventy-two years.

Hollister.—In Portland, Ore., on Wednesday, July 17th, Dr. Otis C. Hollister, aged forty-nine years.

Houston.—In Falls City, Neb., on Tuesday, July 16th, Dr. Isaac N. Houston, aged fifty-one years.

Hoyt.—In La Crosse, Wis., on Wednesday, July 17th, Dr. R. W. Hoyt, aged sixty years.

Hutchison.—In Denver, Colo., on Tuesday, July 9th, Dr. J. C. Hutchison.

Kreiter.—In Akron, Pa., on Wednesday, July 17th, Dr. John S. Kreiter.

La Rue.—In Logtown, Texas, on Sunday, July 14th, Dr. James La Rue.

Manchester.—In Schenevus, N. Y., on Sunday, July 21st, Dr. Delos Burd Manchester, aged fifty-four years.

Maschner.—In Minneapolis, Minn., on Wednesday, July 17th, Dr. Albert Paul Maschner, aged thirty-one years.

Michael.—In Sherman, Texas, on Friday, July 19th, Dr. W. L. Michael.

Moore.—In Summit, Miss., on Thursday, July 18th, Dr. W. W. Moore, aged seventy-four years.

Moorman.—In Haleford, Va., on Tuesday, July 16th, Dr. J. A. Moorman, aged seventy years.

Norton.—In Tiffin, Ohio, on Wednesday, July 24th, Dr. James A. Norton, aged sixty-eight years.

Pusey.—In Louisville, Ky., on Monday, July 22d, Dr. H. M. Pusey, aged fifty-four years.

Ramsbrook.—In Huntingsburg, Ind., on Monday, July 22d, Dr. Christian R. Ramsbrook, aged forty-two years.

Watkins.—In Philadelphia, on Tuesday, July 23d, Dr. Theodore F. Watkins, aged seventy-nine years.

Westfall.—In Bushnell, Ill., on Saturday, July 20th, Dr. E. K. Westfall, aged seventy-three years.

Wood.—In St. Louis, Mo., on Tuesday, July 23d, Dr. William E. Wood.

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Original Communications.

THE PROTEINS.

BY DONALD D. VAN SLYKE, PH. D.,
New York.

(From the Laboratories of the Rockefeller Institute for
Medical Research.)

The realm of the proteins is a large one, and the choice of the most interesting provinces would doubtless vary, according to whether the field were surveyed by the chemist, the physicist, or the biologist. In outlining the present paper, therefore, the writer does not pretend to have solved the difficult problem of choosing the most significant sections from the entire field, but is frankly admitting to have been influenced by the direction of the work in this laboratory. We shall consider first the organic structure of the proteins, then certain of their chemical, physical, and physiological properties, indicating some of the apparent relationships between these properties and the organic structure.

ORGANIC STRUCTURE.

The present conception of the structure of the proteins is due essentially to the work of Emil Fischer and of those who were either directed or inspired by him. Stating this conception briefly: the proteins are combinations of the α -amino¹ acids which are linked together in chains by condensation between the carboxyl and amino groups of the different acids. That is, the NH_2 group of one amino acid and the COOH group of another combine with elimination of H_2O , and are bound together by a $-\text{CO}-\text{NH}-$ bridge, or *peptid linking*. Any number of amino acids can be thus, so to say, dovetailed to form chains of unlimited length, and such great molecules as we meet in the proteins. Every known property of the proteins is consistent with this theory, and while the structure of a single protein has not yet been worked out in absolute completeness, yet we may say that the existence of this *type of structure* in the protein molecule has been definitely proved by the methods of both synthesis and analysis.

The first point required to prove Fischer's theory was demonstration of the fact that the proteins actually consist of amino acids in combination. Demonstration of the manner in which the amino acids are bound together forms the second step.

Perfect proof of the first point requires the de-

¹The amino groups are in the alpha position to the carboxyl, or attached to the adjacent carbon atom; cf. structural formulas on the following pages.

composition of a protein and the isolation of amino acids equivalent to 100 per cent. of the protein decomposed. This has been even approximately accomplished only in the cases of a few of the simplest substances, namely the protamins from fish sperm, to which the name of protein may be applied. The following composition of salmin was demonstrated in Kossel's laboratory by Dakin²:

	Per Cent.	Mols.
Arginine	87.4	10
Serine	7.8	2
Valine	4.8	1
Proline	11.0	2

The fact that the amino acids add up to more than 100 per cent. is due to the addition of water to their molecules as a result of the hydrolysis.

With the more complex proteins found in the usual tissues and secretions of the living organisms, the difficulties attending the isolation of all the amino acids are so tremendous that no worker has yet approached complete success. Following is a list of the amino acids which are obtained from the complex natural proteins. The methods indicated for their determination will be mentioned in more detail later.

PROPERTIES OF THE AMINO ACIDS.

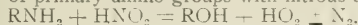
Of their properties, the following two are especially striking and important.

1. They are *optically active* (with the exception of glycocoll) that is, they turn the plane of polarized light. Of each amino acid there are three optical isomers, the levo, the dextro, and the racemic, which is a mixture of the optical antipodes in equal amounts, so that it is optically inactive. Each amino acid is always found in but one of the active forms in nature. For example, leucine always occurs as l-leucine, regardless of the nature of the plant or animal source from which it originates. Likewise the l-form of leucine is usually the only one which can be utilized by living organisms. The optical activity of the free and combined amino acids has been used with important results, especially by Abderhalden, in the study of proteolytic products and enzymes.

2. The amino acids are *amphoteric electrolytes*. They contain both *amino* ($-\text{NH}_2$) groups, which can combine with acids, and *carboxyl* (COOH) groups, which can combine with bases. Three of the acids, arginine, histidine, and lysine, called the bases, contain only one carboxyl group each, but more than one basic nitrogen atom (see structural formulæ on following page) and are conse-

²Zeitschrift für physiologische Chemie 86, 407.

are broken into $-\text{COOH}$ and NH_2 groups by hydrolysis, however, the amino groups are gradually set free. Consequently a determination of the proportion of the nitrogen present in the form of free amino groups affords a means for following the course of a hydrolysis and determining when it is complete. For this purpose we have used the reaction of primary amino groups with nitrous acid.



One atom of nitrogen from the nitrous acid combines with the nitrogen of the amino group to form elementary nitrogen gas. Under proper conditions the reaction is complete in five minutes, and the nitrogen gas can readily be purified and measured. The following results were obtained with this method by Osborne and Guest in an especially thorough investigation of the hydrolysis of casein.⁹ The casein was boiled with twenty per cent. hydrochloric acid for the lengths of time indicated, and the percentage of nitrogen present in free $-\text{NH}_2$ groups determined at intervals. The unhydrolyzed casein itself contains less than one per cent. of free amino nitrogen.

Duration of boiling with 20% HCl.	Proportion of nitrogen in NH_2 form.
8 hours.....	56.5%
24 hours.....	66.7%
48 hours.....	71.2% Completely hydrolyzed
72 hours.....	71.7% Completely hydrolyzed

It will be seen that between twenty-four and forty-eight hours are required completely to hydrolyze the casein. The importance of controlling hydrolyses by some such exact method becomes apparent when one considers that formerly six hours were regarded as sufficient time for the acid hydrolysis of a protein.

The second step, the determination of the amino acids which can be precipitated or crystallized, involves the estimation of the bases, arginin, histidin, and lysin, and of tyrosine, glutaminic acid, and cystin. Glutaminic acid crystallizes as the hydrochloride when the hydrolytic mixture is concentrated and saturated with hydrochloric acid gas. What fails to crystallize can be regained later to a large extent from the esters. Tyrosine crystallizes from the neutralized solution. The bases and undestroyed cystin can be precipitated by phosphotungstic acid and determined without loss, by methods to which we will refer later. Altogether, these six amino acids are capable of fairly accurate determination.

By Fischer's ingenious *ester method* ten of the remaining amino acids (see table above) are obtained more or less completely. When they are heated in an alcoholic solution of hydrochloric acid, they combine, by means of their carboxyl groups, with the alcohol to form *esters* ($\text{R} \cdot \text{COOH} + \text{HOCH}_3 = \text{RCOOC}_2\text{H}_5 + \text{H}_2\text{O}$),

acid alcohol ester

which are liquids and can be distilled under diminished pressure. By distillation they are freed from nonvolatile impurities and separated into the two groups indicated above. The yield of esters, though never quantitative, can be increased by repeating the process. Nevertheless, some of the chief losses of the hydrolysis are at present connected with the esterification.

The separation of the individual amino acids in

each group presents a further problem. For the acids from the esters boiling above 90° Fischer devised special methods when the ester method was first developed. Between the two chief ester fractions there is often obtained, however, an intermediate fraction containing aspartic ester, the lowest boiling of the upper group, and leucin ester, the highest of the lower. The leucin and aspartic acid were difficult to separate until Osborne and Liddle found that after neutralizing the aspartic acid the leucin could be readily crystallized pure.¹⁰

A systematic separation of the amino acids from the lower fraction has been only within the last three years accomplished in the laboratory of the Rockefeller Institute. Crystallization, the method previously employed, is incomplete, and sometimes futile; because the amino acids form salts or mixed crystals with each other, and in certain proportions some of these mixtures absolutely defy separation by any number of recrystallizations. This is particularly true of the leucin, isoleucin, and valin. We are now able,¹¹ however, to quantitatively precipitate the leucin and isoleucin as the lead salts. The valin is regained from the filtrate. The proportions in which the two leucin isomers are present in the precipitate can be determined by the optical rotation of their solution, isoleucin having more than twice the rotation of leucin when dissolved in twenty per cent. hydrochloric acid solution.

Valin and alanin often show a similar inclination to crystallize together. The separation of this mixture has finally been accomplished by the precipitation of the alanin with a concentrated solution of phosphotungstic acid.

Alanin and glycocoll also are obtained in one (the most soluble) crystal fraction. The glycocoll can, however, be precipitated as the picrate, as shown several years ago by Levene,¹² or as the ester hydrochloride, Fischer's original method.

A crude separation of the prolin from all the other acids of this fraction is obtained by extracting the mixture with alcohol, in which the prolin is extremely soluble, the others only with difficulty. The extract always contains greater or less amounts of the other acids, however, for the determination of which no means was suggested until the nitrous acid method for determination of amino nitrogen became available. From the structural formulas it will be seen that the nitrogen atom of prolin forms part of the pyrrolidine ring, and therefore is not in the form of a primary amino group. All the other acids from this ester fraction contain only primary amino nitrogen. Therefore a determination of the amount of primary amino nitrogen in the crude prolin shows the amount of other acids present as impurities, and the pure prolin can be accurately calculated from the difference.¹³

The separation of the acids esterified is therefore now fairly complete. The process of esterification, and the extraction and distillation of the esters are responsible for the important losses in this group, and improvement in these steps requires next attention.

⁹Osborne and Liddle, *American Journal of Physiology*, xxxvi, 420, 1910.

¹⁰Levene and Van Slyke, *Journal of Biological Chemistry*, vi, 391, 1909.

¹¹Levene, *Journal of Biological Chemistry*, i, 413.

¹²Van Slyke, *Journal of Biological Chemistry*, 1911.

Of the amino acids left after extraction of the esters, even qualitative isolation is a matter of chance unless they are present in unusually large amounts.

DETERMINATION OF THE AMINO ACIDS WITHOUT ISOLATION.

The foregoing method of protein analysis is yet far from quantitative and requires from 100 to 300 grammes of material. We have, therefore, recently devised a simpler method which can be carried out on two or three grammes of protein, and indicates quantitatively the nature of all the nitrogenous products. It permits the determination of the ammonia and the four acids precipitated by phosphotungstic acid, and the division of the rest into groups according to the nature of their nitrogen. For this purpose we do not isolate the individual amino acids, but utilize an altogether different principle,¹⁴ the *analytical determination of their characteristic chemical groups*. The four precipitated amino acids, after being separated with phosphotungstic acid from the others¹⁵ (see above) are at once divided into two pairs by determination of the proportion of primary amino nitrogen in their mixture, histidin and arginin alone containing nitrogen in other forms (see table above). The arginin is determined by decomposition of its guanidin group with alkali, and the histidin is calculated from the amount of nonamino nitrogen present in excess of that in the arginin. The sulphur of the cystin is determined by one of the usual methods, and the lysin is calculated from the amino nitrogen in excess of that in the other three bases. The determinations are all quantitative and are carried out on aliquot parts of the same solution, so that separations with the accompanying difficulties and chance of loss are avoided.

Of the amino acids not precipitated by phosphotungstic acid, all except three, prolin, oxyprolin, and tryptophan, which contain nitrogen bound in imino ($-\text{NH}$) groups, have their entire nitrogen in the form of primary amino ($-\text{NH}_2$) groups. By determining separately the total nitrogen and the amino nitrogen one finds the exact proportions in which these two groups of amino acids are present.

The information yielded by the foregoing method is not only of interest in itself, but can be used as a control to the isolation method, showing in which class of amino acids the losses of esterification fall. For some purposes, the simpler method by itself, because of the small amount of material required and the quantitative nature of the results, is preferable to the more detailed but less accurate older method, and in all cases the former serves as a significant supplement to the latter. A comparison of the analyses of wheat gliadin by the two methods is illustrative. The results are expressed in terms of percentages of the total nitrogen of the protein present in each amino acid, or group of amino acids. The figures for the isolated amino acids are from Osborne and Guest's recent work (*Journal of Biological Chemistry*, 9, 426,

1911), in which the best methods now available were used.

ANALYSIS OF GLIADIN.

Amino acids isolated.		Amino acids estimated by determination of characteristic chemical groups. ¹⁶	
Arginin	5.8	5.7	
Histidin	0.0	5.2	
Lysin	0.1	0.7	
Cystin	0.3	1.2	
Glycocoll	0.0		
Alapin	1.8		
Valin	2.3		
Leucin	4.1		
Phenylalanin	1.1		
Glutaminic acid	23.0	34.5	52.0
Aspartic acid	0.4		
Serin	0.1		
Tyrosin	0.5		
One half tryptophan.	0.3		
Prolin	9.1	9.4	9.5
Oxyprolin	0.0		
One half tryptophan.	0.3		
Ammonia	24.0		25.5
Total	75.5		99.8

The hydrolysis of Osborne and Guest is undoubtedly one of the most successful ever performed, and seventy-five per cent. of the nitrogen of the protein is accounted for in definite, isolated products. The twenty-five per cent. loss is shown, by comparison with the figures of the quantitative method on the right, to fall chiefly on the group of acids (glycocoll, alapin, etc.) containing no nitrogen except that in the α -amino group. Comparison of results by the two methods applied to a series of other proteins has shown that the chief losses in isolation have regularly fallen in the same group. It is evident that in perfection of the methods of isolation those for this group, most of the amino acids in which are isolated by the ester method, require the most improvement. It is possible that the losses may be due not only to the known incompleteness of the methods of isolation, but also to the presence of amino acids which belong to the group but are yet unrecognized. The experience of Osborne, on the other hand, inclines him to the belief that the deficits are entirely accountable by the incomplete methods.

It will be noticed that the sum of the aspartic and glutaminic acid nitrogens is almost exactly equal to the ammonia nitrogen. This indicates that for each molecule of aspartic or glutaminic acid in gliadin there is one molecule of ammonia. The same relation has been shown by Osborne, Leavenworth, and Broutlecht¹⁷ to hold for a large series of proteins. Together with the manner in which the ammonia is split off by acid or alkali, this relation, as pointed out by Osborne, indicates that the ammonia exists in acid amid combination with the glutaminic and aspartic acids, which in the protein molecule are in the form of radicles of glutamin $\text{COOH}-\text{CH}_2-\text{CH}_2-\text{CH}(\text{NH}_2)-\text{CONH}_2$ and asparagin $\text{COOH}-\text{CH}_2-\text{CH}(\text{NH}_2)-\text{CONH}_2$. It is probable, therefore, that in the cases of these two acids, which are distinguished from the other amino acids by having two carboxyl groups each, only one of the two groups enters into the peptid linkings described in the next paragraph, the other carboxyl being condensed with ammonia to form an acid-amid CONH_2 group (italicized in the formulas given above). This covering of the extra carboxyl groups explains why some of the vegetable proteins contain 35 to 40 per cent. of the strongly acid

¹⁴D. D. Van Slyke, *Berichte der deutschen chemischen Gesellschaft*, xiii, 376; *Journal of Biological Chemistry*, 8, 16, 1911.

¹⁵Osborne, Leavenworth, and Broutlecht have found, from analysis of a large series of proteins, that no other amino acids are precipitated with this group, *American Journal of Physiology*, xiii, 180, 1908.

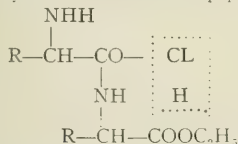
¹⁶Van Slyke, *Journal of Biological Chemistry*, x, 45, 1911.

¹⁷Loco citato.

glutaminic acid, but are nevertheless practically neutral.

SYNTHETIC PROOF OF THE STRUCTURE OF THE PROTEINS.

The methods above described have shown that the proteins are combinations of the amino acids. They do not, however, demonstrate the manner in which the amino acids are united to form these enormously complex molecules. The chemical genius of Emil Fischer divined the probability that the acids were linked together by dehydration of their carboxyl and amino groups, the carboxyl group of each acid being condensed with the amino group of its neighbor in the molecule. Fischer accordingly set to work to demonstrate by synthesis the possibility of such complexes. He devised several methods of preparing these complexes or "peptids." One of the most general and useful consists in the conversion of the carboxyl group, of one of the amino acids to be linked, into an acid chloride group. This will readily condense with the amino group of the ester of another amino acid, eliminating HCl from the two molecules and binding them together by the —CO—NH— "peptid linking."



The ester of the dipeptid thus formed can then be changed to the acid chloride, and the latter condensed with another amino acid, forming a tripeptid; and theoretically this process can be continued *ad infinitum*, until a peptid chain is obtained of as great molecular complexity as that of the native proteins. Actually as many as eighteen amino acids have been linked together, and the peptid synthesized showed properties surprisingly like those of the natural proteins: amorphous form, solutions of high viscosity, etc. Practically all of the known naturally occurring amino acids have been linked into peptids of greater or less complexity by Fischer and his coworkers. The possibility of complex chains of the amino acids being formed by condensation of the carboxyl and amino groups has been amply demonstrated.

(To be concluded.)

COMPARATIVE VALUE OF PHYSICAL SIGNS AND THE X RAY IN DETERMINING CHEST CONDITIONS.

By ELMER A. MILLER, M. D.,

New York,

Executive Surgeon, New York Throat, Nose, and Lung Hospital;

AND A. JUDSON QUIMBY, M. D.,

New York,

Radiologist, New York Foundling Hospital; Radiographer, New York Throat, Nose, and Lung Hospital; Instructor in Radiology, New York Postgraduate Medical School and Hospital.

The Röntgen light has been recognized for a number of years as an important agent in the diagnosis of chest conditions, and many valuable contributions on the subject have appeared in the lit-

erature. But as the radiographical apparatus and technique have been steadily improving and little has been published recently, we trust that it may be of interest to record our observations in this series of over 150 cases, in a large proportion of which it was possible to compare the independent reports of examinations made by the board of health and the hospital staff with the radiological laboratory findings.

Röntgenology as practised in the study of chest conditions should be associated with the other means of diagnosis generally employed, as each has a distinctive value in certain cases. The improved methods employed in radiography in the past few years have increased, however, the range of cases in which it has come to be the deciding factor.

Professor Albert Schoenberg, of Hamburg, stated about five years ago: "The present position of röntgenological knowledge I can summarize by saying that we can never recognize catarrhal conditions, but we can always detect foci of infiltration before they can be found by percussion, and in some cases before they can be perceived by auscultation."

Kassabian, writing at about the same time, makes a similar statement and also adds: "A dilated bronchus with exudative material and consolidated structures surrounding it cannot be differentiated from a small cavity by means of the x ray."

Dr. Russell H. Boggs, of Pittsburgh, in 1908, reported a series of cases which he had examined, in forty of which he had a report from the State Tubercular Dispensary and also from the West Penn Hospital, each of which had made diagrams independently. The clinician, in reporting this same series of cases, concludes that: "In doubtful cases the x rays often afford sufficient information to make accurate diagnoses. That the extent of the disease is more accurately determined by the x ray than by physical findings alone." He also states that in case of dispute Doctor Boggs was able by the use of a small diaphragm and a carefully executed skiagraph of the particular area under discussion, to differentiate between dilated bronchus and cavity, and, as early as 1901, Wassermann was able to demonstrate a cavity that was not detected by physical examination.

In order fully to appreciate the value of a radiograph in any pathological condition, it is necessary for the practitioner to have a general idea of the methods of the radiographer and also to study a large number of skiagraphs of the normal subject, as well as of the special conditions to be considered in the diagnosis.

It is understood that the lights and shadows which make up a technically perfect radiograph are produced by the passage of the x light through substances which vary in opacity in proportion to their density, constituent elements, and volume. Thus lung tissue gives a dark image, as it offers the least resistance to the passage of light of any tissue, and the liver leaves a light area on the plate owing to its great density as a blood containing organ.

The obstacles to be overcome in securing the most complete and accurate radiographs of the thoracic contents have been great and are of a complex nature, but suffice to say that at present we are able to outline the organs by means of the fluoroscope

and study their movements; then by means of an intensifying screen and instantaneous exposure we are able to make a plate which gives a correct though slightly hazy record of their varying positions; but our most valuable skiagraphs are those made without the screen and requiring an exposure of one fifth to one and one half second. These represent in accurate detail slight differences in the density of the parts under consideration and are the result of the most careful manipulation of the apparatus and patient after considerable preliminary study of each case. In order to represent quite accurately a third dimension, and enable us to see the superimposed shadows in perspective, two separate plates are exposed, in immediate succession and under exactly the same conditions, except that the tube is moved horizontally two and one half inches to correspond with the average pupillary distance. These plates when placed in a special apparatus give the effect familiar to all in the parlor stereoscope and enable the observer to determine the relationship of the larger shadows. Finer detail is obtained in doubtful conditions by sectional radiographs of small areas made under specially arranged conditions and at various angles.

The principal points to be noticed in a radiological chest examination are these:

1. Heart—
 - (a) Position
 - (b) Size.
 - (c) Outline.
 - (d) Movement.
2. Lungs
 - (a) Quality of structure throughout.
 - (b) Arborization.
 - (c) Outline of surface and excursion of diaphragm.
 - (d) Adventitious tissue, exudates, and cavities.
 - (e) Foreign matter.
 - (f) Condition and contents of pleural sac.
3. Mediastinum. Position, size, and outline of—
 - (a) Trachea.
 - (b) Esophagus.
 - (c) Aorta and vessels.
 - (d) Lymphatics.
 - (e) Neoplasms.
 - (f) Foreign bodies.
4. Osteocartilaginous structures—
 - (a) Size, position, and relation.
 - (b) Calcification, rarefaction, or sclerosis.

The normal lung should present a very faint shadow, slightly denser toward the hilum and base. Beginning at the hilum the main branches of the bronchi and pulmonary vessels may be plainly seen on account of the large amount of fibrous tissue in the former and the blood in the latter. It should be possible in many cases to distinguish between them at this point, as the bronchi manifest their hollow structure by dense borders and light centres, while the reverse is true of the bloodvessels. In their finer ramification, however, they are considered collectively and constitute the pulmonary arborization, and in their continuation toward the periphery present a more veiled appearance, as of interlacing net work. It should also be understood that on account of various shadows being superimposed, it is not possible to give full value to each part on one radiogram, but a separate set of conditions must be arranged for each phase which we desire to record, since the angle from which the rays are directed, as well as the position of the pa-

tient and relation of plate to patient, will vary the appearance of the parts under observation.

The cases in which radiology is especially valuable in making a diagnosis of pulmonary tuberculosis, before the disease may be determined by physical signs, may be classed as follows: Group A, in which there are areas of infiltration. Group B, in which scattering glands are infected.

Under group A three areas are generally considered by diagnosticians, the apex or subclavicular fossa, subscapular area or root, and the base. Of these our examinations would lead us to believe that the subscapular area is more commonly the first area affected than has been generally noted. And in this area also the physical signs are more obscured by the chest wall.

We have also noticed that in some cases an extensive process on one side may be continued for some months with fibrosis, which has escaped notice till a more acute process on the opposite side calls attention to the case, and at such times the more serious lesion gives no distinguishable signs.

The cases in which a few miliary tubercles in various parts of the parenchyma are plainly visible usually give but a few râles and no impairment of resonance, but, as it is possible to show on the radiographic plate tubercles much smaller than a pea, and the appearance is quite characteristic, these cases form a most important part of this group.

Several cases have also been encountered in which considerable areas of infiltration near the hilum with overlying normal or emphysematous lung tissue, gave no appreciable signs at the time of the first examination. In other cases conglomerate masses of appreciable size, in which one part was in the stage of infiltration, and other areas in the fibrous stage, so masked the physical signs when the lesion occurred near the base or around the heart border, or in muscular individuals, that the radiograph was the determining factor in diagnosis.

Group B. While it has long been known from autopsy findings that a large proportion of the inhabitants of cities have at some time had an unrecognized tuberculous infection of some pulmonary glands, it is now possible not only to determine the extent of such infection, but also to observe an infiltrated area around their sharply defined border at an early stage when breaking down occurs.

Another class of incipient cases in which the radiograph is valuable may be divided between groups A and B. In these cases the tuberculous process is secondary to, or superimposed on some other disease, as bronchitis or pneumonia.

In differential diagnosis the field of radiography is constantly extending, though positive statements on many conditions would as yet be premature.

In the following conditions, however, the radiographic findings are accepted as positive: Areas of consolidation, infiltrated glands, calcification (of glands, tubercles, or costal cartilages), foreign bodies, dilated bronchi, cavities (either full or draining), thickened bronchi and fibrosis, aneurysm, presence of neoplasms, misplaced organs, constrictions, dilatation or diverticulum of esophagus and cardiospasm, pulmonary abscess, diaphragmatic hernia, pleural adhesions, and usually pleurisy with or without effusion. While a sufficient number of

cases of the various neoplasms have not yet been recorded to make a discrimination always possible, yet we believe these may be differentiated from tuberculosis or the almost universal calcified glands.

As a means of supplemental diagnosis radiography is particularly useful in outlining deep seated cavities that it is impossible to define otherwise, and in determining the nature and extent of miliary tubercles, anthracosis, and mycotic infection.

In carcinoma, lymphosarcoma, syphilis, blastomycosis, anthrax, Hodgkin's disease, subphrenic abscess, pneumonia, anomalies, and various inflammatory conditions the radiograph is of great value in determining the extent of the process, but without the aid of other factors would be insufficient in many cases for a positive differential diagnosis. As a means of graphically recording progress during the course of diseases affecting the thoracic contents, and preserving accurate records as a basis for prognosis, the skiagraph is unique and of incomparable value. Furthermore, we believe that it more nearly eliminates the personal equation of the examiner than other methods.

We are not advocating the separation of radiography from the methods of diagnosis formerly employed, but believe that the clinician, radiologist, and pathologist should be closely associated in the study of every possible case.

In examining a chest one may notice by inspection any inequalities in appearance, the location and quality of the apex beat, the movements of the chest walls, and of each side as compared with the other, and by the x ray determine whether these conditions are influenced by pleural adhesions, fixation of the diaphragm, calcification of the costal cartilages, displaced organs, effusions, or neoplasms. It is possible in most cases to determine Williams's sign (limited movement of the diaphragm on the affected side) by the x ray before any loss of movement is noted on inspection.

By percussion one determines the resonance of all the areas of the chest, but as this represents the average of all the tissues in each area, it has been found possible to outline areas of infiltration and emphysema with the x ray before they give appreciable physical signs.

We believe that auscultation should be practised in all cases both with and without the stethoscope, as one sign especially (bronchophony) can be better determined by the unaided ear on account of the magnification of sound as heard through the stethoscope. We have had the opportunity of comparing the recorded results of auscultation from many sources, and while the reports from careful clinicians and the laboratory usually agree in detail, we fear that from lack of interest or careful training of the ear one class of practitioners overlook important features, and another class, perhaps influenced by sentiment or family history, have developed a supersensitive ear and record imaginary findings. But here again the x ray is often indispensable to clear up the physical findings.

The tuberculin tests have not proved to be of great diagnostic value, with the possible exception of Koch's test, that of injecting tuberculin into the patient's muscles. In our experience Koch's test, when negative, indicates that the patient has never

had a tuberculous infection; when positive without increasing physical signs, indicates an old healed lesion; when it is positive and increases physical signs, or makes them evident when they were negative, it is reasonable to conclude that the patient has an active though possibly mild infection. This test must be used with caution and judgment.

Von Pirquet's test or vaccination with tuberculin, is of value only when negative, except in young children, as it is presumed that the great majority of adults have at some time been infected with tuberculosis.

Calmette's test has the same relative value as von Pirquet's, but is more dangerous, especially in the hands of one not familiar with eye work.

Moro's test, or rubbing tuberculin into the skin, we are not familiar with from experience, but cannot imagine its superiority to von Pirquet's test.

Our use of the fluoroscope as an independent means of diagnosis leads us to consider it of great value in estimating the amount of infiltration or fibrosis and determining the excursion of the diaphragm, but as generally used little else is learned that could not be determined by the physical signs, if one has a trained ear and makes a careful examination. However, where good apparatus and proper facilities are provided, one may acquire experience in its use which greatly facilitates the location of gross lesions for further detailed study.

In this series one of us (Doctor Miller) has made a careful physical examination in fifty of the cases at the New York Throat, Nose, and Lung Hospital, and together we have studied the skiagraphs and laboratory reports, prepared independently by Doctor Quimby, and have observed that in the cases diagnosticable by physical signs our findings agreed quite accurately, whereas in a few cases that could not be determined by physical signs, the skiagraphs showed small lesions or enlarged or calcified tuberculous glands at the root of the lung, which explained the physical condition of the patient. As the reports from the clinician and the x ray laboratory were almost identical in thirty-two of these, we refer briefly to the fourteen cases in which there was some variation.

One case in which a cavity had been diagnosed, the x ray showed it to be a double cavity, that is, two cavities closely adjoining.

In three cases the x ray showed calcified glands not diagnosticable by physical signs.

In one case the x ray determined the size and position of the heart caused by several lesions which was a puzzle on physical examination.

In two cases the x ray and physical examination wholly disagreed. In one the examination gave flat percussion note with small mucous râles at left apex and left base, but not bronchophony in either locality. The case is an old one, the patient has never shown tubercle bacilli in sputum and has been improving since the discontinuance of injections of tuberculin which had been persisted in for some time, the patient desiring it and the physician in attendance thinking it benefited her. The skiagraph showed old, extensive, fibrinous bronchitis. In the other case the chart was not made by Doctor Miller, and from what he remembers of the case, he is inclined to believe the x ray result, as this

patient has a lung capacity of 150 cubic inches and readily increases it to 184. The normal for her height would be about 158, therefore she could not have very much lung involvement with such a lung capacity and no physical signs to account for it. This patient is now practically well, as she had an arrested case some months ago—the x ray showed infiltration of left apex and the physical examiner reported much involvement.

Another case in which the x ray gave findings of fibrous deposit at both apices with bronchitis, the clinical report gave consolidation of left apex and sonorous râles over the left chest; x ray and physical test agreeing on bronchitis. The examination of sputum was negative in the case.

Two cases showed cloudiness of right apex not found on physical examination.

One case in which physical test indicated cavitation, Dr. N. N. Stark and Doctor Miller agreed on the findings; whereas the x ray indicated normal lung tissue, surrounded by sclerotic solid lung tissue.

One case not tuberculous, in a girl of thirteen years, where the x ray and physical test agreed in diagnosis, though not as to areas involved, the x ray plainly showed bronchitis.

In another case the x ray and physical signs agreed; but the x ray plate showed a cicatrix, drawing the vessels and heart toward the right side.

In another case the x ray showed involvement near the left apex, and physical signs showed involvement of both apices and bases. This case was not recorded by Doctor Miller.

As the cases in this present series represent all walks in life and have been studied in dispensary, hospital, and private practice by a number of clinicians of wide experience in chest conditions, and most of them have been under observation for considerable periods during the past six years, and quite a number have qualified for autopsy, we offer the following additional suggestions as to the interpretation of thoracic skiagraphs, based on these observations.

In studying any röntgenograph one should bear in mind the two factors of atomic weight and molecular density, as well as the thickness, and the distance of each part from the sensitive plate while the exposure was being made. For example, loose, areolar, and adipose tissue, which contain large proportions of water and hydrocarbons, cast only a moderate shadow, but interfere with fine detail by removing other structures a greater distance from the plate, while the heavy muscles of a working-man, which contain concentrated proteids, cast a shadow much denser than those of a flabby individual, though their apparent bulk may be the same.

In incipient cases of tuberculosis, we notice diffuse congestion around the pulmonary tree, small groups of occluded alveoli in the area of origin or small infiltrated glands, calcification of costal cartilages, and Williams's sign. Again, in old arrested cases, an area of congestion around the hilum, shading off rapidly, usually indicates an exacerbation of an arrested case, while physical examination will frequently reveal only the râles, generally attributed to bronchitis. In a case undergoing resolution this area of congestion presents a more clearly defined border, and if observed at intervals may be seen to gradually retreat toward the hilum.

The mineral salts as found in bone and calcareous deposits, give a very dense shadow with clearly defined outlines, in marked contrast with the soft tissue. Thus, when bronchial glands are in the inflammatory stage, they present a fairly dense shadow of oval or rounded form. When an irregularity is noticed in part of the outline with cloudiness in the adjacent lung shadow it is believed to be due to a destructive process, while a calcified gland will cast a sharply defined shadow as dense as that of bone. Enlarged pulmonary glands, as observed in the skiagraph, should not be considered indicative solely of tuberculosis as they are noted in leucemia, malignancy, syphilis, and inflammatory conditions. Boggs states that in his radiographs of a series of cases following operations for cancer of the breast, the bronchial glands were enlarged and showed quite plainly on the plate, but less distinctly than tuberculous glands. In our own cases of primary and secondary carcinoma the same was true and the mottled appearance of the lung tissue characteristic of tuberculosis was absent.

The radiographical picture of pneumonia changes rapidly with the development of the disease. The unresolved cases are occasionally met with and present a peculiar mottled appearance, which we can best compare to the shadow cast on the ground by the sun shining through the leaves of a small bush.

The fibrous tissue and exudates which are found in a thickened pleura might pass unnoticed were it not for their very irregular outline, great variations in density, and the fact that they generally limit the movement of the overlying ribs.

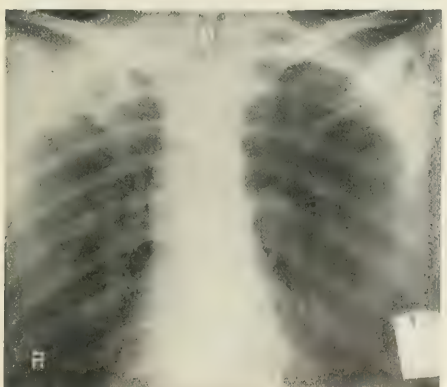
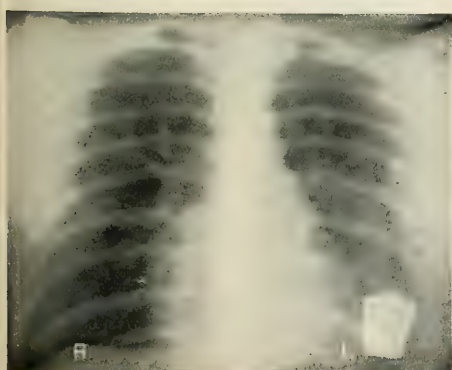
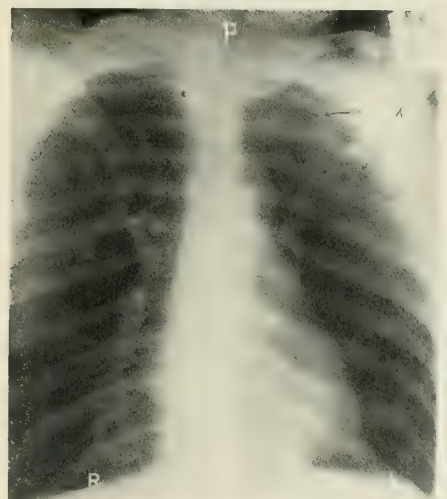
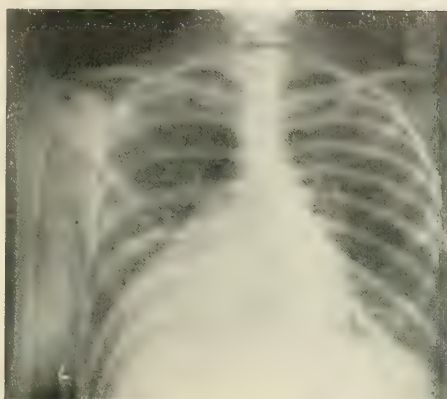
Such conditions as pneumohydrothorax or pyothorax and collapsed lung are usually so sharply outlined that they would be readily diagnosed by a novice, as even a moderate amount of fluid casts a shadow of such great density that other outlines are obliterated, while air casts no perceptible shadow, thus making a marked contrast with the spongy lung tissue and also permitting greater detail in the image of the chest wall where lung tissue is absent.

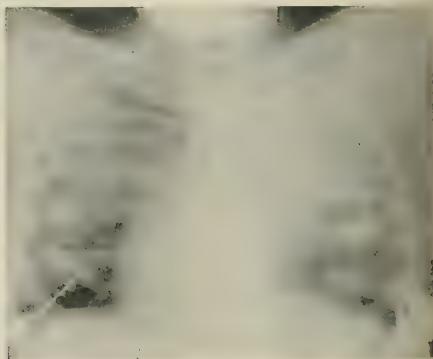
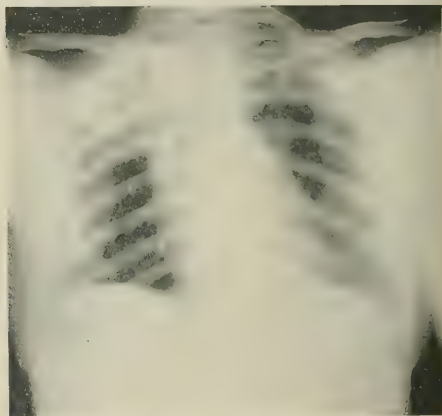
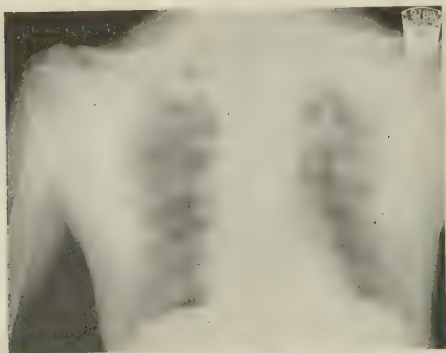
In each of these conditions the displacement of the heart and great vessels and compensatory emphysema will be noted to correspond quite accurately with the extent of the process. The collapsed lung tissue itself presents a shadow of very different character from the normal, being hazy and much denser with a sharply defined border.

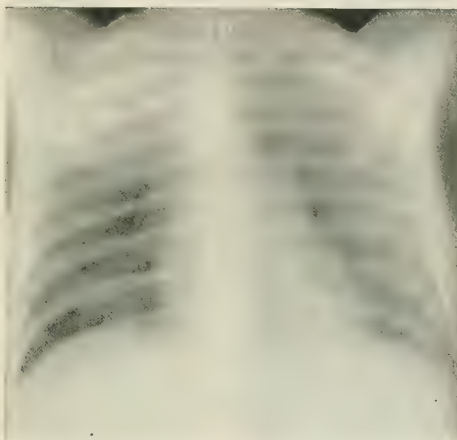
In emphysema the area of the lung is increased and the shadow is much lighter, while a downward displacement of the diaphragm on the affected side may be noted if the process is extensive.

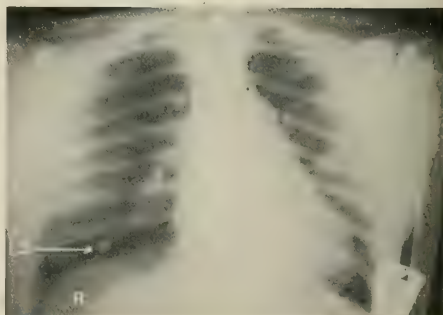
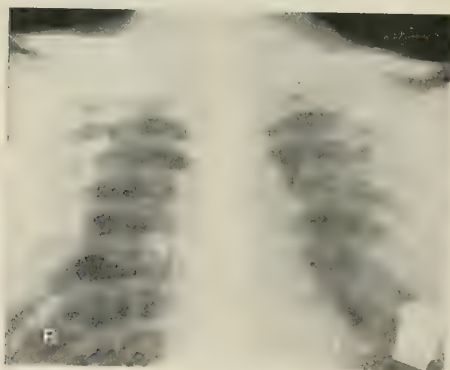
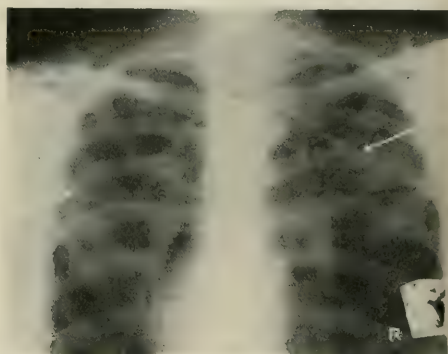
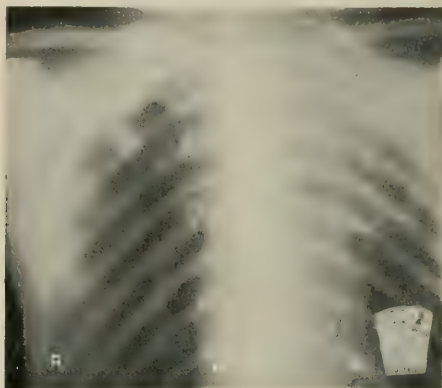
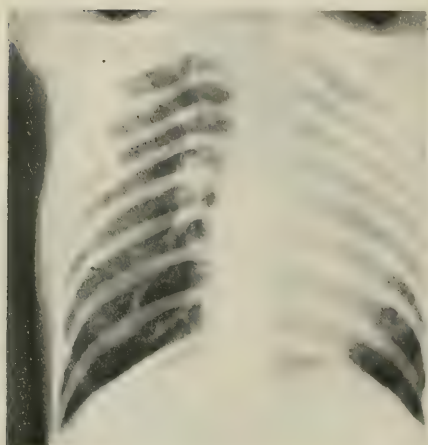
In our own practice we regularly make two exposures of the thorax, one in the supine and the other in the prone position with the patient lying flat on the plate holder in each case. By a comparison of these, one readily determines whether a lesion is nearer the anterior or posterior chest wall.

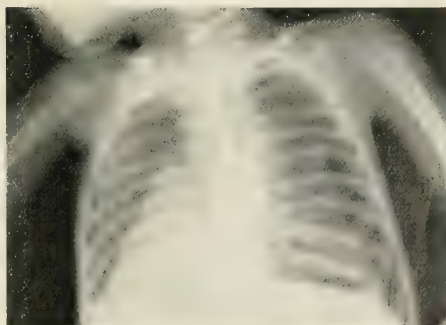
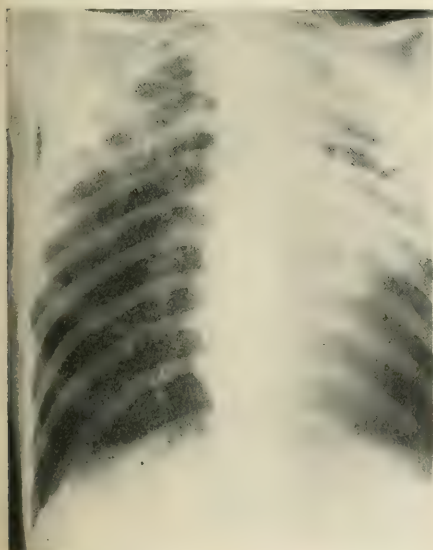
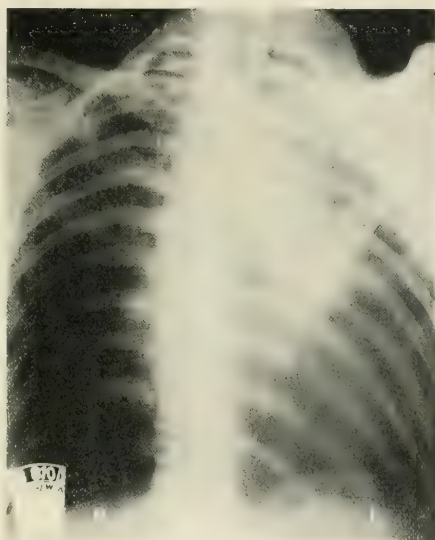
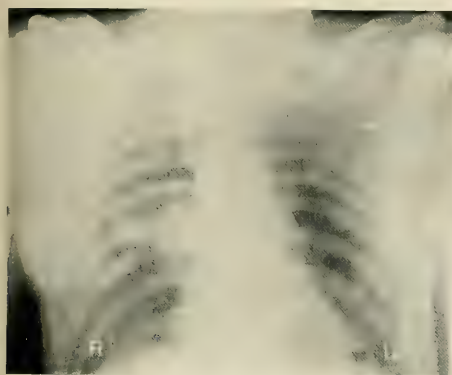
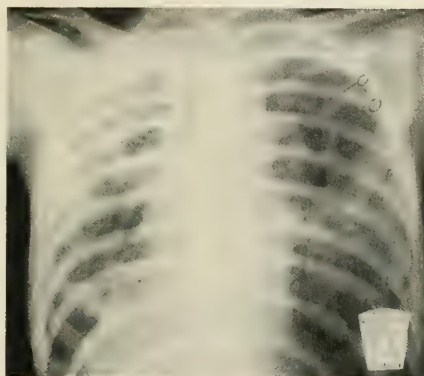
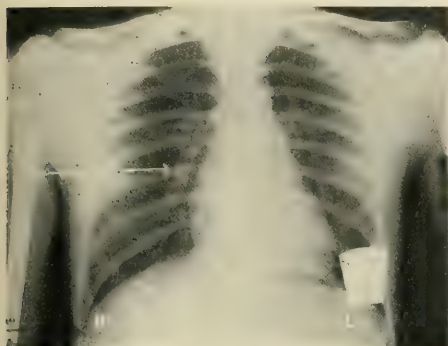
When superimposed shadows of doubtful significance are present, it is often possible to show their extent and nature by a stereographical pair. We prefer, however, to study doubtful areas separately, and by arranging conditions for the shortest possible exposure have had no difficulty in showing plainly the difference in appearance between the











walls of cavities and various forms of dilated bronchi. We find this method advisable also where physical signs are negative, but the skiagraph of the entire chest shows a slight cloudiness in some part.

We have found the skiagraphs especially interesting in cases in which small areas of deep seated consolidation were plainly visible, but as they were overlaid by emphysematous lung, they gave normal resonance and no râles; also in cases in which pleural adhesions or consolidated lung tissue almost surrounded the distended areas, giving a strong suspicion of cavity on percussion.

Our experience with gumma of the lung had been limited to but few cases, which showed very dense glands and much infiltration, while in one case which came to us diagnosed as syphilis, our report of probable primary carcinoma was confirmed by a negative Wassermann reaction and the rapid characteristic termination of the case. In metastatic carcinomatous glands the location in regard to the original lesion, and the fact that they were less dense in proportion to their size than tuberculous glands, assisted in the diagnosis. In cases of tuberculous adenitis, enlarged pulmonary glands are usually present and the bacilli frequently found at intervals in the sputum.

We have treated a large number of cases of leucemia, and in the cases which we have had occasion to radiograph, the enlarged pulmonary glands were not so dense in structure as in tuberculosis.

In studying the shadows of the mediastinum we notice that the heart is slightly displaced in a very large proportion of tuberculous patients, that the right auricle is hypertrophied or dilated in almost all advanced cases, also that the position of the arch of the aorta varies so greatly as frequently to arouse suspicion of an aneurysm.

The enlarged mediastinal glands occur with great frequency and occasionally cause displacement of the large vessels or esophagus, which cause confusing shadows.

CONCLUSION.

We conclude from our experiences in this series of cases that a radiological study of the chest is of value to the clinician in:

1. Early diagnosis of tuberculosis.
2. Differential diagnosis.
3. Supplemental diagnosis.
4. Prognosis based on the comparison of graphic records during progress.

EXPLANATION OF ILLUSTRATIONS.

FIG. 1A.—Mrs. D., referred for diagnosis with history of loss of weight, persistent cough, and expectoration. X ray findings: Bronchitis, restricted breathing, adherent pleura over diaphragm, calcified costal cartilages and glands. Examination for tubercle bacilli, negative. Greatly improved by ocean voyages.

FIG. 2A.—Mr. L. M. Dr. N. N. Stark's patient: Scoliosis; cardiac hypertrophy; emphysema of upper lobes. X ray also showed fibrinous bronchitis.

FIG. 3A.—Miss A. S. Service of Doctor Miller. Fibrinous bronchitis; mild dilatation of left auricle. Physical examination and x ray report were identical.

FIG. 4B.—Mrs. S. G. Service of Doctor Miller. Infiltration of left apex anterior; impaired percus-

sion note to fifth interspace; diminished breath sound right base. X ray showed triangular area of infiltration in upper lobe at K.

FIG. 5B.—Mrs. J. M. Service of Doctor Miller. Infiltration of both apices, very slight on right; few crepitant râles at left apex; thickened pleura and friction râles at left base. X ray findings: Haziness of right apex, infiltration of left apex, and cloudiness of entire lung, especially at base. Arrested case.

FIG. 6B.—Miss K. H. Physical examination: Bronchial breathing all over back of chest. X ray findings: Infiltration of right apex.

FIG. 7C.—Mr. P. F. K. Service of Doctor Miller. Consolidation of both apices; prolonged expiratory murmur; bronchophony; large, moist râles, right apex. X ray findings: Areas of infiltration and consolidation in both upper lobes, more extensive in left side.

FIG. 8C.—Wm. H. Referred for diagnosis on account of discrepancies in physical signs as noted at various examinations. X ray report: Areas of infiltration with consolidation in both apices with bronchitis; both processes of long standing.

FIG. 9C.—J. C. Service of Dr. N. N. Stark. Infiltration of right apex; subcrepitant and sonorous râles, anteriorly and posteriorly; slightly impaired percussion note at both apices and bases, posteriorly. X ray findings: Infiltration of both apices; extensive fibrous deposits throughout both lungs.

FIG. 10D.—Mrs. A. J. Referred on account of disagreement of opinion after various physical examinations. X ray showed moderate consolidation at right apex, an old involvement extending out from root; left apex infiltrated; restricted movement of diaphragm on both sides.

FIG. 11D.—Mrs. E. B. Service of Doctor Miller. Extensive consolidation of left upper lung, rapidly progressive; compensatory emphysema. Patient died six weeks later. X ray examination, made one week later, showed involvement of entire left lung.

FIG. 12D.—Mrs. K. P. Service of Doctor Miller. Consolidation of right apex to fifth rib, and infiltration to seventh; prolonged expiratory murmur and hyperresonance over all of left; miliary tuberculosis in varying degree over both lungs. N mammary gland.

FIGS. 13 and 14D.—Mrs. E. J. Service of Doctor Tannenbaum. Physical examination: Laryngeal tuberculosis, involving both cords; scoliosis; consolidation throughout left lung and impaired percussion note at the right apex; pregnant. Patient died two months later. X ray findings: Consolidation of lower two thirds of left lung; large area of infiltration at root; an area of normal lung, surrounded by consolidation, thus simulating cavity at E; two areas of mild infiltration periphery of right lung.

FIG. 15D.—McH. Service of Doctor Stark. Impaired percussion note at right apex, anteriorly and posteriorly, with thickened pleura to fifth rib. X ray: Involved areas at right apex and both roots, shown at S S.

FIG. 16D.—Posterior view of same case, showing marked infiltration of right upper lobe. Patient improved rapidly under treatment in camp.

FIG. 17E.—Mr. C. Referred for diagnosis, with history of cough for three years, gradual loss of weight, impaired percussion note, and various types of râles over both lungs. X ray findings: Consolidation of left base and diffused fibrosis of both lungs; pleural adhesions near lower border of sternum on right, indicated by arrows.

FIG. 18F.—L. G. Service of Doctor Stark. Miliary tuberculosis, involving both lungs and throat; many and various râles all over chest; areas of emphysema near both roots. X ray agreed: Many small tubercles and more advanced involvement of apices.

FIG. 19G.—Miss M. H. Service of Doctor Miller. Sent to Otisville: "Complete involvement of left lung with cavitation in upper lobe; pleuritis at base with thickened pleural and lung retraction; infiltration of right apex with probable extension at upper lobe." X ray agreed in detail.

FIG. 20G.—A. L. Referred for diagnosis with history of disagreement in physical findings. X ray findings: Consolidation left apex to sixth rib, posteriorly; infiltration right apex.

FIG. 20H.—T. M. Service of Doctor Miller. Involvement of both apices, shown by x ray with pleural adhesions, *P P*; two months later involvement of both apices was demonstrable by physical signs.

FIG. 22H.—Anterior view of same case, showing pleural adhesions, *P P*. Bacilli appeared in sputum about three months later.

FIG. 23H.—C. K. Referred for diagnosis with suspected cavity in right lung, shown to be local emphysema. X ray findings: Both apices involved an old bronchitis with extensive fibrosis; pleural adhesions near right root.

FIG. 24I.—Miss L. M. Service of Doctor Miller. Impaired percussion note over both apices; rough breathing over both apices posteriorly and left apex anteriorly; few crackling râles, right apex; thickened pleura and friction râles, right base. X ray: Bronchitis; lung stone, *L S*; right base, evidently due to very old tuberculosis; some emphysema; calcified glands; large left heart.

FIG. 25I.—Miss G. H. Service of Doctor Miller. Impaired percussion note over both apices; friction sounds at both bases; thickened pleura at left base; arrested case. X ray findings: Large calcified glands, *G*; some thickening around main branches of bronchial tree.

FIG. 26J.—Mrs. S. D. Service of Doctor Miller. Great infiltration at both apices to fifth rib, with crepitant râles front and back; cavity near right apex. X ray findings: Agrees fully, except that the cavities *O O* were two in number, close together.

FIG. 27K.—B. S. Referred for report on progress with history of ten years' duration. X ray findings very extensive, fibrosis almost obliterating the chest cavity.

FIG. 28L.—A. D. X ray report: Oblique view; neoplasm (malignant), beginning near left root; compensatory emphysema; large mass near left root with infiltration of upper half of left lung and subscapular regions on right. Patient died five weeks later.

963 MADISON AVENUE.

40 EAST FORTY-FIRST STREET.

HEATH'S CONSERVATIVE MASTOID OPERATION AND ITS PATHOLOGICAL FOUNDATION.

By F. A. LESLIE, Ph. B., M. D.,
Toledo, Ohio.

Heath's conservative mastoid operation was designed by Mr. Charles J. Heath, for the purpose, primarily, of saving the hearing of patients with discharging ears. According to him, the aurist is not of much use if he cannot prevent aural suppuration from destroying the hearing. Heath's mastoid operation is more effective in curing tympanic disease than Schwartz's cortical operation, and it is not destructive like the severe radical operation, for in the latter the drumhead and hearing bones are removed, and after their removal, there is no possibility of perfect hearing. Heath's operation, if performed in time, is successful in saving life as well as hearing, as the "danger zone," viz., the antrum, is thereby permanently obliterated. Heath's operation is called "conservative" because it eliminates the "danger zone," yet preserves all the structures which are essential to perfect hearing.

PATHOLOGY.

Heath teaches that chronic suppurative of the middle ear is so uniformly accompanied by some disease in the mastoid antrum that, for the purpose of practical diagnosis and treatment, it is best to assume that this combination is universal. The antrum, then, being diseased, gives off a certain (usually very small) amount of septic discharge. This discharge, on its way out, passes through the tympanum, and irritates the sensitive mucous membrane there. Tympanic mucous membrane, when thus irritated, in addition to increasing the amount of its secretion, swells, swelling in such a narrow passage causes obstruction, and obstruction delays—when it does not completely stop—the drainage; delay in drainage gives time for septic pus to become more septic, more irritating, and the mucous membrane of the tympanum with which it comes in contact as it descends, becomes more and more swollen in consequence of this increasing irritation. In his opinion, deafness from aural suppuration is at first entirely due to the swelling of tympanic mucous membrane thus brought on. He also asserts that serious pathological changes in the tympanum are *practically always* secondary to disease of the mastoid antrum. He believes he has seen cases which were not so, but that such cases are far too rare, and too difficult to prove, to be allowed to influence the surgeon's line of treatment in any individual case.

The mucous membrane of the tympanum (like all mucous membranes) is naturally endowed with an abundant blood supply. In health it also has good natural drainage, and unless subjected to constantly recurring irritation by infected discharge coming from above (the antrum), has a strong tendency to spontaneous recovery.

On the other hand, the mastoid antrum, not being provided with a proper lining of mucous membrane, has but slight reparative power. As this cavity is in the petrous portion of the temporal bone, the osseous structure itself has little vascu-

larity and therefore little power of repair or of defense. Further, the antrum is not fully lined with ciliated epithelium, as are the tympanum and Eustachian tube. Therefore the blood supply of the antrum being scanty and the cavity not being well defended by vascular mucous membrane, falls an easy prey to infection, and when once infected cannot throw it off, as the tympanum can, because it is not endowed with a vascular defensive lining.

Heath found, after observations upon a vast number of patients who came for operation in all stages of chronic suppuration, that the antrum was invariably diseased, though in a large proportion of cases the change was not to be verified by the naked eye alone. He consequently formed the opinion that this cavity was usually the cause of the continuance of discharge, until the tympanum itself had thus become disorganized, and that the mucous swellings and polypi in the tympanum were the result of constant irritation by antral discharge, and might spontaneously subside if the cavity were promptly freed from this irritation. The old operations upon the tympanum itself, such as the removal of damaged membrane and ossicles, could not be relied upon to stop the discharge, and often made the bad hearing worse. Nothing was therefore gained by such procedures and occasionally much was lost. On the other hand, he found if the diseased (or apparently healthy) bony lining of the antrum was eradicated in time, that the disease in the tympanum had a natural tendency to complete and rapid recovery. With its recovery the hearing was usually restored.

The first essential of this operation therefore is the complete eradication of the mucoperiosteal and part of the bony lining of the antrum.

The second is the careful examination of the drumhead and tympanic cavity, and the thorough cleansing of the latter.

The third is the establishment of good drainage for the antrum and tympanum, through an enlarged meatus.

The fourth is proper postoperative treatment.

When the operation has been promptly done and in such a way that the foregoing conditions have been fulfilled, danger to life from cerebral or sinus involvement is eliminated, the discharge ceases, the perforation heals, and the hearing returns.

In cases of middle ear suppuration, Heath has found that there are three points where obstruction to drainage may occur. He calls these obstructions "dams." The first and most common, which is nearly always present, is the anterior or tympanic dam—i. e., it is in some part of the tympanum in front of the perforation and prevents the discharge from passing forward to the Eustachian tube. The second, or attic dam, is in the attic or upper part of the tympanum, on either side of the short process of the incus and when complete is the usual cause of acute mastoiditis. The third, which is very rare, is where the aditus joins the antrum, and is called the posterior, or circular dam, because it surrounds the drainage channel. These dams are due to swelling of the mucous membrane, and usually disappear rapidly and spontaneously after the danger zone (as Heath calls the antrum) has been obliterated by operation.

If the condition of the nose or throat does not appear to be the cause of the middle ear suppuration, Heath is an advocate of conservative mastoid operation within three months. He operates earlier if there is evidence that the discharge from the antrum (or aural appendix as he calls it) is increasing or even keeping up tympanic irritation, for as he says, he prefers to operate and arrest all disease before, and not after, the hearing apparatus is permanently damaged. If the abdominal appendix is diseased, it is the general opinion that an early operation should be performed in order that the danger zone should be removed. Now hearing is almost as important as life, yet it is the custom to tinker with the ear by the use of drops till life is threatened, before operation is suggested, and prior to Heath's doing it, and insisting on its being done saving the hearing by mastoid operation does not seem to have been seriously thought of. The conservative mastoid operation should regularly be performed to arrest discharge, before the important structures in the tympanum have become irreparably damaged by it. Some ears are destroyed by an otitis media of three or four days' duration. Others, as Heath has proved, have remained intact after forty years of discharge, though they required a conservative mastoid operation for their cure. Whether an ear is rapidly destroyed by disease or not depends mainly (according to Heath) on the varying amount of defensive vascularity of the part, and on the freedom of drainage; though the resisting powers of the individual may have some effect. INDICATIONS FOR PERFORMING THE OPERATION IN CASES OF CHRONIC AURAL SUPPURATION.

1. Continued pain in an ear which is discharging, or on that side of the head.
2. When the discharge has lasted three months in spite of attention to the ear, throat, and nose.
3. If there is bleeding, blood stained, or brown discharge coming from the ear.
4. If the perforation in the drum is enlarging. (This means that the membrane is being destroyed.)
5. If there is polypus or a bulging membrane, with a perforation draining the cavity.
6. If there is increasing deafness, giddiness, or permanently blocked Eustachian drainage.
7. If the discharge is foul smelling or abundant in spite of the use of drops.
8. If there is facial paralysis on that side.
9. Optic neuritis, fits, mental derangement.
10. Evidences of tubercle or diphtheria in the discharge (microscope) may demand a radical operation.

While operating, Heath insures a practically dry field. The bleeding points are secured as soon as they appear, and hemorrhage is controlled before the operation is proceeded with. For absorbing the blood which oozes during the operation he uses cotton wool mops which are shaped like a double cone. With the aid of forceps these can be easily and rapidly inserted, point first, into any small cavity, like the meatus or antrum, and are most effective. In making them, a pledget of cotton of the proper size and shape is wet in boiled water and wound firmly about a specially designed instrument till it is the proper size and shape. A large supply of these

mops, in three sizes, is on hand at each operation. Being damp, they are very absorbent, the wet wool being dried as much as possible by hand pressure in a dry towel before the mops are made up. These slightly moist cotton mops are far ahead of the ordinary method of drying a wound with gauze, because absorption is practically instantaneous, and their shape is adapted to the cavity.

A special form of rubber cap is used, which is wrapped about the head in such a way that it is unnecessary to remove any hair. This is an important point, especially if the operation is upon a woman.

THE OPERATION.

Primary Incision.—Begin one third inch behind the temporal artery on a level with the upper attachment of the auricle to the scalp; carry the incision back to this attachment, and follow the line of attachment to within one half inch of the lowest attachment of the ear. If this incision is properly made, there will be no disfigurement from it,—a matter of no little importance. This incision extends through the skin only.

Next pull the auricle strongly outward and dissect it away from the temporal fascia above the cartilaginous meatus, and from the pericranium behind and below the meatus. To prevent its slipping the auricle is held by a layer of gauze in the free hand of the operator.

Make a pericranial flap to expose a field for operation,—remembering that in this operation the mastoid is approached from the front. Feel for the supra-meatal spine. Insert the knife just above it, at the junction of the meatal wall with the cranium, and cut directly back as far as the posterior edge of the wound. The knife is again inserted at the forward end of this incision and carried downward in a crescentic curve conforming to the shape of and immediately behind the cartilaginous meatus to the level of the floor of the meatus. From the end of this incision, another parallel with the first is commenced and carried back nearly to the skin. Heath reverses the edge of the knife at the posterior ends of these parallel incisions and cuts forward in order to more thoroughly release the pericranial flap. Raise the flap thus made and hold it backward under the skin with a Heath's pericranial flap retractor. This exposes an area of mastoid bone about three fourths by one half inch, through which the whole operation is performed, thus exposing but little of the skull.

Next dissect away the ligamentous attachment, first defined and described by Heath, and called by him the coronet ligament on account of its shape, which envelops the cartilaginous meatus like a coronet and binds it to the fossa behind the supra-meatal spine. Then draw the auricle still further forward and separate the cartilaginous meatus from its attachments to the posterior part of the bony meatus. Next introduce Heath's meatal retractor. This is so broad as to prevent its entering the meatus far enough to injure the drum.

Begin the removal of bone with a large sized gouge (not a chisel) at the junction of the bony meatus with the surface of the cranium, cutting from below, and countering from above. In this way the mastoid cells are opened from the front,

and finally uncovered as far as may be desired. If no infection is found, only enough bone is removed to give working space for the approach to the antrum. Continuing inward and upward, from the opening already made in the mastoid the antrum is soon reached and the whole of its outer wall removed. Any cells found communicating with the antrum are opened up and incorporated with the common cavity. All removal of bone is done with the mallet and gouge.

By using Heath's special retractors to pull back the skin or pericranium, all, or nearly all the mastoid may be exposed and excavated (if this should be found necessary) without further extending the skin incision.

The next step is to destroy all mucous membrane in the antrum. There must be no doubt about the complete destruction of this membrane, for it has been found that the least vestige of it will persist as a septic focus and continue to discharge pus, and the antrum therefore will not subsequently fill with granulations. The operation from neglect of this detail may be a failure. For the thorough extirpation of the lining of the antrum he uses an especially small bent hand burr with a very long stem.

A mastoid probe is now carefully passed into the aditus to ascertain if this passage is free; and to prevent bone chips from entering the attic by this route, the antrum is carefully plugged with a mop of damp cotton.

It will now be observed that a part of the posterior wall of the bony meatus in the shape of a ridge still requires removal. For this purpose Heath uses a specially designed, long jawed, biting forceps, supplemented by a V shaped gouge. However, all of this may be done, though with less safety, by the gouge. The V shape of this gouge prevents it from slipping off on either side of the ridge. By the removal of this ridge of bone the meatus, and the new bony opening behind it, are thrown into one large meatuslike cavity and the ridge is cut down to within one fourth inch of the drum. The distance to the drum is usually ascertained by the use of the probe, the drum itself being felt if present, or, if gone, then the annulus tympanicus is the landmark.

If there is a marked elevation of the arched floor of the bony meatus, this is removed by means of a very narrow gouge; because, if this ridge is left, it interferes with tympanic drainage. During this stage of the operation Heath's drum shield is introduced to prevent the gouge from injuring the drum.

Thus the operation is completed as far as the removal of bone is concerned.

It will now be seen that the bony meatus, the excavated mastoid, and the antrum form parts of one and the same cavity.

It has been pointed out that an essential step in the operation is the examination of the drumhead and tympanum, and the washing out of the latter.

In order to obtain a view of the drumhead it is necessary to prepare the meatal cartilaginous flap. To do this the auricle is replaced to nearly its natural position and a special bent two edged knife is passed into the meatus and made to perforate the cartilaginous tube from the inside in its superior aspect external to the temporal fascia. It is then extended outward and downward with the knife

to near the outer end of the cartilaginous meatus. With blunt scissors this opening is extended inward toward the drum to the broken internal end of the meatus. This flap, being attached anteriorly and released by this incision in its posterior superior aspect, will lie upon the new floor of the bony meatus. Care must be taken that this flap is not too long. If found extending into the antrum, it must be trimmed off. It is better to have a flap too short than too long. It must cover the floor of the meatus to receive the discharges while healing takes place. The flap is now temporarily removed from the meatus and held outside by means of Heath's meatal flap retractor. The drumhead will now be exposed to full view.

SECOND STAGE IN THE OPERATION.

The drum is examined by inspection and by the use of the probe. Any polypi outside the membranous should be removed.

To ascertain the condition of the tympanum and to clean it out, Heath's specially designed aditus cannula is used. This cannula (rubber tipped to make it fit the aditus airtight) is passed through the antrum into the aditus and a blast of air is blown through, while the drum is watched to determine the presence of perforations, adhesions, etc. Polypi and cholesteatomatous masses are thus sometimes blown through and can then be removed. Heath often succeeded in removing cholesteatomatous masses in this way that would have escaped notice entirely, except for this means of clearing the invisible attic. After the air, boiled water, saturated with boric acid, is forced through. Cholesteatoma is sometimes shown by the presence of fine light colored particles in the water as it comes through the perforated drum. If no perforation exists, there will be evident distention of the drum unless it is adherent to the internal tympanic wall. If air or water does not come through the perforation in the drum, there is an attic dam which is impassable. The aditus is examined with the probe but on account of risk of dislocating the incus, Heath is very chary about passing a probe forcibly into the tympanum through the attic. He prefers to wait for Nature to remove the obstruction (swollen mucous membrane) after the irritating discharge from the antrum has been arrested.

This procedure accomplished, it is time to enlarge the external orifice of the cartilaginous meatus. A knife is introduced into the meatus and a cut made backward and upward through the crus of the helix, and carried far enough to allow the forefinger to be passed into the meatus through the opening. This opening will admit a half inch rubber tube whose purpose is partly for drainage, but also for keeping the meatus enlarged for future inspection, and dressing of the deeper parts. Good drainage which, it will be remembered, is the third essential of the Heath operation, is thus insured.

DRESSING AND SEWING UP THE WOUND.

Tiny fresh cotton mops are now placed, one in the antrum, and one in the meatus, against the drum. They are not as large as a pea.

The pericranial and meatal flaps are released from their clips. The pericranial flap is dropped into the bony mastoid wound, and the meatal flap is placed upon it. With one catgut suture the surface

of the pericranial flap is stitched to the fleshy side of the meatal flap. Heath uses great care not to let the suture perforate the cartilage of the meatal flap for fear of inducing perichondritis.

The rubber tube previously spoken of is now introduced; though partly for drainage purposes another of its important functions is to keep the meatus large enough for examination and treatment of the whole cavity while healing takes place. Such a tube, or some substitute for it, must be used in every case. It must be large enough to fill the meatus, and to exert gentle pressure all round. It must also be long enough to reach from the bridge to a point within the tragus, under which it is expected to rest.

The cutting of the tube is important. The outer end is cut off obliquely, the inner end square. Opposite sides of the inner end are cut out to a distance of about half the length of the tube, so that the pressure on the inner parts of the meatus may be thereby modified. The shorter side of the outer end is placed behind the tragus, so that the tube cannot slip out. The average tube is about one inch long and one half inch in diameter. All edges are nicely rounded off with scissors.

Great care must be taken to insure that the tube makes gentle pressure only. At the same time it must be so placed behind the tragus that it cannot slip out. If it should slip out, especially after the first dressing, much contraction will take place within the meatus which will be very hard to overcome later, consequently future dressings will be difficult.

The auricle is now placed in its original position and nine stitches are taken. The first is placed flush with the beginning of the original incision, and the second is flush with the end of this incision. This will prevent puckering. The third stitch is in the middle of the incision. Finally three stitches are placed above and three below the middle stitch, making up the nine. Black silkworm gut is used, as it is easy to see during removal.

A simple moist dressing is now applied behind and over the ear, covered with waterproof, and the head is bandaged.

POSTOPERATIVE TREATMENT.

To avoid stitch marks, all but one stitch are removed in eighteen or twenty hours. The middle stitch only is usually left till the second dressing. Because of the location of the incision in the angle between the ear and scalp, and the early removal of the stitches, marks are not discernible a month after the Heath operation.

At the first dressing the tube is not removed, but is carefully mopped clean. New moist external dressings are applied. From this time on, until all discharges have ceased, dressings are made daily, and the tube is removed and cleaned. Until the discharge is decidedly reduced in quantity moist external dressings, covered by waterproof, are used.

Heath occasionally irrigates with the cannula for a day or two in purely chronic cases.

The dressings are never painful if properly done and cocaine is used.

The drainage is so well provided for that it is rare to get a rise of temperature above 99.2° F., in spite of the fact that every suppurating ear is in

a septic condition. In some cases there is no increase of temperature at all.

PRECAUTIONS IN REGARD TO THE TUBE.

As healing takes place it will be necessary from time to time as the meatal orifice contracts to reduce the size of these tubes, both as to their diameter and their length. This obviously means changing the large tube for a smaller one. Tube pressure must ever be moderate. Too much pressure causes pain; it may likewise cause sepsis, yet if the tube be too small it allows too rapid contraction of the meatus and loss of view. If after an operation there is pain or fever, it is practically always due to some defect in the drainage of the soft parts. It is well, however, to look after the tube. Some patients tolerate greater pressure than others. A large variety of tubes from which to select must be on hand. To get the tube just the right length will not be found difficult, for if it presses too hard behind the tragus, it can easily be shortened at its outer end.

Occasionally patients do not tolerate the tube, either on account of pain or sepsis, and a good substitute for it can be provided by firmly rolling some seven eighths inch ribbon gauze upon a Heath's wool holder till it is of the proper size, and looks like a tiny bandage on the end of the instrument. This, while on the wool holder, is introduced instead of the tube. Drainage is then carried on by percolation through the gauze, and by regulating the size of the roll, the pressure may be suitably modified. This gauze roll is changed daily and return made to the tube as soon as appears possible.

Another procedure he adopts is to wrap a layer or two of gauze around a small tube in such a way that it will intervene between the rubber and the tissues. This prevents septic absorption.

In a very septic case, especially where a large amount of the mastoid process has required removal, Heath inserts a small strip of gauze or gutta percha tissue in the lower angle of the wound behind the ear to act as an extra drain for two or three days.

In septic cases hot fomentations are used instead of the ordinary wet dressing until the wound has become more healthy.

Heath tells his patients to try and blow through their ears occasionally after the operation, to see if Nature has removed the anterior tympanic dam above referred to. They can usually do this in four or five days, showing that the dam has been removed.

In these daily after treatments two main objects are constantly in view, and unless these objects are kept in view at every dressing, the operation may not prove a success; first, to stimulate granulations in the parts desirable to fill up and close; and, second, which is the more important, to retard granulations in the parts desirable to keep open. In other words, keep the meatus large and open to the drumhead, and close the antrum.

Three stock solutions are always on hand to accomplish these purposes.

1. Alcohol for cleansing, and to retard granulations.
2. A ten grain to the ounce solution of zinc sulphate, to retard granulations.
3. Iodoform in glycerin to stimulate granulations.

Two cotton wool plugs are always used, and changed daily; one for the antrum, and one for the meatus. The antral plug is always saturated with the iodoform mixture, and is barely large enough to fill the cavity. The meatal plug is sometimes saturated with the zinc solution, sometimes with alcohol, and sometimes with the iodoform. All depends on whether it is desirable to stimulate granulations in the meatus or to retard them, always remembering the necessity of keeping the meatus open and the drum in full view. Iodoform emulsion is used to moisten the meatal plug until it is seen that the bridge of bone is covered with granulations; after that, it will be found best, as a rule, to use a solution of zinc sulphate or alcohol for this plug.

For exuberant granulations in any part of the cavity a fifty per cent. solution of silver nitrate is applied by means of a tiny hard cotton mop on an applicator. Before applying this, all excess of the solution in the mop must be wiped off. Naturally, this strong solution of silver nitrate is to be used only when it is desirable completely to destroy some granulations.

In this way the cases are treated daily, for the wound being septic, daily cleansing is essential. No one should attempt the Heath conservative mastoid operation unless he is prepared to give the time, care, and attention necessary for the proper conduct of the case. By Heath's after treatment the surgeon is enabled to mould the cavity to the shape and size which he desires that it shall permanently retain. The advantages of using the instruments he has designed for the various stages of this treatment must be seen to be fully appreciated. Everything is organized and ready; and the painlessness of his method of dressing an ear is remarkable. Heath says to his pupils: "Be sure to assume the mastery of the disease at the operation, and stick to it."

The foregoing article was written after I had assisted Mr. Heath in twenty operations upon the mastoid. The operations were all done exactly as described. The material for the pathological description was obtained from personal instruction by him, and from a lecture given by him at the London Polyclinic.

I observed Mr. Heath do the after treatments in a large number of patients, and the remarks on this subject are based on these observations.

Since returning to my practice, I have done a few operations, and followed out the after treatments according to the Heath method, and the results have been entirely satisfactory.

2037 FRANKLIN AVENUE.

A SKETCH OF THE CANCER QUESTION TO DATE.

By E. E. HUBBARD, M. D., C. M.,
Kansas City, Mo.

In reading the works of many writers we may all notice the general acknowledgment of inability to make early diagnosis of cancer. It occurred to me, mainly for the sake of the individual benefit to be derived, to inform myself anew on the subject of cancer in general, and on the matter of diagnosis in particular.

From all nations and climes there come reports that cancer is alarmingly on the increase. Pathologists and clinicians are ever on the *qui vive* for the cause of cancer, and there will be no advancement with the matter until we have established the cause. A birdseye view of the subject will perhaps be a general help as a means of getting the trend of modern thought.

There are two ideas of the origin or cause of cancer; one of which might be called the intrinsic, and the other the extrinsic cause. Of the intrinsic causes the old "embryonic cell rest" theory of Cohnheim, and those of Ribert and Beard, and others are samples.

Cohnheim advocates the theory that during embryonic development, cells become misplaced, and remain dormant until late in life, when by some influence they are stimulated to growth, take on a new character, and because of their unlikeliness to their surroundings become real invaders.

Ribert conjectured that the reason these dormant cells or "rests" spring into action is because of the removal of external resistance. Beard discovered that trophoblastic cells began to degenerate and disappear about the seventh week of fetal life, and that at this time the fetal pancreas begins its function. He concluded, therefore, that the pancreatic secretion destroyed the trophoblastic cells, which he decided to be the individuals entering into the formation of cancer growths. He advocates the injection of trypsin and amylopsin into the system as a means of destroying cancer growth, but it has not been a great success. Others have suggested that normal, actively dividing cells might be stimulated to mere vegetative growth and cease to perform function, thus becoming lawless invaders, producing toxins, thereby becoming malignant growths, weakening neighboring cells by means of the toxins and the pressure they produce; thus making unrestrained growth possible. This is the beginning of the extrinsic theory.

There may be said to be two extrinsic causes, mechanical irritation and parasitic invasion or irritation. A chemical cause has been advanced. The mechanical irritation theory is not a small item when looked at in general.

In the *Annals of Surgery*, Coley has lately detailed 1,200 instances of carcinoma and sarcoma, developing soon after injuries of many kinds, even in surgical scars. The old story of cancer of the lip from smoking a clay pipe is a favorite example. A cancer develops under a tooth plate. The mammary gland, being the part of the body most exposed to trauma of many kinds, is a favorite site of cancer.

I might repeat many more examples, but I will desist. We can easily see that these traumata may only be the means of entrance of the parasite, the trauma weakening tissue resistance to the extent of furnishing pabulum for the existence of a guest. By taking a wide view of the history of cancer, we may get a rational view of some of the arguments in favor of the parasitic theory. We get histories of cancer being transmitted by kissing; cancer of one labium majus transmitted to its neighbor by contact; cancer in the scar in the abdominal wall from abdominal removal of uterus, with a cancerous cervix. Cancer from patient to nurse; cancer districts where

several cancer deaths have occurred in one house, or in a given street or section of a town in a low lying district, whereas, in the high lying districts of the same place not one case of cancer was known.

In San Francisco the death rate from cancer increased seven times in thirty-two years; in Boston three times in twenty-four years; in New York twice in eleven years; in Germany almost seven times since 1879. It seems to be becoming more virulent, as it attacks at an earlier age and attacks more men.

It would seem that men become more susceptible by virtue of a change of habits from active life to a less active life, as many are flocking to the cities, and Nature does not make an invariable success of the involution process in the case of a robust physique without cancer or tuberculosis getting in at the windup. Perhaps the transplantation of cancer has not been practised enough to be able to determine whether or not virulence may be increased by transmission.

Heredity seems to have a bearing, as there are frequent histories of cancer among relations, even up to twenty per cent. in some cases.

The fact of possibility of transplanting tumors from one animal to another of the same species is ancient history; and the fact has been discovered that spontaneous recovery from these transplanted tumors frequently takes place and is very significant. These animals are then found to be immune and their blood becomes an immunizing agent in other animals.

It has long been known that practically all animal life is subject to cancer, that epidemics of cancer are seen among animals. Cancer may be propagated among fish by placing healthy fish in pools where others have had the affection. Endemic cancer among cattle has been noted. Rats have been infected with sarcoma by being placed in cages where infected rats have been previously kept. It has long been known that the duodenum has remarkable immunity to cancer, yet its structure does not differ materially from that of the stomach, where fifty per cent. of all cancers make their appearance. Let me repeat that irritation as a cause of cancer has pretty good standing, and it is illustrated in the stomach, in ulcers, scars, etc., to a satisfactory degree, by the fact that Mayo's estimate is that fifty per cent. of cancers of the stomach are engrafted on the scar of an old ulcer. Moynihan says, that seventy-two per cent. of his observations of cancer of the stomach are preceded by an ulcer.

Mayo says that duodenal ulcer is more frequent than gastric ulcer by sixty to forty per cent., and yet cancer of the duodenum is almost a curiosity. Rolliston finding only forty-one cases in the literature. Gastric ulcer will often progress to the pyloric ring and stop short.

What is the prolific cause of cancer in the stomach? Why does it not hold good in the duodenum where there are twenty per cent. more ulcers than in the stomach? If we can answer these questions we may have gained a point.

Either ulcer is not a forerunner of cancer of the stomach, or the duodenum is protected, or is lacking in the essentials to the formation of cancer. The structures of the two are not very dissimilar.

and cell rests have not been discovered to predominate in the stomach. Possibly parasitic existence is more easily maintained in the stomach than in the duodenum, or perhaps parasitic life is so abundant in uncooked ingesta that the stomach fails to digest everything, and occasionally a habitat is established at a vulnerable point. It would seem that the great proportion are successfully handled, because the canal below this point is almost sterile, until the ileocecal region is reached.

Cancer of the alimentary canal predominates; according to the United States census of 1900, two thirds of all cancers are found in this tract. This seems to suggest that infection enters the canal with food and penetrates the epithelium through abrasions or lesions. Herter shows that digestive and putrefactive disturbances make their appearance in late life, producing acute disturbances. The epithelium of advanced life could be supposed to be less active, and less resistant, and the secretions diminished and possessed of a modified activity, all suggested by a delicate digestion and a capricious appetite, suggesting what we know to be a fact, that cancer is a disease of the old. It is perhaps a fact that the stomach is assisted in its work of parasitic destruction by the secretions of the liver and pancreas, it being known that pancreatic ferments are destructive to malignant growth in certain cases. This may explain why cancer so seldom invades the duodenum and upper intestinal tract.

We have learned that tuberculous infection enters the alimentary canal with the ingesta, and we find eighty-five per cent. of tuberculous lesions of the tract located in the ileocecal region where bacteria are most numerous. Primary cancer is more frequently found in the colon, perhaps by reason of the light traumata it continually suffers from the hardened feces, and the lack of pancreatic secretion.

A suggestion of infection in the ingesta is found in the numerical frequency of cancer in the different parts of the canal.

In Prussian hospitals, in 1895-6, of 20,544 cases of cancer, 10,537 were in the alimentary tract as follows:

Tongue	269	times
Mouth and throat	192	"
Esophagus	1,011	"
Stomach	4,238	"
Small intestines	20	"
Large intestines	224	"
Rectum	1,204	"

The small number of involvements of the small intestines as compared with both upper and lower ends of the tube is suggestive. The parasitic cause seems to be suggested again by many cancer patients giving a positive Wassermann reaction. Caan got a positive Wassermann in forty-one per cent. of eighty-five cases. Attempts are being made to develop a serum or vaccine therapy for cancer, but progress is slow.

Work done in the Massachusetts General Hospital, under direction of the Cancer Commission of Harvard University, where body fluids were used as serums or vaccines, have proved of no avail.

They used exudates, transudates, etc., as normal blood serum, hydrocele fluid, spermatocele fluid, ascitic fluid from an alcoholic cirrhosis, and from

a case of incompetent heart, and pleuritic transudates, etc. In view of the implied fact, which we get between the lines in the foregoing, that cancer in its early stages is a local condition, it stands us in hand to perfect ourselves in the art of making an early diagnosis and applying early treatment by excision when it can be reached.

I will enumerate some of the accepted points in making early diagnoses. In considering cancer of the breast, it is hardly necessary to be careful to make exact diagnosis, because of the fact that all know that any persistent enlargement in, or tumefaction of the breast is suspicious by its very presence; for if we know at the beginning that it is not cancer, we also know that it will be one in a very short time, in all probability, so the only safeguard is early removal. This I consider very easy, absolutely straightforward, and a perfectly safe conclusion, and in entire accord with pathological facts. I might say further, do not try to remove a part of a mammary gland, but remove all of it, thus not leaving behind infected tissue, and take no chance of smearing the wound from the cut surface of an incised gland.

The diagnosis of cancer of the digestive tube is by no means easy. The chemical examination of gastric contents is still a part of the diagnostic armamentarium. Neubauer and Fischer's glycylo-tryptophan test has seemed to be desirable, and ought to be put to a more thorough use. Oppenheimer gives us a test with acetic acid, which is very simple and short, and will probably be useful. Saloman has devised what may be called the sulphur test, which seems to give promise of usefulness. Fuhs and Lintz have advanced a methylene blue test for cancer that would be ideal on account of its simplicity and ability to detect cancer early in any location of the body regardless of the magnitude of the growth. These must all be tried side by side in many cases, and a general average arrived at.

The absence of hydrochloric acid, the presence of lactic acid, and the finding of the Boas-Oppler bacillus need only to be mentioned as worthless unless all other findings agree.

In cancer of the internal organs there are no early clinical symptoms that are reliable; the best we can do is to explore early and operate according to findings, because we know that when clinical symptoms are at hand the golden opportunity is lost, and patients operated upon at this time live only a year or so afterward as a rule.

The mission of this paper is only to rehearse the theories of the cause and urge an early diagnosis. In thinking in this direction I am hopeful of having hit upon a new point of evidence, which I have no facilities for working out. We know in general terms that we find eosinophile cells in the blood of patients infected by animal parasites. Is eosinophilia invariably present in all cases of animal parasitic infection? I should like to interest every man engaged in work of pathology, bacteriology, and clinical blood work in observing the question of eosinophilia in amebic dysentery, tape worm, pin worm, round worm, screw worm, trichomonas intestinalis, trypanosomiasis, echinococcus, malaria, syphilis, pregnant women after the fifth month, and cancer.

I have looked over the histories of more than a year's work at the General Hospital of Kansas City, Missouri, and find eosinophilia recorded in every case of cancer where a differential count was made. Is eosinophilia present in any cases other than cases of parasitic infection? Would not an invariable eosinophilia in all parasitic infections and cancer be good evidence? Should we not have the question cornered down to merely finding the parasite?

This suggests the well known fact that in bronchial asthma and leprosy there is found an eosinophilia of varying degree. In bronchial asthma the percentage runs well up to ninety in some cases, and in leprosy it is also high. If we could prove that bronchial asthma is always produced by the presence of a *vegetable* parasite, or even by *mechanical* means only, we could still easily believe that the amount of impediment and clogging taking place by reason of the lack of oxygenation might easily almost swamp the organism with animal waste, producing leucomaine poisoning identical in effect with that of any of the others.

I am really courageous enough to believe this argument will hold water, and that practically the same theory can be applied to leprosy.

I am hardly willing to believe that all of Caan's forty-one per cent. of positive Wassermann reactions were syphilitics in addition to having cancer; but that the cancer parasite gives a positive Wassermann by virtue of its animal kinship to the spirochetes.

Would it not be interesting to know whether or not a positive Wassermann reaction could be obtained in all, or in a majority of animal parasitic infections? In several of the chemical tests for cancer, pregnant women in latter months almost invariably give a positive reaction, making it appear that the fetus gives off secretions or leucomaines as other parasites do.

In closing, remember that the only thing that gives surgery a bad name is delay; because surgery cannot replace, or regenerate destroyed or diseased tissue. The only hope is in removing the focus while it is *merely* a focus.

808 WALDHEIM BUILDING.

TEN SEX TALKS TO GIRLS.*

By IRVING DAVID STEINHARDT, M. D.,
New York.

III.

In this talk we are going to discuss bad habits in the female sex, habits which if present in any of you, are best corrected. Let us speak briefly of constipation again, although we have already discussed it in our last talk. I told you that if the rectum was filled up with food debris, it would require more room than is normally allotted to it in the pelvis, and, therefore, as in the case of the distended bladder, it would make room for itself at

the expense of the womb, causing a displacement of that organ to either side, or forward. Again, this accumulation of fecal matter causes a distention of the rectum, which, if it becomes chronic, causes unpleasant rectal troubles even to the extreme one of loss of rectal control. The pressure of this fecal matter on the veins of the rectal mucous membrane impedes the return of the blood toward the heart and the resulting dilatation of the veins causes the formation of hemorrhoids, or, as you know them—piles. The invasion of the fecal mass by the germs or bacteria which cause fermentation gives rise to the formation of foul gases, which not only assist in the distention of the bowels, but on being absorbed into the blood, are carried to all parts of the body, poisoning the entire system, thereby weakening the normal bodily resistance and vitality and causing many sick headaches, vague pains, upset stomach, painful menstruation, bad breath, and other unpleasant things. Also these poisons circulating in the blood destroy the blood corpuscles themselves, and bring about an anemia in this way. The blood corpuscles which are not destroyed are weakened in their capacity as carriers of body nourishment to the various parts of the body, and therefore in this way also is the vitality of the body lowered, viz., through lack of proper nourishment.

You can see from all that has been said about constipation that it is somewhat of a bad thing to be troubled with. You can avoid it and should avoid it, not by the constant taking of medicine, but by the formation of a proper habit at a definite time daily, by the proper exercises tending to strengthen the abdominal and intestinal muscles, by the eating of proper food at regular intervals, by the eating of fruits both cooked and raw, by the drinking of plenty of water, mostly between meals, and by a general building up of a run down body.

Now a few more words about the undue retention of the urine. We have already spoken about the effect it has on the womb and the possible effect of having the bladder become gradually chronically distended. This distention may cause an acute paralysis of the bladder, requiring the urine to be drained off artificially, an unpleasant and somewhat serious procedure. The urine remaining in the bladder an undue length of time favors stone formation, as it allows solid substances to form from the various constituents of the urine. Also, when the urine contains, under certain circumstances, an irritating substance, the lack of tone in the bladder muscles permits it to remain there longer than it should, and inflammation of the mucous membrane of the bladder results and prompt treatment by the physician is necessary to avoid very serious results. Do not think I am trying to scare you with anything that I have already said in my talks to you or with anything that I am going to say. I am simply trying to give you frank, unvarnished truths in simple language that you can understand, for your guidance in the present and future.

Cleanliness is the next topic and a very important one. It is practically conceded that the male sex is more cleanly than the female, probably not through any more love of being clean, but be-

*Delivered by invitation before the Florence Memorial Aid Society of the Hebrew Educational Institute of Brooklyn, N. Y., the "Evergreens" of the Emanu-El Brotherhood of New York, and elsewhere.

The author is willing that anyone desiring to give talks of this kind use all or any part of these that may be desired. In giving these talks, the author always encourages the asking of questions at the end of each. In this way anything said during the talk which was not clear to the audience is explained more fully.

cause most every boy likes to go swimming, and because of this, he acquires habits of cleanliness. You have all heard no doubt of the old joke about the girl who was getting ready to go to a party and who asked her mother, "Mother, shall I wash for a high or low neck?" Personal observation has caused me to come to the conclusion that there is a great deal of truth in some jokes and that this particular joke belongs in that class. Body cleanliness is an asset toward good health and a very great essential in the immediate vicinity of the genital organs, including the breasts. Dirt or the residue of perspiration allowed to collect around the nipples, is liable to cause either an internal or an external inflammation, leading to abscess formation. The same kind of an accumulation in the fold beneath the breasts is liable to have the same result. Below, in the region of the external genitals, the same kind of accumulation may be added to by the residue of dried urine and possible discharges from within. Lack of cleanliness here means chafing, itching, bad odor, possible infection within and without, with possible abscess formation. Where there is no leucorrhea, or "whites," as many of you call this discharge or have heard it so called, one will be started if any of this debris is carried within—and leucorrhea is a very disagreeable trouble, as many of you already know. To forestall your later question I will say here that it can be cured, but why not avoid having it? If it is not acquired you do not have to go to the expense and trouble of having it cured. Even during the menstrual period "cleanliness is next to Godliness," the popular idea to the contrary notwithstanding.

In a later talk I will have something to say regarding dress. The evil of corset wearing has already been mentioned in a general way so far as tight lacing goes. That is not the only bad point, however, that corset wearing has. Suppose we spend a little time discussing this. Corsets, by their shape and by the fact that they can be worn abnormally tight, retard the muscular development of the back, thereby tending to produce round back, rotary lateral curvature, weak back, the latter oftentimes accompanied by great pain and discomfort. The proper development of the abdominal muscles is interfered with, thereby favoring constipation, navel rupture later in life, increased duration of the time of childbirth, and the lack of tone in these same abdominal muscles favors lack of support for the abdominal contents. With the tight fitting and still more tightly laced corset you have the abdomen and its contents pushed out of place, distorted in shape, and constricted in volume. There is such a thing as a half way sensible corset, but rarely if ever is it seen in use. I repeat, however, what I said before, that the wearing of a corset is unnecessary, foolish, and against the best laws of health, and therefore against your happiness. The wearing of anything tight in the dress line around the waist or chest is bad. Remember the ancient women who were renowned for their face and figure, the beauty of which has been handed down through centuries, and then recall their dresses of loose, flowing style and also that they wore loose, broad sandals instead of ill fitting, high heeled, narrow, pointed shoes several sizes too small for them.

My talks were not intended to be dress reform talks, so I only mention a few articles of your apparel which are in every day use by you, and which are really detrimental to your health. Later on, I shall probably have to mention some other things when I speak of immodesty, unintentional perhaps, but immodesty nevertheless. The next bad habit I will speak of is one which unfortunately is prevalent in both sexes and is harmful alike to both. When practised alone in the female it is harmful enough, but when practised between females it is still more harmful and should be most vigorously fought against. You note I make a difference between the practise of masturbation, alone, and with another. Does it seem strange to you? Here is my reason. If occasional self masturbation will keep a girl from indulging in illegitimate sexual relations it is preferable that she restrain herself from evil companionship even in this unnatural and undesirable way, but when it comes to be practised between girls, or by opposite sexes, it is inexcusable and reprehensible. However, when I tell you right here as emphatically as I can, that the sexual relation, even though a normal, physiological function, is absolutely unnecessary to the health and well being of either sex, you can readily see that neither illegitimate sexual relations nor masturbation need be indulged in. Many girls who feel the need of sexual gratification are suffering from certain conditions around the genital organs which, if removed by their physician, would do away with what is in many cases a false desire. Masturbation is, as you no doubt know, the arousing of the sexual desire and the satisfying of it in other than the usual way as laid down by the laws of Nature. If indulged in to excess it will cause you to end your days in the madhouse or send you to an early grave. Excess of the normal sexual act will do likewise. If any of those present to-night are guilty of indulging in this pernicious habit, I advise them to stop it at once for their own good in the present and future. If their own will power is too weak to have them do this without moral and medical support, I advise them to consult their family physician at once. Take him into your confidence and if he is worthy of the name, he will help you. In talking about masturbation indulged in with others I will devote my time to that practised between girls. I would want to say, however, enough to avoid having you drift into one of these entanglements without really knowing what you are doing until you are actually involved. Avoid girls who are too affectionate in their manner of talking and acting with you; who are inclined to admire your figure and breast development; who are inclined to be just a little too familiar in their actions toward you; who press upon you too earnestly invitations to remain at their homes all night, and to occupy the same bed that they do. When sleeping in the same bed with another woman, avoid "smuggling up" close together. Avoid the touching of sexual parts, including the breasts, and in fact I might say, avoid contact of any parts of the body at all. Keep your night robe around you and let your conversation be of other topics than sexuality. If possible, avoid sleeping together. It is more healthful and sanitary to sleep in separate beds. The harm of

masturbation is that first it is an unnatural way of satisfying the sexual appetite when aroused; second, you are liable to overindulgence, which is extremely harmful both mentally and physically; you will recall that I have already told you that overindulgence in even the normal sexual habit is harmful. Third, it is enervating and causes secretive habits, and when one practises deceit in any one way, it paves the way for other deceitful ways. It lessens one's sense of honor. Fourth, it brings about a chronic productive inflammation in all the sexual system, which leads to serious consequences. Fifth, in some it causes a loss of the normal sexual appetite, which is not desirable for the future of yourself or the race in general. These are only a few of the reasons why I have spoken on this subject at all. There are many others, but I will content myself with these.

310 WEST NINETY-NINTH STREET.

TUBERCULOUS MENINGITIS.

The History of a Case.

BY H. RABINOWITSCH, M. D.,
New York.

The case I am going to report here, properly speaking, does not present any special abnormalities and uncommon phenomena in its course; on the contrary, it is rather a characteristic one, more or less typical in its course, with all the different stages, which are usually common to the majority of the cases. And yet the nature of the disease in this case has been overlooked, even denied and "absolutely excluded" by a number of good men in the profession at a time, when the disease had advanced already to the beginning of the so called second period, a fact which, however, we must regret, but which finds its explanation in the fact, that cases like this in private practice very seldom remain under the observation of the same physician from the beginning of the initial stage to the end. Of late they are very rarely reported in medical periodical literature, so that certain features of its clinical picture, especially of the initial stage, escape the practitioner's memory, as the history of this case shows.

CASE. On October 18, 1911, I was called to see a patient in Brooklyn. Gracy B. female, sixteen months old, first child, had been delivered by application of high forceps. The father enjoyed good health and so did his family. The mother suffered from polyarthritis rheumatica, hypertrophied tonsils, adenoid vegetations, and hyperacidity of the stomach, otherwise she was normal and from a healthy family. The baby had been nursed by her mother's milk for about eight months, then by the bottle on account of the mother's absence for some time. In June, 1911, she had pneumonia migrans, from which she recovered in about three weeks, otherwise she was never sick (except for some slight gastritis); no measles, no whooping cough. Now she was coughing; the temperature was 102° F., the pulse was normal, and a physical examination showed slight bronchitis, otherwise everything was normal; I ordered an expectorant and the baby recovered in a few days.

October 23d I was called to see her again. She was a little restless, often crying, putting her fingers in her mouth. The temperature was 102° F. (according to her parents she had been for the last few days all the time more or less feverish) and the examination showed a stomatitis, whitish on the buccal and inferior labial mu-

cous areas, fumes and the tongue. An antiseptic application was ordered.

October 28th, when I came to see her again, the temperature was about the same. Although the stomatitis had healed, the baby continued to be restless more than before, nearly *constantly* crying (*not* the characteristic, hydrocephalic cry) putting all the time her hand to the right temporal region which made the parents think of some ear trouble. She had vomited several times. My examination of the ear and mastoid region did not confirm that suspicion. On inspection, the baby looked emaciated and gave the impression of suffering from severe pains. The head was freely movable, the pupils normal, with no brain symptoms whatever; nevertheless, I suspected tuberculous meningitis. The long, slow course of the disease with comparatively moderate temperature, the constant restlessness of the baby, the putting her hand to the head (right temporal region), and the emaciation were the main reasons upon which my diagnosis was based and I told the parents I wanted another reputable physician for consultation.

October 29th, Doctor G., of Manhattan, was summoned and after examining the baby and finding everything normal he agreed with the opinion of the parents. His diagnosis was abscess of the middle ear, and he ordered accordingly with the direction to have the abscess opened by an otologist in case it did not open by itself within two days. There were already some vasomotor disturbances, especially on the baby's cheeks and forehead, with, occasionally, clouded consciousness and irregular pulse. My diagnosis of tuberculous meningitis he, nevertheless, excluded absolutely, for the reason, that there would have been more symptoms during this time (!) and so I was left all alone. The next morning the father telephoned to me that the baby felt very bad the previous evening and the whole night, so that he had had an ear specialist for the baby early in the morning, who said, "there is *some* inflammation in the ear, but I do not think this could be the cause of the patient's serious condition." After a thorough examination he found (?) the patient's *liver twice the normal size* and made a diagnosis of some liver trouble and so I again remained all alone with my diagnosis. This ear finding did not satisfy me, it seemed to me uncertain and I wanted more definite information; nor could I agree with the alleged enlargement of the liver, which I found to be of normal size, just coincident with the ends of the ribs! In the evening, Doctor S., a reputable Brooklyn otologist, was summoned, and examined the patient's ears in my presence and found them in perfect condition; a further examination showed everything normal including the liver and he was the first one to fully agree with me in the diagnosis of tuberculous meningitis. Now, on my suggestion, a lumbar puncture was made and the fluid was sent to the Brooklyn Jewish Hospital for examination. October 31st a Brooklyn neurologist of high authority was called for consultation, and confirmed my diagnosis. Late in the night I received by telephone the report from the Brooklyn Jewish Hospital as *positive* and the next morning, November 1st, the usual treatment began. On Saturday, November 4th, about 4 a. m., the exitus letalis occurred (the ante mortem temperature was 110° F.) as the result of the brain symptoms, the patient having had for only about three days the proper treatment.

I did not describe the details of this last period in the present case, because it was not at all the purpose of these lines to give a description of tuberculous meningitis. What I desire is to call the attention of my colleagues (especially the young practitioners, whose practical experience is limited to the cases they saw in the hospital while studying, which are usually in the advanced stages) to the *initial stage* of tuberculous meningitis, especially in infants, the importance of which the history of this case demonstrates, the symptoms in infants being mostly indefinite. Keep, therefore, always in mind, when you see a baby who is sickly for a more or less protracted time with a fever comparatively low (100°

to 102° F.), that is restless, crying all the time, putting the hand to the head (no matter what region), is emaciated, and in whom you find, on thorough examination, everything normal (you must be sure)—then think of tuberculous meningitis and do not lose time! I would not assert that you will save them, as to our sorrow we have no reports of sure recoveries, but you will be then able to do for your patient all there is to do according to our present knowledge.

1651 WASHINGTON AVENUE, BRONX.

ANTIVACCINATION AND THE MEDICAL PROFESSION.

BY ISAAC W. BREWER, M. D.,
Fort Niagara, N. Y.

Most persons are desirous of avoiding the infectious diseases, especially smallpox, and yet after one hundred and fourteen years of the successful demonstration that vaccination will confer immunity from smallpox, we find a large and growing community who not only refuse to accept the immunity offered gratuitously by the government, but actively oppose any attempt to confer this immunity upon others. It is difficult to understand this, and yet there must be some good reason for it, and if we are to overcome this prejudice we must first try to remove its cause.

That the number of cases of smallpox among our people is increasing is proved by the reports of the Public Health and Marine Hospital Service, (2) which show that during the year 1910 there were 30,352 cases reported in the United States, that number being three times as many as during the previous year.

It is difficult to determine just what proportion of our people are protected from this disease, but it is doubted if half of them have been successfully vaccinated. Besides those who are actively opposed to vaccination, there are many who through carelessness fail to have their children immunized.

Whenever the agitation against vaccination becomes acute it is customary to cite statistics showing the value of the procedure, and its comparative safety. In other words the medical profession puts itself on the defensive, and not a few of our members use harsh strictures against those who oppose us in this matter. This does not seem to be the proper attitude to take.

That vaccination will protect is a well established fact, and has been proved over and over again; the latest confirmation being the statistics from the Philippines and Porto Rico, where the disease has been practically eradicated in the space of twelve years.

Rather than continue the citation of statistics and the castigation of our opponents, it would seem wiser to examine ourselves from their standpoint lest by some act of commission or of omission we create this opposition to vaccination.

Some of the points urged against vaccination are:

1. It does not protect against smallpox.
2. It is liable to introduce the germs of disease into the body.
3. It causes "blood poisoning."

1. It is not necessary to consider this objection for if the statistics from all portions of the globe will not convince, neither will any argument we can here adduce.

2. This objection is based upon the accidents that happened when arm to arm vaccination was practised. This is no longer allowed, and the argument would have fallen but for the fact that a few years since it was discovered that some of the vaccine used in one of the States was contaminated with the tetanus bacillus. In another instance it was found that some of the animals used in one of the large laboratories were infected with foot and mouth disease. However, all the vaccine now produced is manufactured either under the supervision of the Federal or the State government and it is all carefully tested for diseases that may be transmitted to human beings, and it is absolutely impossible for such accidents to happen again.

3. This objection is worthy of our careful consideration, for without doubt there are too many infected arms as a result of vaccination. Stumph (1) says that in Bavaria of 15,500 vaccinations there were nine cases of abscess and eight cases of erysipelas. From an examination of the arms of recruits for the army I am of the opinion that infected arms are more common in this country. This is absolutely unnecessary if proper precautions are taken and the patient cooperates with the physician by keeping the arm clean.

Until very recently the *modus operandi* of vaccination was untaught in our medical schools. Students were told that it would protect against smallpox, but were left to learn for themselves how to vaccinate. It is believed that not a few physicians do not know what is meant by a successful vaccination. We daily see persons exhibiting arms with immense scars, which they contend are successful vaccinations, when in reality they are the scars of infected wounds, and have none of the characteristics of a "take." The public seems to think that the sorer the arm the greater the protection.

The frequency of sore arms testifies to the lack of care on the part of the vaccinator or on the part of the patient. The field for vaccination should be prepared with as much care as the field of a major operation. However, this is not always done. Some years since I observed two men vaccinating a large number of recruits for the army. One man, a successful practitioner, had a great many sore arms which he called "takes," while the other, a well trained man from one of the larger colleges, rarely had a sore arm. If the medical profession is to do its duty in the matter of protecting the community from smallpox the sore arm must be eliminated. This can be done by absolute surgical cleanliness, and careful instruction of the patient in the care of the arm after the operation. Our medical colleges should teach the method of vaccination and the State examining boards should require that every candidate for a license present evidence that he or she has successfully vaccinated ten or more persons without accident, before being admitted to the examination.

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1. Quoted in the *British Medical Journal*, May 1, 1910.
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PRENATAL INFLUENCES.

By L. D. McEvoy, M. D.,
New York.

Mercedes D., a Filipina (Bicol), aged twenty-four years, was delivered of a fetus in September, 1901. This fetus had a remarkable deformity which is difficult to describe. The lower part of the face was normal, but from the zygomas, covering what should have been the orbital cavities, a livid roughened skin extended upward over the frontal bone to the anterior fontanelle. There were no eyes visible, though a post mortem examination discovered both orbital cavities and rudimentary eyes beneath the skin.

In the spring of 1901 the woman's husband was shot in the back of the head with a high power rifle at short range. The result was that the brain case was emptied, the whole top of the head being blown off, and the skin covering the frontal bone was turned forward in a flap, covering half of the face and presenting a rather gruesome sight. When the body was brought in, the wife saw it in this condition and fell senseless over it. At this time she was in the first trimester of pregnancy.

This case is cited as one of the most remarkable of a number collected by the writer, who fortunately was present when the woman fainted and who delivered her, but aside from this enough evidence can be adduced from other sources to verify the following deduction regarding gestation.

A woman is an uterus circumscribed by a highly developed nervous plexus, so highly developed and sensitive that slight cause may produce nervous manifestations out of all proportion to that cause. Obviously, impressions may be distorted through faulty transmission, for to a woman with bad accommodation the world has a different aspect than to one with good eyes, but, good or bad, the impressions will be transmitted and act as suggestions in ways from which man is exempt.

This natural receptivity on the part of the woman is exaggerated to a remarkable degree when an ovum is fecundated. At this time every nerve in the woman's complex organism responds to the stimulus of suggestion to such a degree that the physiological and anatomical characteristics of the ovum may be modified, or the distribution of the brain cells altered.

This idea is not new, as for ages the pregnant woman has been guarded from inimical influences. Most people have within their circle of acquaintances an individual bearing so called birth marks which are attributed to prenatal influence of some kind, generally the result of shock.

Careful investigation of a number of cases will show that the popular impression has a basis of fact, and this should be less surprising when it is remembered that the uterus may be emptied by contractions set up by violent mental emotions. Obviously, when falling short of this extreme effect, some alteration in the blood supply to the fetus may occur, and this alteration cause modification to take place. Why, as in the case of the Filipina, it should be localized is not so clear, though the following opinion is submitted.

When an ovum is fecundated it is due to some

chemical affinity analogous to the process of phagocytosis. The fecundated ovum has ultramicroscopic cells corresponding to terminal areas of nerve control, but differing in some essential whereby each cell has an affinity for its proper constituent carried by the mother's blood, enabling cell proliferation to take place with consequent growth. Thus the original cell controlling the area subsequently to be occupied by the heart, would, under normal conditions, never take up the material with which the kidney cell had a chemical affinity or *vice versa*.

The maternal blood, being an exceedingly complex substance, is affected by her emotions, and that affinity normally existing between the fetal cells and the essentials for their proliferation, is destroyed if the emotion is of great intensity. In this case the fetus ceasing to absorb, would act as a foreign body in the uterus, setting up contractions with their attendant consequences.

If the degree of emotional disturbance falls short of this extreme effect, owing to the localization of the mental impressions of the mother, the cells immediately concerned in that impression will be (in the fetus) unable to exercise their normal function, of utilizing that particular substance required for their sustenance, because the affinity between the cell and its nutriment has been destroyed or modified. Hence arises the possibility of localization or localized modification.

It is probable, also, that when gestation reaches a certain period, either because of fetal excretions or a change in the receptive power of the cells in the fetal body, oxytoxic substances are formed, causing the uterus to contract and expel the child. From the foregoing it might be judged that a woman had the power to form her offspring in any manner pleasing to her fancy, but it must be remembered that the influences to which she might respond are beyond her control and must be unconsciously if deeply felt.

Her amenability to suggestion places her in practically the same position as a mirror reflecting its surroundings; therefore a woman reproduces her kind as it impresses or suggests itself to her consciousness, not necessarily as it really is, but as she thinks it is. The result always appears in her offspring, an idiot producing nothing but idiots, or the so called degenerate, reflecting with accuracy her environment and her impressions of her mate.

Woman is to-day, as she has always been, the reflection of her mate and her environment. Any faults she may have must be the result of ancestral brutality and ignorance, modified for the better by feminine habit and custom, and her offspring are true replicas of gestational influences on fetal life transmitted through the terrible potential of her mentality.

It is possible to fix with absolute certainty the mental processes of a mother while she was pregnant, if, after maturity, the child exhibits any deviation from the normal, and it is probable that with careful study, great modification could be obtained in an unborn fetus, by subjecting the mother to proper influences, thereby eliminating the degenerate and the unfit.

508 WEST ONE HUNDRED AND NINETY-FIRST STREET.

Therapeutical Notes.

Treatment of Gastrointestinal Disorders.—M. V. Tyrode, in *Boston Medical and Surgical Journal*, for May 9, 1912, states that patients with organic or functional gastrointestinal disturbances almost invariably show some degree of nervous fatigue and irritability. This is as true of patients who say they are excellent sleepers as of those who sleep badly, the former, on cross examination, often admitting that they feel tired and unrefreshed in the morning. Tyrode, therefore, in most instances gives potassium bromide to secure relaxation, beginning generally with one gramme three times daily, then either increasing or lowering the dose as the symptoms warrant. The drug is always given after meals combined with an alkali, and usually followed by a full glass of milk; gastric intolerance is thus almost always obviated. Skin eruptions are prevented by having the patient drink freely of water, either plain or carbonated.

Where pyloric spasm is present because of ulcers, erosions, or acids, the atropine group of drugs, and alkalies such as magnesium oxide are used:

R Atropinæ sulphatis, 0.0002 gramme;
Sodii bicarbonatis,
Magnesii oxidi ponderosi, ana 0.2 gramme;
Potassii bromidi, 0.5 gramme.

M. Fiat pulvis et dentur doses tales No. 30, ad capsulas amyliacas. Sig.: Take two cachets, each soaked in a tablespoonful of water and follow with a glass of milk, three times daily after meals.

R Extracti belladonnæ, 0.005 gramme;
Magnesii oxidi ponderosi, ana 0.5 gramme.
Sodii citratis, 1.0 gramme.

M. Fiat pulvis et dentur doses tales No. 30, ad capsulas amyliacas. Sig.: Take one cachet soaked in a tablespoonful of water and follow with a glass of milk, three times daily between meals.

Combinations of sodium chloride, bicarbonate, phosphate, and sulphate are used, 1, to cleanse the stomach and upper intestine of mucus and, according to the concentration and time of administration, either to increase or decrease gastrointestinal secretions; 2, to increase peristalsis, and, 3, as injections to cleanse the colon and promote healing of catarrhal processes. For the last mentioned purpose the following is used:

R Sodii chloridi, 10 grammes;
Sodii bicarbonatis, 20 grammes;
Sodii phosphatis exsiccati, 50 grammes;
Sodii sulphatis exsiccati, ad 250 grammes.

M. Sig.: Dissolve one tablespoonful in one quart of warm water and use as rectal injection every morning two hours after breakfast.

Internal Medication, Diet, and Physical Therapy in Psoriasis.—Pinkus, in *Medizinische Klinik* for May 5, 1912, states that arsenic is most effective in slow, torpid cases of psoriasis which already show signs of retrogression of the disease. Arsenic pills are best borne, but do not act very strongly:

R Arseni trioxidi, 0.1—0.25 gramme;
Sodii carbonatis, 1.0 gramme;
Extracti glycyrrhizæ, ana 2.0 grammes.
Glyceriivæ pulvis, 1.0 gramme.

M. ft. pilulæ No. 50. Sig.: One pill three times daily after meals.

Fowler's solution, three to ten drops thrice daily, is likely to prove more effective than the pills. Still more active would be daily subcutaneous injections

of one half to one c. c. of the official sodium arsenate solution, or of the arsenous acid solution with three per cent. of phenol added.

In some cases iodine is of value, given in the form of a five to fifteen per cent. solution of potassium iodide, one tablespoonful three times daily, or as tincture of iodine, from three to six drops.

In well nourished individuals psoriasis is very favorably influenced by the production of a rapid and marked loss of weight. The diet should consist of milk and vegetables only, and both carbohydrates and fats should be restricted. Gouty tendencies, however, frequently present in psoriasis of long standing, contraindicate this form of dietetic treatment.

As for physical measures, ordinary tub baths are useful as adjuncts to the local medicinal treatment. Steam baths act somewhat more favorably. Alkaline baths and various medicated soaps are not of greater value than the last, though painting of the lesions with tar preparations, such as the German tinctura Rusci, before the baths is distinctly more effective.

The x rays act specifically on individual groups of lesions, but lose their effect when too often applied. Long intervals (about six months) between successive courses of treatment are required if the rays are to prove always effective. They are very useful in psoriasis of the face and hands, especially of the nails; in the last named variety very large single doses of the rays are required. A more or less marked inflammatory reaction, with desquamation, induced by the quartz lamp is very beneficial. Even more so, though slower in operation, is direct exposure to the sun's rays, just sufficient to cause gradual tanning of the skin.

Treatment of Progressive Ossifying Myositis.—René Horand, in *Lyon médical* for June 23, 1912, reports a case of this hitherto baffling affection in which Röntgen ray therapy yielded unexpectedly good results. Altogether twenty-two irradiations were given, the dose of rays at each sitting not exceeding five Holzkecht units. Each application caused a heavy discharge of urates in the urine. The patient, a girl of fourteen and one half years, previously considerably crippled by the disease and growing worse, was enabled to stand quite erect, walk about alone, and climb stairs with the agility natural at her age. The benefit is now of eighteen months' standing, and the progress of the disease seems to have been checked.

Treatment of Ruptured Tendon in Finger.—Wilfred Trotter, in *Proceedings of the Royal Society of Medicine*, for April, 1912, refers to the case of a girl, aged seven years, in whom, after she had struck the end of her finger against a wall, there was complete inability to extend the terminal phalanx, together with some thickening over the second phalanx and overextension of the middle joint. Fixation in the straight position having been tried without success, the finger was fixed with the middle joint flexed. In four weeks, complete recovery of the power of extension had occurred. Whenever, in these cases of rupture, there is overextension of the joint between the first and second phalanges, the finger should be dressed with the middle joint strongly flexed.

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DIPHThERIA.

A good many of us will remember the furore with which the serum treatment in diphtheria was received, and undoubtedly von Behring is to be praised for a discovery which has saved many thousands of lives and deprived a terrible disease of much of its terror. Among the few warning voices against the overestimation of serum treatment should not be forgotten that of Virchow, who, although giving due credit to the treatment itself, made the remark that there was a possibility that for some unexplainable reason the severity of diphtheria had been lessened and that perchance in the near future the attacks would become more dangerous; we should therefore suspend judgment about the serum treatment until it had proved its value even in extreme epidemics. The last weeks have brought from Germany two journals in which some articles appeared on the severity of certain diphtheria epidemics. The one we have especially in mind is published in the *Münchener medizinische Wochenschrift* and is written by Dr. Kurt Blühdorn, who records his observations on diphtheria during the winter of 1910-1911 at Berlin. He was able to observe 293 cases with eleven per cent. of mortality. It must be admitted that hospital practice usually offers more severe cases than are to be

found in private practice, but the author was moved to write his article on account of the severe cases observed by him. He remarks that the serum treatment has stood the test in severe cases: Of 151 patients who received the injection on the first or second day of the attack, only four died; complications occurred in forty-three cases which were finally overcome. Thus he states that seventy per cent. of the patients were cured without complications, while thirty per cent. showed complications. Thirty-five cases necessitated tracheotomy and of these twenty were cured while fifteen proved fatal; but all were received in the later stages of the disease. The author also calls attention to the fact that relatively high doses of serum had to be injected. This latter observation concurs with those made in our country, where the average dose is higher than in Germany.

SALVARSAN, THE LIVER, AND THE
KIDNEYS.

In the light of the attempts recently made to develop new fields in therapeutics through the practice of what has now come to be familiarly termed "chemotherapy," it is becoming increasingly necessary to ascertain precisely the influence exerted by the chemical agents used upon the various parenchymatous organs of the body. Especially weighty is this question in the case of remedies which, like salvarsan and mercury, are often administered in doses that may truly be called subtoxic. Morel, Mouriquand, and Policard, in a recent communication to the Société médicale des Hôpitaux de Lyon (*Lyon médical*, June 16, 1912) reported the results of experiments on rats which brought out clearly the relative deleterious effects of salvarsan on the liver and kidneys. Each rat received an intramuscular injection of 0.1 gramme of the drug. One was put to death two hours later, the remainder succumbing to the effects of the salvarsan in about eight hours. Upon histological study, the kidneys presented no lesion whatsoever; the liver, on the other hand, was plainly involved, showing vacuolization of the cells and changes in the nuclear material, which was broken up into fine particles and diffused over a larger area than normally. The presence and amount of arsenic in the liver and kidneys was also sought for chemically. The methods of Gautier and Bertrand were employed and preliminary tests made which proved that not more than 0.001 milligramme of the metalloid could be introduced into the test with the reagents used, and that the test was sensitive to this same amount—0.001 milligramme—of arsenic. In the first rat, the liver showed 0.77 per cent. of arsenic and the

kidney but 0.37 per cent.; while in the second the liver showed one per cent. and the kidney only 0.29 per cent. From these results the authors conclude that in the action of salvarsan a much greater accumulation of arsenic containing substances takes place in the liver than in the kidneys, and that the drug must accordingly have a stronger affinity for the former than for the latter. Nicolas, in the discussion of the paper, averred that clinically salvarsan appears to be less toxic to the kidneys than mercury. While he had seen marked albuminuria follow injections of salvarsan, it had always been of short duration. Indeed, secondary syphilitic nephritis could be made worse by mercury and then cured by salvarsan, as he had had occasion to notice in a case under his observation.

Judging from these experimental results and clinical findings it seems that the danger of injury to the kidneys in administering salvarsan, at least where these organs are sound, is relatively slight. Due caution should none the less be exercised in treating individuals suffering from any form of nephritis except that due to syphilis.

THE BRITISH PRACTITIONER'S INCOME.

Some of the most interesting facts which have been brought out in the course of the investigations incident to the national insurance movement in Great Britain, are those set forth in Sir William Plender's report of the results of the inspection of the books of the physicians in four towns in England and one in Scotland by accountants acting for the British insurance commission. Out of the 171 physicians in these towns only eleven refused to permit access to their books and the accountants were enabled to make a fairly accurate guess regarding their incomes and expenditures by comparing them with those of other practitioners of the same standing in the same towns. The total income of the physicians in these five towns was £131,600 for 167 physicians in 1910, and £136,201 for 171 physicians in 1911. After deducting the cost of drugs, materials furnished patients, salaries of assistants, nurses, etc., paid by physicians and the cost of collecting accounts, the net income was for 1910, £119,711 and for 1911, £123,915. From this it would appear that the average income of the physicians, in the five towns, was £720 a year. The average annual gross income derived from visits at patients' houses and attendance at "surgeries," after deducting a proportionate amount for bad debts was 4s 2d per capita of the population, not considering the number of persons attended under contract. Under the insurance act it was proposed to pay the physicians six shillings per capita annually for at-

tendance on the insured. As has already been noted, this proposition on the part of the government has been declined by the British Medical Association acting for the English practitioners and a counter proposition made that the government pay a fee of 8s 4d per capita annually for medical attendance. In summarizing the results of this investigation the Chancellor of the Exchequer has pointed out that the sum named in the insurance act was really higher than the sum actually received by the physicians in the five towns and that, moreover, the insurance money did not cover tuberculosis cases, maternity cases, and operations, nor would it in practice cover the well to do, and taking these factors into consideration the chancellor was of the opinion that the physicians would in fact be better off under the act, even at a per capita rate of six shillings, than they are on the present basis of private payment from all classes of people for all classes of cases.

The answer, which immediately suggests itself to the practitioner, is that a large proportion of the cases which would be covered by the insurance act are now treated at public dispensaries in a way most economical of the physicians' time. Moreover, if the attendance of the physician is provided for under the insurance act without direct cost to the patient, there can be no question that the physician's services will be much more frequently sought than at present and there is every probability that the service would be abused by the public, with the result that the physicians who undertook the service on a low annual per capita basis, would find themselves worn out in the service for a wholly inadequate remuneration.

The American physician will, we think, be somewhat surprised to learn that the average income of the English physician in large provincial towns is \$3,600, particularly when he recalls that this average takes in good, bad, and indifferent alike. We do not recall any accurate report regarding the earnings of American physicians. A private investigation made in New York some years ago showed that the average income of the New York practitioner was less than \$1,000 a year. This investigation, however, was by no means complete and the income of the New York practitioner could not be taken as a criterion for the remainder of the United States, for there are many physicians in practice in this city who have independent incomes and with whom the practice of medicine is rather an avocation than a vocation. We do not believe, however, that the income of ethical physicians in American towns of 80,000 population would average anything like \$3,600 a year, the sum given as the average income in Sir William Plender's report.

The report throws an interesting side light on the question of dispensing by doctors, for the average net income of the physicians of Dundee who do not dispense, but only write prescriptions, is larger than in the four English towns where it is the rule for the physician to do his own dispensing. From this it appears that the dispensing doctor earns less than the prescribing doctor. There may be other factors of difference in the conditions existing in Dundee and the four English towns, which tend to increase the income of the Dundee doctors compared with those of the other four towns who did their own dispensing, but, so far as the facts elicited by the investigation show, the doctor makes no money by dispensing.

A NEW PROBLEM IN CRIMINOLOGY.

A French writer in referring to the recent riots in the South of France attributed their destructive character largely to the influence of absinthe. There is an extraordinary brutality about the work of the criminal of the last decade. Formerly vengeance on an informer was satisfied with his death: now the victim is not only shot or sandbagged, but horrible curses and fiendish words of exultation are shouted into his dying ears, his body is kicked about and disfigured. Cowardice is even more marked than formerly; the killing is done from secure ambush or by a gang in impregnable majority, and the victim is allowed no slightest chance of self defense. The criminal of to-day has gathered from the four corners of the earth the narcotics once limited to certain areas. Comparatively harmless to their respective patrons, the coca leaf in Peru, the poppy in China, have been forced in Europe and the United States into a partnership with the gins, brandies, and whiskeys of these sophisticated communities to reduce the victim of their combined toxicity to a condition of brutish ferocity unknown since the time of the Huns, Goths, and Vandals. Those savages had at least public opinion behind them; to slay, to rape, to torture, to burn, to destroy was in their day the trade of trades. They were like grown up children in their freedom from accusing conscience. Morphine, cocaine, absinthe, and whiskey, in combination, can undo in an hour the civilizing influences of fifteen centuries.

Alcohol alone seems to have been a sufficient problem for the modern community. How are we to handle this new malignant partnership, this trinity of demons, which have come to complicate also the questions of gambling and prostitution? Under their influence the individual seems to sink into something less than a human being. With all senses dulled, the victim demands noise, the crash of breaking machinery or the rapid fire of automatic pistols,

the sight of flame and blood, the swift movement of the automobile, the feeling of crushing and maiming an adversary; only to such powerful stimuli do his paralyzed faculties respond, while all the higher mental functions, self control, a sense of decency, inhibition generally, are abolished. Not only in France have the results been seen, but in the recent battle with the London police, and the spectacular murder of a New York gambler we have typical incidents. It is not unlikely that the foolish sabotage of recent strikes is to be attributed to the same narcotic combination acting on minds, not criminal perhaps, but of low type nevertheless. Alcohol has had probably much to do with making the familiar "grafter"; but the combined narcotics are producing an inhuman being, careless of all restraining influences, that will destroy any obstacle to a desired end.

FAILURE OF AN INTRAMUSCULAR INJECTION OF ETHER.

Dervaux reported to the Société de chirurgie on July 10th, according to *Presse médicale* for July 17th, that he had tried anesthesia by intramuscular injection in a case of cyst of the epididymis, which he removed from a man, aged sixty years, who was atheromatous and whose heart and kidneys were in a dubious condition, and to whom, therefore, he did not wish to administer chloroform. Seventy c.c. of ether was injected into the buttocks in divided doses of ten c.c., but anesthesia was not obtained; as was remarked, the patient was "drunk" but not insensible. This drunken stupor lasted for twelve hours, and twenty-four hours elapsed before the ether was eliminated by the lungs, which fact leads Dervaux to ask if the intramuscular method of giving ether really safeguards against pneumonia, as was asserted by its sponsor Descarpentries.

RADIUM EMANATION.

The German medical periodicals have contained lately a number of original articles on radium emanation, while in one of them we have also noticed a full page advertisement of radium emanations, sold in preparations for baths, bandages, mud baths, injections, inhalations, and as beverages. Some of the writers give glowing reports of the results produced by these emanations. The patients assemble in a room in which the air is charged with the emanations, and breathe this "fortified air," sipping at the same time radium charged waters. Such statements, as well as the advertisements, appear in one of the leading Berlin medical journals. A very few authors, while stating their belief in the benefit of the natural radium spas, protest against the misuse of such emanations, and warn against overconfidence in such "cures." But these writers are in the minority. It is not to the credit of our German confrères that such statements are made, which, on the face of them, are not up to the scientific standard we are used to note in communications from the land of Virchow.

Obituary.

JOHN JAY TAYLOR, M. D.,
of Philadelphia.

Doctor Taylor died at his home in South Ocean City, N. J., on August 2d, aged fifty-eight years. He was born in Indiana in 1854, but came East while still a young man to study medicine and graduate at the Medico-Chirurgical College. He was the founder, publisher, and editor of the *Medical Council*, a journal whose intimate quality and interest in the personal affairs of its subscribers made it almost unique among medical publications. Doctor Taylor was the author of several excellent works on the business problems of the physician, and devised a simple and efficient method of bookkeeping for the profession. He was a member of numerous medical organizations. A widow, son, and daughter survive him.

MAURICE HOWE RICHARDSON, M. D.,
of Boston.

Doctor Richardson died in Boston on July 31st, aged sixty-one years. He was born in Athol, Mass., in 1851, and received his preliminary education at the Fitchburg high school and at Harvard University, where he graduated in 1871. Four years later he received his degree of M. D. from the same institution and began practice in 1876; he held many positions in the medical school, being ultimately Moseley professor of surgery. He was visiting surgeon to the Massachusetts General Hospital for twenty-five years and the author of numerous monographs on surgery, beside communications to medical publications, including the *NEW YORK MEDICAL JOURNAL*. He is survived by a widow and six children. Doctor Richardson was the typical surgeon of the first rank in his modesty and charity, and an immense circle of professional friends and admirers regret his loss.

Medical Law.

VIII. CIVIL MALPRACTICE.

It would appear from the reported cases that in a surprisingly large proportion of instances in which operations have not resulted in the benefits hoped for, the patients assert and attempt to enforce liability on the ground that the operation was unauthorized and was performed without the consent of the patient.

Another case of this sort is the case of *Van Meter vs. Crews*, 148 Southwestern Rep., 40. In this case the plaintiff, an unmarried woman of about thirty years of age, brought suit, charging that she had been operated upon without her consent, and that the operation was unskillfully performed. It appears that the plaintiff had been suffering with a pain in the right side of the abdomen for about twelve or eighteen months, and for two months she had been suffering with pain on the left side of the abdomen. She called the defendant, who after making an examination, prescribed for her. She failed to improve, and he told her that he was not

satisfied with the examination he had made at his office and that he wished her to go to the hospital, where he could make the examination more satisfactorily. She went to the hospital and there, after the usual preparations had been made and several of her relatives had been summoned, she was placed under an anesthetic and an operation was performed which consisted in taking out one of the ovaries and making an adjustment of the other. After this she remained at the hospital until the wound healed, when she went home, but she was unable to stand straight, and later another operation was performed, which it was charged was due to the unskillfulness of the first. The proof for the defendant was that the operation was performed without neglect on his part, and that what he did was according to the approved practice in such cases, although it did not afford relief in this case. The jury gave a verdict of \$4,000 against defendant, and the defendant appealed from the judgment entered upon the verdict. Mr. Justice Hobson, of the Court of Appeals, in commenting upon the question of whether or not the operation was authorized, said:

The evidence heard on the trial tends very strongly to show that, though the plaintiff was adverse to the operation, it was understood by her and her relatives, who were summoned to the hospital and consulted, that if, upon the examination by the doctor, it was found that an operation was necessary, he would perform it while she was under the anesthetic. Both her uncle and her brother were sent for, and the matter was discussed carefully, not only with them, but with her; and, while there is some conflict in the testimony, there was evidence warranting the jury to conclude that the doctor understood, and had the right to understand, from all that passed between him and the plaintiff, that he was to perform the operation while she was under the anesthetic if, upon the examination, he found this necessary.

The justice, in criticising the charge given by the trial judge upon the question of consent, stated that:

The court should have told the jury that if the defendant understood, and had reasonable grounds to understand, from the words or conduct of the plaintiff, that she was willing for the operation to be performed while she was under the anesthetic if, upon his examination of her, he found it necessary, and upon the examination he found the operation to be necessary, and he so performed it, then he had the right to perform the operation as by her consent. Reasonable grounds are such grounds as would warrant a man of ordinary prudence to so understand under the circumstances.

Upon the question of the degree of skill required to be exercised by physicians and surgeons the Appellate Court modified and approved of a charge to the jury, which as modified briefly states the law as follows:

The defendant in performing the operation upon the plaintiff was not required to possess or exercise the highest degree of skill, but in performing the said operation the said defendant was bound to possess and exercise that degree of skill usually possessed by the profession of surgeons generally, in this section of the country. And if the operation was performed with such skill, then it was not unskillfully performed within the meaning of these instructions.

For the errors committed in the trial the judgment was reversed, and the case sent back for a new trial.

The legal rule that a physician will not be held liable for an error of judgment is one that is not generally understood, it being popularly supposed that its application is a much broader one than that applied by the courts.

News Items.

Changes of Address.—Dr. H. M. Argenbright, to Mount Crawford, Va.

Dr. E. G. Hand, to Jolly Block, Avoca, N. Y.

Dr. H. M. Kemp, to Turner's Falls, Mass.

Dr. H. S. Turrill, to Gaylordsville, succeeding to the practice of the late Dr. John A. Dolan.

Dr. T. Weston Chester, to 143 North Tremont Street, New York.

Richmond Academy of Medicine and Surgery.—A committee composed of the following members of the Richmond Academy of Medicine and Surgery has been appointed by its president to arrange for the entertainment of the American Electrotherapeutic Association, which meets in Richmond, September 3d, 4th, and 5th: Dr. J. C. Walton, chairman; Dr. C. M. Hazen, Dr. M. W. Peyser, Dr. R. W. Miller, Dr. J. A. Hodges, Dr. D. D. Talley, and Dr. R. A. Nichols. E. H. Terrell, M. D., assistant secretary.

The Howard T. Ricketts Prize.—Mrs. Myra T. Ricketts, widow of Howard T. Ricketts, late professor of pathology in the University of Chicago, has given \$5,000 to the university to found a scholarship to be known as the Howard T. Ricketts Prize, which will be awarded annually to the student in the department of pathology and bacteriology who presents the best piece of research work. Doctor Ricketts died in Mexico city in 1910 from typhus fever, which he contracted while engaged in the scientific investigation of the disease.

Chicago Women Physicians Form a Memorial Association.—Women physicians of Chicago have organized to honor the memory of members of their profession. According to present plans, the memorial will be in the form of a lectureship in various medical schools. Two women whose names have been mentioned as specially worthy of honor are Dr. Sarah Hackett Stevenson and Dr. Marie Mergier, pioneers among women physicians. Dr. Lucy Waite, Dr. Eliza H. Root, Dr. Sarah C. Buckley, and Dr. Marie White are in charge of the movement.

The Plague Situation.—The reports received by Surgeon General Blue, of the United States Public Health and Marine Hospital Service, indicate that there is no further danger from plague in New Orleans, or elsewhere in the United States, and that the disease is practically stamped out in Havana, and is well under control in Porto Rico. A message received from Porto Rico on August 6th stated that no new cases had been reported since July 30th, and that all existing cases were progressing rapidly. A report from the specialists who went to New Orleans to anticipate the development of plague, following the discovery of an infected rat last week, report that no further infection has been found among several hundred rats that have since been carefully examined.

Fifth Censorial District of the Pennsylvania State Society.—The annual meeting of the Fifth Censorial District of the Medical Society of the State of Pennsylvania was held at Mount Holly Springs on July 23d, under the presidency of Dr. J. B. Amberson, of Waynesboro, Dr. Harvey B. Bashore, of West Fairview, president of the Cumberland County Medical Society, delivered the address of welcome. Dr. H. C. Deaver, of Philadelphia, delivered an address on the Value of Vaccines, and Dr. James Tyson, also of Philadelphia, spoke on the Family Physician. Officers for the ensuing year were elected as follows: President, Dr. Harry A. Spangler, of Carlisle; vice-president, Dr. William E. Wolff, of Arendtsville; secretary and treasurer, Doctor Eisenhart, of York. The next annual meeting of the district will be held in Gettysburg in July, 1913.

Gifts and Bequests to Hospitals.—The will of James Edward Childs, who died in New York, on July 16th, contains a bequest of \$50,000 to Thrall Hospital, at Middletown, Conn.

By the will of D. J. Garth, who died in Plainfield, N. J., on July 18th, the New York Polyclinic Medical School and Hospital will receive \$3,000, and the White Plains Hospital Association, \$500.

The Board of Estimate and Apportionment of New York has approved the proposal of the New York Association for the Improvement of the Condition of the Poor to build a \$25,000 seaside hospital at Rockaway.

New Department Opened at Delaware Hospital.—Maternity Hall, the new department of Delaware Hospital, Wilmington, was opened for patients on Saturday, July 27th. The department occupies the wing used formerly as a nurses' home, which was the original building of the hospital. It is splendidly equipped and has accommodations for fifteen patients.

Lehigh Valley Medical Association.—At the thirty-second annual meeting of this association, held at Delaware Water Gap on Thursday, July 18th, the following officers were elected: President, Dr. G. W. Guthrie, of Wilkes-Barre; first vice-president, Dr. J. M. Wainwright, of Scranton; second vice-president, Dr. B. R. Field, of Easton; third vice-president, Dr. E. W. Gleason, of Lambertville, N. J.; fourth vice-president, Dr. J. L. Hornbeck, of Catsaqua; secretary, Dr. J. M. Luther, of Palmerton; treasurer, Dr. A. A. Seem, of Bangor.

Personal.—Dr. Edward Davidson Congdon, instructor in anatomy at Cornell Medical College, has been appointed instructor in anatomy at Leland Stanford University.

Dr. Isaac W. Brewer, first lieutenant in the Medical Corps of the United States Army, now stationed at Fort Niagara, N. Y., has resigned from the service of the United States to accept the position of superintendent of the county tuberculosis sanatorium at Ithaca, N. Y.

Dr. George W. Beach, assistant superintendent of the Iowa State Sanatorium, has been appointed superintendent of the Minnesota Sanatorium for Consumptives, at Walker, and will assume his new duties some time this month.

The appointment of Dr. John Howland, of New York and St. Louis, as director of the Harriet Lane Home for Invalid Children, Baltimore, professor of pediatrics in the medical department of Johns Hopkins University, and pediatricist to the Johns Hopkins Hospital, has been announced. He will assume his new duties about the middle of September.

Dr. Harry S. Wagner, assistant superintendent of the Westfield, Mass., State Sanatorium, has been appointed superintendent of the Hartford County Home, on Newington Heights. Dr. Edward J. Lynch, of Portland, Conn., will be Doctor Wagner's assistant.

Dr. Samuel E. Fletcher, of Chicopee, Mass., has been appointed city bacteriologist by the board of health. Up to the present time Chicopee did not have such an official, and all work which required the services of a bacteriologist was sent to Springfield. Doctor Fletcher assumed his new duties on August 1st.

Dr. J. Anna Norris, of the University of Chicago faculty, has been elected head of the department of health and physical training for women of the University of Minnesota. She will also fill the newly created position of physician to the girl students.

Dr. John E. Runnells, superintendent of the New Hampshire State Sanatorium at Glencliff, has accepted the position of superintendent of Bonnie Burn Sanatorium, at Elizabeth, N. J. He assumed his new duties on August 1st.

Sir Patrick Manson, LL. D., M. D., F. R. S., medical adviser to the colonial office, who is retiring, is to be appointed a Knight Grand Cross of the Order of St. Michael and St. George in recognition of his eminent services in connection with the investigation of the cause and cure of tropical disease. Sir Patrick, who was born in 1844, was one of the first to propound the theory that the mosquito is the host of the malarial parasite at one stage of its existence.

Dr. Francis H. Champneys has been elected president of the Royal Society of Medicine, London.

Dr. William J. Hickson has been appointed director of the division of medical research on the Vineland Training School, Vineland, N. J.

Dr. George L. Hubbell, of Hobart, N. Y., has been appointed coroner for Delaware County, to succeed Dr. R. S. Moscript, who resigned recently on account of moving from the county.

Dr. Eugene B. Wright, of Baltimore, will become resident physician at the Hebrew Hospital on September 1st to succeed Dr. Chadbourne Andrews.

Dr. Claude Jackson Stallworth, formerly of Beatrice, Ala., has been appointed resident physician of the Presbyterian Eye, Ear, and Throat Hospital, Baltimore.

Dr. Francis X. Mahoney has been elected chairman of the Boston Board of Health, to take the place of Doctor Durgin.

Journal of Progressive Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL

July 25, 1912.

1. E. E. SOUTHARD and MYREILLE M. CANAVAN: Second Note on Bacterial Invasion of Blood and Cerebrospinal Fluid by Way of Lymph Nodes: Findings in Bronchial and Retroperitoneal Lymph Nodes.
2. IRA S. WILE: Immigration and Midwife Problem.
3. MILNE B. SWIFT: Efficiency of Operative Population of Textile City Derived from Surgical Standpoint.
4. FREDERICK A. KEYES: Institutional Dentistry. Methods, Results.
5. GUY G. FERNALD: Massachusetts' Reformatory Method of Differentiating Defective Delinquents.

1. **Bacterial Invasion of the Blood and Cerebrospinal Fluid by Way of Lymph Nodes.**—Southard and Canavan followed the same technique as that adopted by Gay and Southard in the study of the post mortem bacteriology of the blood and cerebrospinal fluid, and by themselves in the study of the blood, cerebrospinal fluid, and mesenteric lymph nodes in the investigations of fifty cases in which the mesenteric were replaced by bronchial lymph nodes, and thirty in which retroperitoneal lymph nodes were added. The conclusion of the two former papers is corroborated; post mortem cultures from the cerebrospinal fluid are more likely to yield growths than those from the blood. The examination of the cerebrospinal fluid was oftener positive than the mesenteric or the bronchial lymph nodes, but the retroperitoneal lymph nodes were more frequently invaded than either the blood or the cerebrospinal fluid. Both bronchial and retroperitoneal lymph nodes exceed the blood in frequency of positive cultures; the excess is slight, however. The most frequent two out of three positive combination, found in 1910, was that of positive cerebrospinal fluid and positive mesenteric lymph node; this led to the hypothesis of a lymphogenous blood borne invasion of organisms lodging in the meninges and later killed out in the blood by bacteriolytic substances, but in the present series this condition is reversed, the combination of positive cerebrospinal fluid and positive bronchial lymph node is very rare. Positive growths were found in the mesenteric node combination in fifty-five per cent., in the retroperitoneal in fifty-two per cent., in the bronchial in thirty-five per cent.

3. **Efficiency of Mill Operatives.**—Swift gives a remarkably good report of the surgical conditions of the operatives in the cotton mills at Fall River, Mass., for 1911. These operatives number approximately 30,000. He states that it is an invariable rule in the mills that an injured employee shall receive medical attention for even the smallest abrasion, that ninety-nine per cent. of all injuries receive such attention and that ninety-nine per cent. of these receive it at the clinic of which he is the head. During the year there were 804 injuries in the textile industry; only eleven of these required hospital treatment, and none of the victims died. This is a ratio of 2.6 per cent. of injuries and no death during the year. He considers that the physical efficiency of an operative depends largely on seven factors: First, hours of labor; second, proper surroundings at work; third, suitable safety devices; fourth, healthy living conditions out of work; fifth, instructions as to the dangers of the particular occupation; sixth, intelligent obedience to the instructions; seventh, suitable and immediate surgical attendance.

The laws of Massachusetts deal efficiently with the first three factors, but those governing the living conditions are inefficient. The operatives are apt to sleep in crowded rooms and to go to work with brains clouded and senses numb in consequence. The fifth and sixth factors are largely individual and rest with instructor and pupil. The seventh is a matter of personal experience with the kind of injuries sustained, and is very important.

4. **Institutional Dentistry.**—See editorial article in this JOURNAL for August 3d, page 238.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

July 27, 1912.

1. HOWARD D. KING: Plague: Menace of United States.
2. W. C. RUCKER: Necessity for Rodent Extermination in American Seaports.
3. JOHN H. GIBSON: Further Experience with Aneurysmorrhachy (Matas).
4. J. WESLEY BOVÉE: Gynecological Pelvic Drainage.
5. WILLIAM D. HAGGARD: Tumors of Small Intestine.
6. M. L. HELDINGSFELD: Benign Epithelioma; Transitional Morphology.
7. CHARLES H. MAYO: Diverticula of Gastrointestinal Tract: Their Surgical Importance.
8. E. M. VON EBERTS: Chronic Unopened Empyema.
9. SAMUEL ROBINSON: Surgery of Chronic Infectious Diseases of Lung.
10. SIMON FLEXNER, PAUL F. CLARK, and A. R. DOCHREZ: Experimental Poliomyelitis in Monkeys: Survival of Poliomyelitic Virus in Stomach and Intestine.
11. ST. CLAIR VANCE: Myositis Ossificans Traumatica.
12. A. H. SAWING: Tonsillectomy and New Tonsil and Nasal Septum Knife.
13. EDMUND A. BABLER: Endothelioma of Lymph Nodes of Neck.
14. JAMES M. ANDERS: Duodenal Stenosis.
15. EUGENE G. MATTISON: Supernumerary Axillary Mammary Glands.

1. **Plague, the Menace of the United States.**—King lays great stress on the fact that at the present time the United States is confronted with an important problem, the solution of which should claim the attention of the whole country and impel it to immediate action—the danger of plague invasion. No longer is it endemic only in the Old World. It has made its appearance in Porto Rico and Cuba and has become a disease of universal distribution. With a prophetic eye he sees the plague ravaging the Mississippi valley and sweeping the Atlantic seaboard of this country. Following a brief historical survey of the plague, he gives a description of conditions as they actually exist in South America, the West Indies, Central America, and Mexico, the means adopted against the spread of the disease, and the various conditions favorable to its diffusion, and affirms his belief that, not only is it desirable, but imperative that a plague conference be held, either in New Orleans or Mobile, preferably the former. The prevention of plague importation, the wholesale extermination of the rat, and an improved sanitary condition of the southern ports should claim its attention.

2. **The Necessity for Rodent Extermination in American Seaports.**—Rucker's ideas coincide with those of King, in so far as the necessity for rodent extermination exists, that the spread of the bubonic plague may be stayed. His reasoning is clear; since plague is a disease of commerce and likewise a disease of rats, and since rats travel the world over in ships, it is incumbent on those who are charged with the protection of the health of marine ports to kill rats in ships. Periodical fumigation is recommended, by sulphur dioxide, carbon dioxide, carbon monoxide, or funnel gases. An international sanitary agreement is suggested as necessary to secure such action. *Fit mus, non est pestis.*

3. **Further Experience with Aneurysmorrhaphy (Matas).**—See this JOURNAL for June 15th, page 1296.

4. **Gynecological Pelvic Drainage.**—See this JOURNAL for June 15th, page 1293.

6. **Benign Epithelioma; a Study of Transitional Morphology.**—See this JOURNAL for June 8th, page 1220.

7. **Diverticula of the Gastrointestinal Tract.**—See this JOURNAL for June 8th, page 1220.

8. **Chronic Unopened Empyema.**—See this JOURNAL for June 8th, page 1219.

9. **The Surgery of Chronic Infectious Diseases of the Lungs.**—See this JOURNAL for June 8th, page 1219.

10. **Experimental Poliomyelitis in Monkeys.**—Flexner, Clark, and Dochez, in their thirteenth note on this subject, draw attention to the obvious deduction from their experiments. Since the poliomyelitic virus is present in the nasal and buccal mucus in cases of human poliomyelitis, it is naturally swallowed with the saliva and enters the stomach. The virus persists for a long time in the stomach and intestines, being unaffected by the gastric and intestinal secretions. Later it leaves the human body, in part, with the intestinal discharges, which are therefore an active source of infection. They have not yet proved whether in the monkey artificially fed with the virus, it also passes out in a potent state with the stools.

MEDICAL RECORD.

July 27, 1912.

1. SIMON BARUCH: External Use of Water for Enhancing Resistance in Tuberculosis.
2. CHARLES E. ATWOOD: Treatment of Habits.
3. ABEL L. WOLBARST: Neosalvarsan, with Particular Reference to Intramuscular Injection.
4. JACOLYN VAN V. MANNING: Bedbugs and Bubonic Plague.
5. O. L. MULOT: Error of College Criticism.
6. ALEX. C. WIENER: Abdominal Tumors of Tuberculous Origin.
7. ISRAEL BRANN: Sunstroke and Heat Prostration.

1. **The External Use of Water in Tuberculosis.**—Baruch calls attention to the absence of tuberculosis treatment by Brehmer, of Goerbersdorf, who announced that tuberculosis is curable by the use of air, water, exercise, rest, and diet. These remedial agents received full attention in every American work, with the exception of water, and yet, in enhancing resistance in this disease, the greatest of these remedial agents is water. Marvelous results are claimed for the methodical graduated application of cold water (below the skin temperature) as demonstrated at the Montefiore Home for Incurables, patients in all stages of the disease improving in nutrition, gaining in weight and general vigor, and returning to their work to remain useful for several years. These results were attained without interference with medication, even when it did not meet the writer's approval, proving that the benefits were due to the methodical application of water and the good food, the appetite for which was owing to the tonic effect of the hydrotherapeutic measures. The author terms his method "neurovascular training."

2. **Treatment of Habits.**—Atwood asserts that contour, structure, and natural characteristics are determined by the laws of heredity, but that habits are acquired, although an inherited faulty mental makeup may predetermine tendencies to certain kinds. Some peripheral physical defect may be evi-

denced by a habit spasm, but it also is found only in those who inherit a neuropathic constitution. Habits are also readily acquired by neurasthenics and by nervous individuals. An undesirable habit cannot be inhibited any more than an undesirable disposition, but a new habit may become automatic after a requisite number of repetitions, provided the patient can be induced voluntarily to substitute desirable responses for the undesirable ones. It is, however, absolutely necessary in order to gain the ascendancy, that a surrender of the will should be voluntary. There is always a tendency to revert to the former conditions as the old sensorimotor paths are still open, and to make them permeable only a very few impulses are needed. This view is based upon biological and psychological lines that are apparently unassailable. The physical treatment of faulty habits depends upon the ingenuity of the attendant. The writer cautions against interference, in the presence of actual nervous or mental complications, except under the advice of a neurologist.

3. **Neosalvarsan, Especially by Intramuscular Injection.**—Wolbarst, from a study of the use of this remedy in twenty-three cases, finds the clinical results as striking as those of salvarsan. The reaction is slight or nil, with correct technique, and larger doses are tolerated. The use of sodium hydroxide is unnecessary, and thrombosis is avoided owing to the neutral reaction of the solution in water. Leakage into the tissues is readily absorbed. The inflow of neosalvarsan solutions feels like a burning at the injection site. The eyes, kidneys, heart, and lungs are unaffected by neosalvarsan. Intravenous injections may be repeated in two to four days. The neutral reaction of neosalvarsan solution makes it suitable for intramuscular medication which is more effective than the intravenous. By adding a few drops of one per cent. beta eucain or alpin solution the suspension in glycerin is made almost painless. The solution of neosalvarsan in distilled water is very painful.

4. **Bedbugs and Bubonic Plague.**—Manning discusses the rôle which *Cimex lectularius* plays in the transmission of bubonic plague and of infantile paralysis. He pleads for an annual compulsory municipal fumigation of all human habitations, as effective, not only in poliomyelitis and plague, but in the prevention of all diseases whose virus is present in the blood of the host during the acute stage of the disease.

5. **The Error of College Criticism.**—Mulot, using the report of the Carnegie Foundation as a text, discourses at large on the futility of criticising our medical educational institutions. Like many others, the writer confesses to wasted time and misdirected energy in this matter and believes it an error. Rather better had the energy of all the critics been expended in persuading the various State boards to conduct more rigid and rational examinations, thus making for more real progress and an avoidance of the bitterness that has marked the whole question. He believes that the whole college question will automatically regulate itself, if the various State licensing boards make their examinations what they should be. Students will shun the college having the larger proportion of State

board's failures. It naturally follows that the school must endeavor to educate its students to pass the State board examinations or cease to exist for want of patronage.

6. Abdominal Tumors of Tuberculous Origin.

—Wiener observes that our knowledge of tuberculous infection has been enlarged in two directions: In establishing the fact that tuberculous toxemia has an irritant effect upon tissues, independently of the presence of the bacillus itself or its debris, and, second, in the recognition of tuberculin as an agent of the greatest diagnostic and therapeutic value. In the etiology of clinically malignant tumors, tuberculosis toxemia, as well as the bacillus itself, must be looked upon as important factors. The modern surgeon should have the various biological tests at hand, to the end that a biological diagnosis may be available before making any operation for ulcers or tumors.

LANCET-CLINIC.

June 1, 1912.

1. SIDNEY J. RAUTH: Sociological Dentistry.
2. OTTO P. GEIER: Relation of Charities and Correction Department to Dental Movement.
3. F. B. DYER: Relation of Education to Dental Movement.
4. J. S. HAUER: Relation of School to Dental Movement.
5. WILLIAM D. PORTER: Attitude of Medical Profession to Dental Movement.
6. E. O. ADAMS: Team Work.
7. H. R. ALLEN: Recurrent Club Feet.

June 8, 1912.

8. F. HOFFER McMECHAN: Etherization by Drop Method, with Re-breathing and Concomitant Oxygenation.
9. MOSES SALZER: Nitrous Oxide-Oxygen as Routine Anesthetic.
10. ARTHUR D. DUNN: Syphilis of Aorta.
11. SAMUEL IGLAUER: Relation of the Antituberculosis Movement to Dental Movement.
12. M. EDITH CAMPBELL: Relation of Wage Earner to Dental Movement.
13. J. H. LANDIS: Relation of City Health to Dental Movement.

June 13, 1912.

14. MARK A. BROWN: Grocco's Sign in Pleuritic Effusion.
15. JOHN L. LOHSE: Principles Involved in Treatment of Superficial Surgical Lesions.
16. G. A. HENDON: Complete Operation for Suppurative Appendicitis.
17. FRANCIS DOWLING: Some Inherited Eye Affections.

June 22, 1912.

18. PAUL G. WOOLEY: Laboratory Diagnosis of Malignant Tumors.
19. GEORGE B. TWITCHELL: Prevention of Scarlet Fever and Diphtheria.
20. FREDERICK S. STILLWELL: Relation of Orthodontia to General Health and Development of Child.
21. MARTIN H. FISCHER: Contributions to Colloid Chemical Analysis of Absorption and Secretion.

June 29, 1912.

22. MARTIN H. FISCHER: Contributions to Colloid Chemical Analysis of Absorption and Secretion.
23. A. P. COLE: Concerning Serum Therapy in Tetanus.
24. J. EDW. PIERUNG: Causes and Surgical Relief of Intestinal Stasis and Ptoxis of Colon.
25. K. L. STOLL: Procrastination in Diseases of Eye.

9. Nitrous Oxide-Oxygen as a Routine Anesthetic.

—Salzer allows that this method has certain disadvantages; it is expensive, and relaxation without ether is not always satisfactory; moreover, there is occasionally a slight cyanosis. Over against these, certain advantages are found: In its administration a skilled anesthetist is necessary; its action is quick, pleasant, and free from untoward after effects, there being practically no nausea or vomiting and no odor. The recovery of consciousness is rapid. The writer's opinion is that this form of anesthesia should be given preference over all general anesthetics wherever possible, unless some special contraindication should interdict its use.

10. Syphilis of the Aorta.—Dunn has found that syphilitic disease of the aorta is common. Differentiation from arteriosclerosis is desirable for therapeutic reasons. The coronary artery is the seat of syphilitic infection more frequently than the

literature of the subject would lead one to suspect. Specific infection should be inferred, in the absence of other demonstrable cause, where aortic regurgitation occurs in a person between thirty and fifty-five years; the burden of proof should be on the negative. The syphilitic ranks are being filled by a rapidly increasing number of myocardial diseases. The writer suggests that in all cases of aortic disease, angina pectoris, myocarditis, and aortic insufficiency a Wassermann test should be made.

14. Grocco's Sign in Pleuritic Effusion.

Brown recalls that this sign is a triangular area of dullness, paravertebral in position, situated on the side of the chest opposite the effusion; he has found that in cases with free fluid in the pleural cavity, or in which an encapsulated effusion lies along the spine this sign is practically constant in its presence. When the patient lies upon the affected side, diminution or disappearance of the triangle is noticed (except when the pleural cavity is enormously distended), reappearing when the patient assumes the sitting or standing position, or reclines on the other side. A more pronounced triangle is present in right sided effusions. The hypotenuse of the triangle is usually a curved line, especially at the upper portion. The size of the triangle varies with the amount of pleural effusion, except that right sided effusions usually present a somewhat larger triangle. The presence of this triangle is not pathognomonic; it may exist in subphrenic conditions accompanied by a fluid accumulation.

15. Treatment of Superficial Surgical Lesions.

—Lohse has abandoned the use of antiseptic powders, ointments, lotions, etc., for reasons given. He substitutes as a standard solution a two per cent. sodium chloride solution containing one per cent. neutral sodium citrate, which is used as hot as can be borne, and kept applied by the frequent saturation of a gauze pad, covered with rubber tissue and lightly bandaged. The use of this solution for twenty-four hours produced a healthier appearance; in bad cases, a period of forty-eight to sixty hours is necessary.

18. Laboratory Diagnosis of Malignant Tumors.

—Wooley states that tumors cannot be classified upon a basis of malignancy, as malignancy is physiological, not anatomical. He finds that a diagnosis of malignancy cannot be based upon any single feature of a tumor; it is difficult to make a fine distinction between different kinds of malignant tumors. By studying the arrangement of the reticulum, carcinomas and sarcomas may be differentiated. Midway between carcinomas and sarcomas are transitional tumors of mesothelial origin.

23. Serum Therapy in Tetanus.

—Cole firmly believes in the efficacy of tetanus antitoxine as a prophylactic, and in its absolute harmlessness. It can be used repeatedly and in large doses without evil effect. Two injections of antitoxine serum, one at time of injury, and a second dose one week later, will prevent a large proportion of fatal cases. Antitoxine has its limitations; it will not save when the toxemia is so great as to produce nervous symptoms and the higher centres are overwhelmed. On the appearance of the symptoms of tetanus, endoneural and intraspinal injections should be made at

once, and repeated daily until a subsidence of the symptoms occurs, not omitting local disinfection of the original wound and the instillation of large amounts of antitoxine into all the surrounding tissues.

BRITISH MEDICAL JOURNAL

July 20, 1912.

1. W. G. SPENCER: Operations for Cancer of Tongue.
2. B. MOORE: Oxygenation and Tuberculosis.
3. C. WALL: Experience of the Dioradin Treatment.
4. R. E. KELLY: Anesthesia by Endotracheal Insufflation of Ether.
5. C. M. KENNEDY: Acute Epiphysitis.
6. J. E. BRISCOE: Appendicitis in Private and Public Hospitals for Insane.
7. G. H. WINCH: Gastric Adhesions as Cause of Sudden Death.

2. **Oxygenation and Tuberculosis.**—Moore finds that the growth of *Bacillus tuberculosis* is inhibited in an atmosphere of seventy per cent. or over of oxygen, and in the light of this finding he analyzes the factors in the development and treatment of tuberculosis in man. He shows that the several sites of predilection for the development of tuberculosis are precisely those in which the blood and lymph streams are most sluggish, least abundant, or are poorest in oxygen content, for example, the apex of the lung, lymphatic glands, about joints, etc. Further, the oxyphobic properties of the bacillus are enhanced by the conditions which spring up about a focus of the bacteria, they are walled off from the blood and lymph streams by a nonvascular zone of cells, and are thus cut off from all but the most insignificant amount of oxygen. Now the treatment of local tuberculosis by the hyperemic method of Bier is nicely designed to augment the supply of oxygen to the affected part, by increasing the rate of flow of the lymph. The open air treatment of pulmonary tuberculosis accomplishes the same end by means of its stimulant action on the respiration. The ideal is to have the cutaneous capillaries dilated by warmth and the pulmonary circulation accelerated by the stimulus of cool circulating air. Great altitude with its slight relative deficiency of oxygen is beneficial, on account of the increased respiratory movement which it necessitates.

3. **Experience of the Dioradin Treatment.**—Wall has carried out the treatment in ten cases of tuberculosis and reports the following conclusions from a careful analysis of his results. 1. In one case of pulmonary tuberculosis, the tubercle bacilli, which were numerous in the sputum on admission, were difficult to find at the end of a month, but were still present five months later. In the other eight cases of pulmonary disease the tubercle bacilli were present in the sputum as long as the patients remained under observation. 2. The action on streptococci was not tested. One patient had acne, but this was not benefited. 3. In six cases improvement was recorded during the treatment. In one of these improvement was maintained; four patients relapsed later, and one has not given a subsequent report. In one case there was slight improvement under treatment, but the patient died shortly after leaving hospital. In three there was no obvious improvement during the course of the treatment. In none was there evidence of complete arrest of the disease. 4. The strength improved with the general condition. 5. Seven patients gained weight during the treatment; one has continued to do so; three subsequently lost weight. There is no report from

two. Two lost weight during treatment and gained afterward. 6. A case of tuberculous epididymitis and peritonitis did not seem to be influenced by the treatment. 7. Evidence of a local action was difficult to find. One patient thought he could taste the drug a few minutes after the injection and that it slightly increased the cough. In another case it seemed to increase the cough. In others the cough and sputum diminished. In two patients there was no reduction of fever, though they became afebrile after cessation of treatment by the drug. 8. It was not possible to note any effect, good or bad, upon the gastric functions.

6. **Appendicitis in the Insane.**—Briscoe reports that in the ten years from 1902 to 1911 there were only seventy-five deaths from appendicitis, typhlitis, or perityphlitis recorded from all of the insane asylums in England and Wales. He believes that this extremely low incidence of the disease compared to the general incidence, is due to the fact that in these institutions constipation is not allowed to occur. The condition of the bowels is most carefully watched by the attendants, and the requisite laxative is given at the first appearance of sluggishness. In addition, the diet is very simple and wholesome and tends to obviate the likelihood of intestinal fermentation.

LANCET.

July 20, 1912.

1. P. L. MUMMERY: Intractable Constipation Treated by Operation.
2. M. YEARSLEY: Causes of Educational Deafness in Children.
3. R. T. HEWLETT and A. T. NARRIVELLE: Treatment of Diphtheria Infection by Dinitro-beta-Endotoxine.
4. A. J. WHITING: Recent Advances in Our Knowledge of Heart Disease.
5. H. T. ASHBY: Relation of Iron to Anemia in Infancy and Childhood.
6. F. F. WALTERS: Improved Classification of Cases of Pulmonary Tuberculosis.
7. H. CAMPBELL: Observations on the Neuron (II.)

1. **Intractable Constipation.**—Mummery does not agree with Lane in thinking that these cases are all due to a common pathological condition. He likewise does not believe that excision of the colon is either necessary or desirable. He feels that better results can be obtained by seeking the cause of the condition and remedying it directly when possible. Where this is not possible he thinks that resort to appendicostomy gives results which will compare very favorably with those of excision of the colon, and at the same time this is an operation with practically no mortality. He regards constipation as a symptom only, but thinks that it can be divided into three types, obstructive, atonic, and owing to undue solidity of the fecal material.

2. **Educational Deafness.**—Yearsley finds that heredity, either direct or indirect, plays a very important part in the causation of this form of deafness. Of a total of 1,076 deaf children 484 or 44.98 per cent. were congenitally deaf. Of these latter there were 145 children from 123 families in which there was history of congenital deafness in the direct line or in the collateral heredity. Yearsley believes that if it were possible to get complete and accurate family trees of congenitally deaf persons, the defect would be found to follow Mendelian principles. The presence of other conditions in the families of the congenitally deaf, such as insanity, and other defective conditions, seems to have considerable influence in the causation of deafness. Marriages of consanguinity seems to lead to deaf-

ness about four times as often as do nonconsonanguineous unions. Syphilis does not seem to be a cause of congenital deafness, but leads to diseases of the ear at so early an age that unless careful observations are made the disease is taken to be congenital.

3. Diphtheria Infection.—Hewlett and Nankivell find that an initial dose of 0.002 gramme of diphtheria endotoxine, followed at intervals of a week by one or more doses of 0.005 gramme, cause the disappearance of the bacteria from the oral and nasal cavities of chronic carriers. That this is not a coincidence is shown by the fact that a similar rapid disappearance of the bacteria can be induced in active cases of the disease by the same means. It is interesting to note that the injections do not seem to lead to the development of immunity, at least not lasting immunity, for in one of the patients thus injected, active diphtheria subsequently developed three months later.

5. Relation of Iron to Anemia.—Ashby has analyzed the livers from normal adults and from infants and children of varying ages as well as those found in certain diseased conditions, and finds that the full term human fetal liver contains five times as much iron as the normal adult organ, and as much as the liver from a case of pernicious anemia. The iron in the livers of infants gradually diminishes as they grow up, but most of the livers from children contain more iron than those from normal adults. Unlike livers in all other conditions examined, those from cases of pernicious anemia contain iron in the inorganic form.

7. Observations on the Neuron.—Campbell continues the presentation of his observations and comes to the consideration of the functions of the medullary sheath. He opposes the view that it acts as a means of insulation of the several fibres so as to prevent the diffusion of nerve impulses. He believes that its function is a protective one, against trauma, toxins, and the action of stimuli which are likely to cause nerve impulses. The fine neurofibrils, the proximate fibrillary structure of the neurons and their processes, are held by Campbell to be definite endoneurial paths, and that nerve impulses generated in the neuroceptor pass along the fibril to which that ceptor is attached and do not diffuse within the neuron to the other fibrils. These neurofibrils branch and each branch ends in a neuroceptor. Campbell holds that the object of thus multiplying the ceptors is to enable the generation of nerve impulses of varying strengths, which is accomplished by the exploding of few or many of the ceptors. In the first article he showed that the nerve impulse was not generated within the body of the nerve cell, but that it owed its origin to the discharging, or, as he prefers to call it, the exploding of the neuroceptors designed to respond to an impulse of a given nature.

AUSTRALASIAN MEDICAL GAZETTE.

June 15, 1912.

1. N. D. BOYLE and H. R. G. POATE: Muscular Control.
2. REID. BOWMAN: Typhoid Fever with Late Infection by Diplo coccus Organism.
3. CUTHBERT HALL: Septation of Female Reproductive Organs.
4. MAX HERTZ: Treatment of Infantile Club Feet.
5. W. McMURRAY: Yellow Oedema Dermatitis.

BULLETIN DE L'ACADÉMIE DE MÉDECINE.

June 18, 1912.

1. POZZI: New Results Obtained by Dr. Alexis Carel with Regard to Indefinite Survival of Tissues Separated from the Organism.
2. HERRIOT and MOSNY: Construction of New Hospital at Lyons.
3. E. BOINET: Blue Disease.

3. Blue Disease.—Boinet prefers this term to "congenital cyanosis," which suggests to the mind only a single symptom instead of a group of morbid phenomena. He reviews the literature of the subject, discusses the several theories advanced concerning the origin of the affection, and reports a case which is of interest because of the number of congenital malformations found in the heart at autopsy (narrowing in the infundibular region of the aorta and in the pulmonary artery; one inter-ventricular opening; two small interauricular openings; deviation of the aorta to the right), the probable previous occurrence of fetal or infantile endocarditis, the presence of clubbed fingers, and a funnel shaped deformity of the thorax, the absence of congenital syphilis, but the existence of recently acquired syphilis and of pulmonary tuberculosis, which was the cause of death.

JOURNAL DE MÉDECINE DE PARIS.

July 13, 1912.

1. SAVARIAUD: Appendicectomy at the Beginning of Crisis.
2. VINCENZO D'AMICO: Direct Therapeutics in Respiratory Disease.
3. PAUL and JEAN DELMAS: Oxygen in Apparent Death of New-born.
4. GEORGES S. COSKINAS: Chronic Myeloid Leuchemia with Malaria.
5. L. PLON: Two Types of Stomach.
6. LAIGNEL-LAVASTINE: Chronic Arthritis of Knee Quickly Cured by Specific Treatment.
7. GILLES: Pleuroperitoneal Tuberculosis and Pregnancy.
8. LEULLIER: Slow Thrombocytosis during Relapsing Pleuritis.
9. PIERRESO: Accidents Caused by Colored Playthings.
10. LÉON DEROY: So Called Laxative Injections.

6. Arthritis of Knee Quickly Cured.—Laignel-Lavastine's case was of a woman of twenty-eight years, who had suffered from an inflamed knee for eight months. Treatment had been tried with sodium salicylate, actual cautery, sodium arsenate, calcium glycerophosphate, sulphur baths and douches, without result. Owing to a history of loss of teeth, metritis, and abortion after marriage at sixteen years, the writer tried hypodermic doses of mercury biniodide, one centigramme, with potassium iodide internally; in ten days the patient was cured. Tertiary arthritides are not uncommon and often escape accurate diagnosis.

9. Accidents from Colored Toys.—Pierreson had two cases of poisoning in children who had been playing with blocks made of compressed clay and colored with lead chromate over a layer of resin. The symptoms were those of an acute erythema around the lips, inflammation of the gums, and swelling of the face, accompanied by intense itching and burning. Washing with boiled water was sufficient to effect a cure, but the author emphasizes the danger of carelessness in handing over such toys to young children.

PRESSE MÉDICALE.

July 13, 1912.

1. JEAN LÉPINE: French Psychiatry Today.
2. CH. AVERIEN and L. GIBSON: Action of X Rays on Eosinophiles.
3. LÉON ALBERT: Industrial Accidents. Traumatic Strictures.
4. PIERRE DELBEC: Spontaneous Amputation of Appendix.
5. JORGE DE GOUVIA: First Transplantation of Bone Tumors.

2. **X Rays and Eosinophiles.**—Aubertin and Giroux summarize their conclusions to the effect that subjects react to irradiation by a leucocytosis affecting mainly the granular leucocytes, which predominate in their blood and hematopoietic reserves; in the normal state these are obviously neutrophils; in myeloid leuchemias they are also neutrophils, for these cells are still in a large majority in their blood, although greatly modified; in the case reported by the authors, in which the eosinophiles reached sixty-five per cent., the leucocytosis was evidently of eosinophile nature. The x rays do not act on the blood like infections, which provoke an exclusively neutrophile reaction; they act also on the eosinophiles. In moderate doses they cause these cells to emigrate into the blood; in large doses, they destroy them.

5. **Transplanting in Bone Tumors.**—De Gouvêa transplanted a portion of the fibula to replace part of a radius resected for an osteosarcoma. The results were admirable, as to both leg and arm.

MEDIZINISCHE KLINIK.

June 16, 1912.

1. RICHARD MUHSAM: Mixed Narcosis.
2. GEORG PREISER: Diseases Belonging to Gynecology as Well as Orthopedics, Important for Practice, but Very Little Known.
3. M. OPPENHEIM: Abortive and Combination Treatment of Syphilis with Salvarsan and Mercury.
4. LUDOLF SÜSSENGUTH: Importance of Examination for Viscosity of the Blood in Certain Surgical Diseases.
5. GEORGE LINZENMEIER: Hydrotheca Uteri Annialis.
6. E. OTTO: Answers Received to Letters Referring to Basedow's Disease.
7. ARTHUR SELIG: Influence of Viscum album upon the Circulation.
8. VADISLAV DOROVANSKY: Experience with Noviform.
9. A. BICKEL: Physiological Examinations into Influence of Baths upon Circulation.
10. WILLY STAEHELIN: Change in the Picture of Normal Human Blood after Use of Thyroid Substance.
11. KURT SINGER: Treatment of Pain in Babies.
12. H. BENNEKE: Changes in Brain and Cord in Infectious Diseases.

June 23, 1912.

13. C. BRUHNS: Modern Treatment of Syphilis (To be concluded).
14. C. LIEBERMEISTER: Secondary Tuberculosis.
15. C. KOCH: Treatment of Osteomalacia with Pituitary Extract.
16. ARTHUR ZIMMER: Ionization of Intestines.
17. EMMO SCHLESINGER: Röntgenoscopy in Diagnosis of Pancreatic Cysts.
18. EMERICH WIENER: Case of Gonorrheal Proctitis with Hematogenic Parenchymatous Chronic Nephritis as Sequel.
19. H. DETERMANN: Useful Light Bath for Head.
20. PAUL GRABBEY: Treatment with High Frequency Currents of Nervous and Organic Disturbances of Heart.
21. FR. HAMMER: Mendel's Law of Heredity in Man.
22. FRANZ KOBRAK: Pain in Ear and Its Diagnostic Importance.
23. R. T. JASCHEK: Treatment of Abortion.

June 30, 1912.

24. F. UMBER: Distinctive Diagnoses and Complications of Cholelithiasis.
25. C. BRUHNS: Modern Treatment of Syphilis (Concluded).
26. SIGMUND EREN: Diagnostic Notes on Vertigo.
27. LOREY: Addition to Treatment of Diphtheria, Scarlet Fever, and Purulent Processes.
28. W. WEITZ: Treatment of Pneumonia with Intravenous Injection of Neufeld-Haendel Pneumococcus Serum.
29. H. LIEBMAN and A. VON LÖNNER: Localization of Mortality of Nurslings in Berlin and Its Importance to Question of Habitation.
30. V. FRANZ: Eye of Amphibian in Mechanism of Development.

3. **Abortive Treatment of Syphilis with Salvarsan and Mercury.**—Oppenheim remarks that abortive treatment of syphilis with mercury produces poorer results than with salvarsan alone, but mercury treatment in recurrent cases of syphilis gives better results.

4. **Importance of Examination for Viscosity of the Blood in Certain Surgical Diseases.**—Süssenguth recommends such examination. He states that in appendicular inflammation a low viscosity signifies a light attack, while an increase of the viscosity is accompanied with complications; high viscosity demands a serious prognosis. The

same can be said of cholecystitis and of peritoneal infections originating from the sexual organs in women.

7. **Influence of Viscum Album upon the Circulation.**—Selig has made experiments with products from *Viscum album* upon rabbits, dogs, and cats. Intravenous injections produce a transient lowering of the blood pressure. During this stage he found that adrenalin, intersection of the tenth nerve, irritation of the central ends of this nerve, and suffocation acted in the usual way. Any peculiar effect upon respiration and the heart could not be observed.

13 and 25. **Modern Treatment of Syphilis.**—Bruhns remarks that the great importance of salvarsan in the treatment of syphilis is to be found in the fact that we are able to give with "605" a more intensive treatment than we were formerly prepared to do. He recommends the combination of mercury and salvarsan. The question whether salvarsan will make it possible to exterminate syphilis cannot at present be answered, although he thinks it is possible.

27. **Addition to Treatment of Diphtheria, Scarlet Fever, and Purulent Processes.**—Lorey states that diphtheria should be treated, not only with serum injection, but also locally, and he especially advises the gargling of the throat with a solution of diphtheria serum and physiological salt, one to 29, or with a serum diluted with carbolic acid in the strength of 0.5 per cent.; sometimes he has used a spray, and in diphtheria of the nose, swabbing with the solution; he has also used it in diphtheria of the eye. For this solution he used 400 units of serum (400 fäch). In scarlet fever he has been very successful in treating with serum necrosis of the throat, in which cases the nares are stopped up with a thick, badly smelling pus.

SEMAINE MÉDICALE

July 24, 1912.

R. DE BAIS: Radical or Partial Operation in Genital Cancer in Women.

Operating on Genital Cancer in Women.—De Bovis discusses the question of partial or total hysterectomy in cases of genital cancer, the great disadvantage of the total operation being the excessive mortality. He is inclined to believe with some thinkers that there is a cancerous predisposition in some women and also a predisposition to recurrence and metastasis. In others such predisposition does not exist, and partial operations on them are very successful. It is impossible to foretell what will be the outcome of operation in any given case.

PRAGER MEDIZINISCHE WOCHENSCHRIFT

June 13, 1912.

1. HEINRICH KISCH: Radioactivity in Balneotherapy.
2. E. PELANZ: Sodium Sulphate in Diseases of Kidney.
3. ERNST AUSTERN: Periodical Examination with Röntgen Rays in Chronic Obstruction.
4. JULIUS SCHÜTZ: Heart Symptom in Meteorism.
5. ZORKENDORFER: Composition of Most Important Mineral Springs in Marienbad.
6. A. DIETL: Analysis of Kreuzbrunnen in Marienbad.
7. MAX LEWY: Symptoms of Herz.
8. ALOIS GRIMM: Dr. August Herz.
9. MICHAEL URBAN: Goethe in Marienbad.

June 20, 1912.

10. ROBERT SALUS: Progress in Ophthalmology.
11. ALEXANDER SKUTETSKY: Serum Treatment of Epidemic of Cerebrospinal Meningitis.
12. HANS WOLLIN: Differential Diagnosis of Acute Interperitoneal Exudate in Incarcerated Intestines.

June 27, 1912.

13. C. HIRSCH: Disturbances of Eye from Observation of Solar Eclipse.
14. E. ADLER: Primary Actinomycosis of Lung.
15. EMIL KRAUS: Intravenous Injection of Strophanthine.
16. F. SMOLER: Etiology of Neuralgia of Facial Nerve.
17. FERDINAND BLOCH: Technique of Blood Examination.

1. **Radioactivity in Balneotherapeutics.**—Kisch reviews the results received from emanation treatment in balneotherapeutics. Although it is of some importance, if rightly used, and if the radioactivity is a natural product, he warns against the artificial product and against overestimation of the results to be expected.

5 and 6. **Mineral Spas in Marienbad.**—Zörkendörfer gives a graphic description of the chemical composition of the mineral bath in Marienbad; while Dietl speaks of the Kreuzbrunnen only, concerning which he gives good statistical material.

7. **Symptoms of Meteoristic Unrest and General Unrest.**—Löwy gives a very long review of the symptoms of unrest, which should be read in the original.

[As this number of the *Wochenschrift* is the convention number of the seventy-seventh annual meeting of the Association of German Physicians of Bohemia, which took place in Marienbad, nearly all articles treat of subjects referring to this renowned spa.]

11. **Serum Treatment of Epidemic of Cerebrospinal Meningitis.**—Skutetzky reports of a case of a man, twenty-one years of age, who suffered from cerebrospinal meningitis. Lumbar puncture showed a cloudy fluid in which, microscopically, plenty of leucocytes could be seen containing *Meningococcus intracellularis*. The patient received, during a period of twenty days, ten injections of Paltauf's meningococcus serum; the convalescence was uninterrupted, and the patient was discharged as cured forty-six days after the last injection. As to the injections themselves, only at the first injection the author remarks that thirty c. c. of spinal fluid was taken away and twenty c. c. of serum was injected. Special attention is drawn to the fact that although many symptoms pointed to cerebrospinal meningitis, microscopical examination of the fluid itself made the diagnosis sure.

13. **Disturbances of the Eye from Observations of Solar Eclipse.**—Hirsch's article is based upon the detrimental effect produced by careless observation of the eclipse which took place in Europe on April 17th. Several other authors of continental Europe have reported such observations. As therapeutics offers no cure, the treatment can therefore be only symptomatic, and the author warns the public to be careful in observing solar eclipses. A combination of three glass plates, red, green, and medium gray, will protect the eye from the too strong rays, but will enable the observer to note correctly the eclipse. The author has seven cases to report.

ROUSSKY VRATCH.

April 21, 1912.

1. G. I. TURNER: In Memoriam, Joseph Lister.
2. A. A. LITZINSKY: Obstetrics and Gynecology at the Present and Problems of Near Future.
3. M. I. NEMENOV: Treatment of Fibromyoma and Uterine Hemorrhage with X Rays.
4. PR. D. RUMJANTZEF: Nephritis in Scarlet Fever.
5. A. I. ANTONOVSKY: Sterilization of Drinking Water with Small Amounts of Calcium Chloride.

5. **Calcium Chloride in Drinking Water.**—

Antonovsky established by his experiments the following facts: 1. The active agent in sterilization of water by means of calcium chloride is not the chlorine, as has been supposed, but the oxygen, calcium chloride being a double salt ($\text{Ca}(\text{ClO})_2 + \text{CaCl}_2 + 4\text{H}_2\text{O}$), in which the oxygen is given off readily and absorbed by the water. 2. A prolonged action is required to insure complete sterilization. 3. If the contact of small amounts of chloride with the bacteria is short, there is only a partial germicidal action and an inhibition of bacterial growth. 4. The virulence of the bacteria, following incomplete sterilization, is not changed. 5. The amounts of calcium chloride proposed by English and American authors (one to two milligrammes of active chlorine to the litre) are only relative and must vary with the oxidizability of the water. 6. The addition of catalytic agents (peroxide of hydrogen or potassium permanganate) increases the bactericidal action of calcium chloride. 7. In view of the bactericidal effect of even small quantities of calcium chloride, the latter should prove a valuable adjunct to the purification of water by mechanical methods.

JOURNAL OF OPHTHALMOLOGY AND OTOLARYNGOLOGY.

June, 1912.

1. G. W. MASER: Detached Retina; Surgical Treatment.
2. JOSEPH R. EASTMAN: Control of Bleeding in Brain Operations.
3. J. E. SAWTELL: Postoperative Tonsillar Hemorrhage.

3. **Postoperative Tonsillar Hemorrhage.**—Sawtell says that hemorrhage due to constitutional causes can usually be prevented by a careful examination of all suspected cases before operating, but that hemorrhage due to abnormalities of the bloodvessels cannot usually be guarded against. Notwithstanding the low percentage of fatalities, no operator should perform an extirpation of the tonsil without being well prepared for the control of the hemorrhage. Since all hemorrhage by rhexis is controlled either by thrombosis or contraction of the vessel wall, or both, crushing the vessel and the use of torsion and gentle traction with suitable forceps, will commonly control it.

DUBLIN JOURNAL OF MEDICAL SCIENCE

June, 1912.

1. WALTER C. STEVENSON: Treatment of Congenital Dislocation of Hip.
2. JAMES CRAIG: Muscular Dystrophy.
3. T. GILLMAN MOORHEAD: Teaching Anatomy.
4. J. CHARLES JOHNSON: Bacterial Symbiosis.

1. **Congenital Dislocation of the Hip.**—Stevenson urges the early treatment of congenital dislocation of the hip because like most congenital and many acquired deformities it is a condition which, unless treated efficiently, tends progressively to become more disabling as the patient grows older, while, within certain limits, the earlier it is taken in hand the easier is the treatment and the better are the results. He considers Lorenz's method the best.

2. **Muscular Dystrophy.**—Craig gives the following as the distinguishing features of the muscular dystrophies, or myopathies: Beginning in early life. A hereditary or familial history is common. The atrophy begins as a rule in the proximal portion of the limbs and in the trunk. The groups of muscles affected do not correspond with the spinal grouping of the lower motor neurons. Hypertrophy or pseudohypertrophy may be found

along with muscular atrophy. The electrical responses are diminished in proportion to the amount of muscular wasting. There is no sensory disturbance. The tendon reflexes are diminished or lost in proportion to the degree of atrophy of the muscles involved. The organic reflexes are not affected. Fibrillary tremors are not present. Craig describes six types, in all of which the progress is slow and arrest occasionally takes place. The treatment is massage, moderate exercise, and electricity, but to be successful it must be maintained for a long time.

GLASGOW MEDICAL JOURNAL.

June, 1912.

1. WILLIAM B. LEISHMAN: Antityphoid Inoculation.
2. WALKER DOWNIE: Analysis of One Hundred Consecutive Cases of Stricture of Gullet (Concluded).
3. HENRY H. GREEN: Estimation of Sugar in Urine.
4. FRIEDRICH KANGLIESSEK: Pathography of Julian Dynasty.

1. **Antityphoid Inoculation.**—Leishman deals in this article with, 1, the history of antityphoid inoculation; 2, the methods by which typhoid vaccine is prepared in the Army Medical College; 3, the questions of standardization and of dose; 4, the conditions which call for antityphoid inoculation as a prophylactic measure; and, 5, the results obtained in the past and prospects in the future. There is a difference of opinion in regard to the use of typhoid vaccine in the treatment of actual cases of enteric fever. In some quarters feeling is strongly against it, because it does not seem rational to inoculate a patient with more of the germs that are causing the disease. Yet Leishman believes this to be a very valuable means of treatment and thinks the vaccine therapy of general infections will in time prove to be of great use. He prefers a stock to an autogenous vaccine. Very small doses appear to be inefficient, so he starts with a dose of fifty millions and cautiously increases it to 100 or 150 millions.

2. **Stricture of the Gullet.**—Downie deals with the symptomatology of esophageal stenosis, the methods of examination, diagnosis, prognosis, and treatment. An analysis of the one hundred cases shows that a spasmodic stenosis with no disease of the gullet was present in twenty-four, five men of an average age of fifty years, nineteen women of an average age of thirty-six; that a fibrous stricture with no history of injury was present in twenty, nine men of an average age of forty-two, and eleven women of an average age of thirty-nine years; that a cicatricial stricture with a history of injury or ulceration was present in twenty-five, nine men of an average age of forty-two (two due to syphilis), sixteen women of an average age of thirty-eight years (nine due to syphilis); that malignant stenosis was present in twenty-eight, thirteen men, average age fifty-nine, fifteen women, average age fifty-one years; and that a congenital narrowing of the gullet was present in three, a man aged thirty-seven, and two women of an average age of twenty-four years.

JOURNAL OF LARYNGOLOGY, RHINOLOGY, AND OTOTOLOGY.

June, 1912.

1. A. LOGAN TURNER: Serum and Vaccine Therapy in Treatment of Endocranial Complications of Middle Ear Suppuration.
2. W. S. SYME: Examination of One Thousand and Fifty Skulls. Some Points of Interest in Connection with Surgery of Ear and Nose.
3. F. P. STURM: Method of Detecting Fixation of Stapes.

3. A Method of Detecting Fixation of the

Stapes. Sturm states that the method is based upon the invariable presence of paracusis in otosclerosis, and the inability to raise labyrinthine tension by exerting pressure upon a stapes which is fixed. The presence of paracusis is determined by holding a watch just beyond the distance at which it is heard, and no further. The footpiece of a loudly vibrating tuning fork of low pitch is placed over the tympanic antrum of the same side, and if paracusis is present, the tick of the watch becomes audible for a few seconds as the vibrations of the fork diminish, only to disappear again as the fork becomes inaudible. To determine the fixation of the stapes, the author injects a few minims of a ten per cent. solution of cocaine in adrenalin into the Eustachian tube through the largest sized catheter that can be inserted. A valveless rubber bag, half emptied of air, is attached to the Eustachian catheter, and the mobility of the tympanic membrane is verified by actual inspection, as the bag is alternately compressed and relaxed. A vibrating tuning fork of medium pitch is now applied to the bone over the tympanic antrum, and the rubber bag allowed to expand to its full extent. If the sound appears less, the footplate of a movable stapes has been driven into the oval window and has raised the labyrinthine pressure. If the sound appears louder, the stapes has been drawn out of the fenestra by an ankylous or stiffened malleus, producing a diminution of the tension within the labyrinth and a temporarily increased acuity of hearing. If the sound remains unaffected, or the change is scarcely perceptible, the assumption is safe that the stapes is fixed. The advantages of this method as suggested by the author are: 1. That the movements of the ossicles may be induced without obstruction of the external meatus; 2, it is possible to test both air and bone conduction and to compare one with the other under varying conditions of tympanic and labyrinthine pressure; 3, the test for paracusis is a delicate one and of special value in the very early cases; 3, it affords a valuable confirmatory method of diagnosis between otosclerosis and the conditions which simulate it.

JOURNAL OF TROPICAL MEDICINE AND HYGIENE.

June 1, 1912.

1. G. C. LOW: Cell Inclusions in Blood of Blackwater Fever and Other Tropical Diseases.
2. ALDO CASTELLANI: Cases of Fever Due Probably to *Bacillus asiaticus*.
3. L. J. COPPEDGE: Severe Case of Hookworm Infection Showing Entire Absence of Eosinophilia.
4. MATTHEW D. O'CONNELL: Meteorology of Malaria.
5. J. CAMPBELL GRAHAM: Bacillary Dysentery, Type Y, in Child. Aged Six Months.

1. **Blood Cell Inclusions in Blackwater Fever and Other Diseases.**—Low found small masses, apparently consisting of chromatin, in the white blood cells of cases of "fever" from Borneo and of pellagris from Italy, and was struck by the similarity between some of these inclusions and those already seen by Leishman in a case of blackwater fever. The centre of the inclusions was more faintly stained than their periphery, giving the impression of a ringlike structure. They occurred chiefly in the large mononuclear cells. Whether these bodies are parasites of the chlamydozoa or some other undescribed group, or are derived from changes in the nuclei or cytoplasm of the cells, cannot at present be decided.

2. **Fever Due to *Bacillus Asiaticus*.**—Castellani reports from Colombo, Ceylon, four cases of obscure fever in which, all investigations for the usual infections such as typhoid, paratyphoid, Malta fever, malaria, etc., having remained negative, a bacterium was isolated which appeared to be different from any other intestinal organism. Two varieties of the bacillus were isolated, the one occurring in two cases of long protracted, rather low, intermittent and remittent fever, and the other in two cases at first considered to be typhoid fever, but which showed severe abdominal pains. The bacilli isolated appeared to be the causative agents in these cases in view of the presence of specific agglutinins in the patient's blood during the malady, the fact that the blood did not agglutinate any other organisms, and the absence of the Asiatic bacilli from normal feces.

5. **Bacillary Dysentery.**—Graham reports a case of dysentery in which, ordinary medicinal measures failing to benefit, the patient, a child, became extremely thin and was obviously sinking slowly. Examination of the stools revealed the presence of the dysentery bacillus, type y. The serum corresponding to this type not being at hand, one c. c. of Shiga's serum was given hypodermically. The temperature fell immediately from 39° C. to 37.4° C. and remained at about 37.5° for two days. After a second injection the temperature fell to normal in forty-eight hours, and the child, previously suffering extremely from sleeplessness, at once obtained rest. A third injection of 1.5 c.c. was given. The stools showed marked improvement, and convalescence took place gradually but uninterruptedly. Graham concludes that since the Shiga serum proved so beneficial, the different types of dysentery bacillus must be nearly related, and that in case of emergency it is worth while to use the serum appropriate for one type in the treatment of disease caused by the other.

PRACTITIONER.

June, 1912.

1. THOMAS OLIVER: Hemophilia.
2. HUGH LEFT: Treatment of Some Emergencies in Urinary Surgery in General Practice.
3. P. LOCKHART MUMFERY: Nonmalignant Stricture of Rectum.
4. THEO. D. HYSLOP: Endocranial Mechanism in Health and Disease.
5. ARTHUR J. HALL: Trauma Possible Factor in Production of Disease?
6. W. FLETCHER SHAW: Treatment of Placenta Prævia.
7. JEAN DARBEL: Present State of Organotherapeutics.
8. JAMESON R. HURRY: Vicious Circle as Cause of Sudden Death.
9. J. B. FIFE: When to Operate in Permeating Mastoid Meningitis.
10. ALFRED HARRIS: Prognosis of Diptheria.
11. WILLIAM K. ANDERSON: Morphinomania Cured by Hyoscine Method.

1. **Hemophilia.**—Oliver says that it is characteristic of hemophilia that, while the bleeding is exhibited only by males, the females of the family transmit the tendency. It is exceptional for the females to bleed. He exhibits a family tree, covering several generations, which shows a high mortality rate from hemorrhage among the males, the transmission through females, and the fact that the males, though themselves bleeders, do not as a rule hand on the tendency to their children. The influence of heredity is all important. The pathology of the disease is unknown. He has not seen striking results follow administration of remedies which have been recommended. Good results have been obtained by the injection of horse serum by the

rectum, but, as he remarks, serums are peculiar products; while small doses, administered once or twice, may have the desired therapeutic effect, frequently repeated doses may induce anaphylaxis, or increased susceptibility to bleeding. As hemophilia is not exhibited by females, ovarian extract has been administered to males known to be bleeders to ward off the possibility of excessive hemorrhage when it was necessary to have a tooth extracted, but the results did not confirm the expectations.

4. **Endocranial Mechanism in Health and Disease.**—Hyslop presents an admirable paper which is very difficult to abstract. The points considered are: 1. Is the brain a generator, or merely a transmitter of energy? 2. Is the sum total of the endocranial contents capable of variation in amount, and what are the deductions from the data of comparative anatomy, embryology, pathology, and experiment? 3. By what mechanism is the balance of the endocranial contents maintained; and how far, and in what way, may defects of this mechanism affect function and nutrition of the various elements concerned? To give even a fair idea of the discussion of these points the paper would need to be almost wholly reproduced. It may be said, however, that the author does not conform to the orthodox beliefs as to the function of the nerve cells, and he is unaware of any positive proof of the supposition that the nerve cell itself in some mysterious way not only serves as a conductor, but also as a generator of impulses, and that to its internal activities may be ascribed all the phenomena of consciousness.

5. **Trauma in the Production of Disease.**—Hall concludes that trauma may be the prime factor in producing disease; that it may play a more or less important contributory part in precipitating various morbid conditions of the central nervous system, especially when an inherited or acquired neuropathic tendency is present; that it may similarly contribute to the occurrence or exacerbation of various diseases due to known microorganisms, such as tuberculosis or pneumonia, either by increasing the activity of the organism, or by reducing the resistance of the body. How far trauma can stimulate the formation or development of tumors is uncertain, but that it may do so there is considerable evidence to show.

6. **Placenta Prævia.**—Shaw contends that the best method of treatment for both mother and child is, where possible, to leave Nature alone, but the doctor must be in attendance until the case is over, as severe hemorrhage may occur at any time. If the hemorrhage is severe, manual dilatation of the cervix and extraction of the child give the best results. Internal podalic version gives excellent results to the mothers, though very bad to the children, but should always be done if the hemorrhage is severe and the practitioner not sufficiently experienced to perform full dilatation and extraction. Champetier de Ribes's bag, packing the vagina or cervix, and Cæsarean section are not recommended.

JAHRBUCH FÜR KINDERHEILKUNDE.

June, 1912.

1. F. LUST AND L. KLOEMAN: Metabolism Experiments in Barlow's Disease.
2. HOFBART FRISCH: Formamint Tablets.
3. ALBRECHT PEIPER: Malignant Embryonic Adenoma of the Liver in the First Year of Life.

4. ENRIQUE SUÑER: Etiology and Prophylaxis of Summer Diarrhea in Spain.
 5. H. NORTMANN: Review of Chemistry of Human Milk.

1. **Barlow's Disease.**—Lust and Kloeman say that the nitrogen metabolism in Barlow's disease shows no variation from the normal. The total ash metabolism is also normal except in the period of convalescence, when there is a diminished calcium retention. This observation agrees with the pathological and Röntgen findings in Barlow's disease, which show an increased amount of calcium in the osseous system during the height of this disease. (This disappears when the signs of the disease disappear.) Only one case of Barlow's disease was examined. Confirmatory reports are awaited.

2. **Formamint.**—Frisch reports his experience of five years with formamint tablets. The dose for adults is from fifteen to twenty daily, while children were given from four to eight daily. These tablets were used in all diseases of the mouth, pharynx, and larynx. They are entirely harmless and are an excellent substitute for all mouth washes and gargles, both as a deodorant and as a disinfectant. In many cases formamint tablets caused a decided drop in temperature, owing to their disinfectant properties. As a prophylactic measure they are also of great benefit.

4. **Summer Diarrhea in Spain.**—Suñer, after reviewing the literature on the subject, lays especial stress on the rôle of bacteria in causing summer diarrhea. These bacteria are largely conveyed by flies. Prophylaxis should then be employed, just as it is practised in regard to mosquitoes in malaria and yellow fever.

KLINISCHE MONATSBLÄTTER FÜR AUGENHEILKUNDE

June, 1912.

1. M. MEYERHOF: Vernal Catarrh in Trachoma, and Family Vernal Catarrh.
2. A. BOTTERI: Clinical, Experimental, and Microscopical Studies of Trachoma, Inclusion Blepharitis, and Vernal Catarrh.
3. P. KNAPP: Influence Exerted by Massage upon Tension of Normal and Glaucomatous Eyes.
4. THS. GUNNBERG: Uleus Serpens Corneae with Special Reference to Intraocular Tension.
5. E. FRICKER: Pathogenesis of Glaucoma.
6. F. TOCZYNSKI: Results of Examination of Normal and Glaucomatous Eyes with Schiøtz's Tonometer.
7. R. HESS: Contraction of Pupil during Near Vision.
8. K. MUENCH: Vermicular Contractions of Sphincter Pupillæ.
9. W. MANN: Atrophy of Iris and Epibulbar Carcinoma with Xeroderma Pigmentosum.
10. TH. CLAUSNIZER: Influence of Diathermia upon Intraocular Tension.

1. **Vernal Catarrh.**—Meyerhof says that a true mixture of trachoma and vernal catarrh is met with, which can be demonstrated both clinically and anatomically, and renders the diagnosis difficult. He considers vernal catarrh hereditary, probably through a congenital predisposition to the disease.

3. **Influence of Massage upon the Eye.**—Knapp says that massage causes a considerable decrease of the tension of a normal eye within a few minutes, and that the tension returns to normal within three quarters of an hour as a rule, although the time varies in different persons. It could not be proved that the albumin in the aqueous was increased. In acute glaucoma massage is usually inefficient, but in mild cases, and in glaucoma simplex it almost always produced a decrease of tension, which disappeared in a quarter of an hour. Its effect is more marked and more persistent in eyes that have been operated on for glaucoma, so he recommends it for an after treatment. In rare cases massage causes a slight increase of tension in glau-

coma. In a great many normal eyes the tension can be reduced by the repeated instillation of holocain.

8. **Vermiform Contractions of the Sphincter Pupillæ.**—Muench finds that the sphincter pupillæ is composed of from seventy to eighty physiological segments, each of which is supplied by a nerve twig. These segments are intimately connected, and yet have a certain independence as each receives a special stimulus from its own nerve supply. When the pupil is moderately dilated, the light weak, and the retina adapted, the movements of unrest have a marked peristaltic character, and the contraction of the sphincter is only apparently uniform, i. e., simultaneous in all segments. The apparent uniformity is simulated by the rapidity of the contraction which follows stimulation with a strong light.

MONATSSCHRIFT FÜR KINDERHEILKUNDE

June, 1912.

1. KARL STOTTE: Treatment of Diarrhea in Infants with Buttermilk.
2. THEODOR GELT: Associated Tests in Children.
3. J. A. SCHABOD: Calcium Metabolism and Rickets.
4. KARL BLOCH: Calcium and Phosphorus in Large Intestine in Infants.
5. KARL RIEDER: Excretion of Urotropin in Breast Milk.

1. **Buttermilk in Diarrhea.**—Stotte calls attention to the fact that all infants do not do equally well with the same nourishment. Some infants fail to flourish under breast milk. In regard to mixtures, or even the same mixture of cow's milk, it often happens that one child will do very well on a certain mixture, while another will be very constipated, and still another infant will have very loose stools. The reason for this is explained by the congenital variance of different infants. Constipation in infants can usually be cured by the addition of one or two carbohydrates. Diarrhea, on the other hand, is more difficult to cure. Stotte used buttermilk in cases of diarrhea with very good results. His buttermilk contained about 1.4 to 1.7 per cent. of fat. Instead of adding sugars to the buttermilk, he added flour, about fifty grammes to the quart. No cathartics are given with this buttermilk and no period of starvation is necessary. This buttermilk differs from that commonly used, in having a higher proportion of fat and also in having very little sugar, which, it is well known, causes diarrhea. In mild cases of diarrhea substituting this buttermilk feeding for one or two of the regular feedings often has the desired result. At times more buttermilk feedings must be substituted. In substituting the buttermilk feedings we should be guided by the stool. With this feeding one gets a homogeneous, grayish stool of pasty consistence. If the stools do not become good with this feeding, then casein milk or breast milk must be given; but according to Stotte's observations this is seldom necessary.

3. **Calcium in Rickets.**—Schabod says that calcium acetate and a combination of phosphorus and codliver oil causes an increased calcium retention in rickets. The phosphorus and codliver oil are given as follows: Phosphorus, 0.01; codliver oil, to make 100.0. The dose is one teaspoonful a few times daily.

5. **Urotropin in Breast Milk.**—Urotropin is excreted in the milk of nursing women, but not in great enough concentration to have either any

therapeutic effects (in mastitis) or any harmful effect upon the child.

ZEITSCHRIFT FÜR AUGENHEILKUNDE.

June, 1912.

1. HANS LEMPP: Position of Rest of Eyeball.
2. IGNAZ JASPERS: Question of Myopia.
3. A. BRUECKNER: Formation of Sympblepharon of Ulcer of Cornea.
4. RICHARD CORDS: Impairment of Vision by Rays of Sun.
5. ALEXIUS PICHLER: Findings on Autopsy in Enophthalmos Traumaticus.
6. VIKTOR WYDLY: After Images of Dazzling and Their Relation to the Erythropsia Produced in the Same Manner (Concluded).

1. **The Position of Rest of the Eyeball.**—Lempp contends as the result of his investigations that orthophoria is only one of the physiological positions of rest of the eyeball. He found it present in only 25.5 per cent. of the cases he examined, while esophoria was present in 40.5 per cent., and exophoria in thirty-four per cent. No dependence on the refraction or on the age could be made out, but it rather appeared as though the position of rest depended on accidental nervous, muscular, and mechanical factors that favored sometimes one, sometimes another position.

2. **Myopia.**—Jaspers draws his conclusions from his examination of 37,484 patients, among whom he found 2,998 myopes, 7.99 per cent. Anisometropia of two diopters or more was present in 496, 16.5 per cent. The frequency of myopia decreases with its height. The highest degrees occur more often in women than in men. The lower degrees are by far more common among people accustomed to near work, the high degrees among those who do not do near work. Of the complications, *conus* is more common among men than women; all the others are more frequent in women, and, with the exception of divergent strabismus and *conus*, among those who do not do near work. Vision decreases as the degree of myopia increases. The power of vision is considerably less in women than in men. Those who do not do near work have the worse vision, especially in the higher degrees.

ZEITSCHRIFT FÜR UROLOGIE

Special number, 1912.

(German Urological Congress, held at Vienna, September 15, 1911.)
ISRAEL: Results of Nephrectomy for Renal Tuberculosis.

Renal Tuberculosis.—Israel bases his conclusions on a review of 1,023 cases from the literature and 170 personal observations (this paper, frequently quoted and reviewed, was published in *Folia Urologica* for September, 1911). Casper, of Berlin, called special attention to the necessity of recognizing bilateral tuberculosis. In all cases the specimen obtained by the ureteral catheter should be inoculated into guineapigs. Pus in the catheterized specimens from the supposedly intact kidney does not necessarily mean involvement of that organ; a simple pyelonephritis may be present. Clear and apparently normal urine may contain tubercle bacilli. Mirabeau reported twenty-six personal cases; none of these cases ended fatally after operation. He does not think functional tests of much value, but believes that a blood pressure of 130 mm. indicates renal insufficiency. He does not remove the diseased ureter and has not in a single instance had tuberculous infection of the wound. In but four cases did the bladder completely heal. In

many cases tuberculosis of the bladder remains and there is a tendency to colon bacillus infection and permanently purulent urine. Von Frisch, of Vienna, reported 100 nephrectomies performed from 1903 to 1911. There was a total mortality of ten per cent. The mortality of the first fifty cases was fourteen per cent. and the last fifty, six per cent. Zuckerkandl, of Vienna, reported 104 cases of nephrectomy for kidney tuberculosis up to the year 1910. His mortality is 19.2 per cent. Of the eighty-four patients who survived, forty-five were perfectly cured; they had neither subjective nor objective symptoms, the urine being free and clear from all pathological elements. Most of the patients who were improved presented different degrees of bladder involvement and genital complications, some hematuria, some pyuria. Zuckerkandl believes that advanced infection of the bladder can heal only in the very rarest instances. Israel is opposed to a preliminary trial of tuberculin treatment, and believes that immediate operation is indicated as soon as unilateral tuberculosis is diagnosed. Asakura, of Tokio, reported seventy cases in not one of which a mistake of diagnosis had been made. Nephrectomy is contraindicated in unilateral tuberculosis when advanced tuberculosis elsewhere in the body exists. A. Boeckel, of Nancy, reported the immediate and remote results of fifty-seven nephrectomies for kidney tuberculosis. The transperitoneal incision was employed once; the lumbar incision fifty-six times. Total extirpation of the ureter is dangerous and unnecessary. Beck's bismuth paste gave good results in tuberculous fistula. Four patients who were temporarily improved gave evidence of tuberculosis in the second kidney. Forty-one patients were completely cured or much improved. All these patients gained in weight from five to twenty kilogrammes. The urine became clear in twenty-four out of forty-one cases. In three cases, however, it took one and one half year to clear the urine. In nine of these cases the bladder urine was positive for tubercle bacilli by animal injection. Bloch describes a rapid method of discovering the presence of tubercle bacilli. He proposed, in 1907, injection of urine into the inguinal glands which had been previously traumatized. The method frequently failed because of the suppuration caused by the presence of other bacteria. Recently Bloch has treated the urine with a four per cent. solution of antiformin. Histological examination of extirpated glands is unnecessary. An easy method is to treat the glands with a fifteen to twenty per cent. antiformin fluid until a homogeneous milky fluid results, which can be centrifuged. In smears of this, tubercle bacilli can be found. Bacrach gives a résumé of the tuberculin treatment of genitourinary tuberculosis as used in Zuckerkandl's clinic. Tuberculin therapy should not be used in operable cases of renal tuberculosis. Early cases, those in which tubercle bacilli are present and in which there is no pus in the urine, are suitable for tuberculin treatment. After nephrectomy if there are still foci in the genitourinary tract tuberculin is used. The action of tuberculin manifests itself in an improved general condition and increased body weight.

Proceedings of Societies.

AMERICAN GYNECOLOGICAL SOCIETY.

Thirty-seventh Annual Meeting, Held at Baltimore, Maryland, May 28, 29, and 30, 1912.

The President, Dr. HOWARD A. KELLY, of Baltimore, in the Chair.

Menstruation without Ovaries.—Dr. PALMER FINDLEY, of Omaha, reported a case in which both ovaries had been removed and the menstrual periods proceeded to recur at regular twenty-eight day periods for one year and a half, at which time he opened the abdominal cavity, resected an adherent omentum from the fundus of the uterus, and broke up numerous pelvic adhesions. He was then unable to find any trace of ovarian tissue. Seven months had intervened since this operation, and the patient continued to menstruate at regular intervals of twenty-eight days and in the usual amount. The findings in this case were almost identical with those in the case reported by Dr. George Gellhorn, in 1907. The difference in the two cases was that the menstrual periods ceased to recur after Doctor Gellhorn excised the adherent omentum; while in the author's case the menstrual periods persisted. Gellhorn believed that the ovaries were not essential to menstruation, and emphasized the important factor of added blood supply to adhesions to the uterus and the cyclic influence in determining the persistence of menstruation after the removal of both anatomical ovaries.

Dr. J. CLARENCE WEBSTER, of Chicago, thought that all had had the experience of hemorrhage occurring after the removal of the ovaries; that they had even had the experience of hemorrhage occurring from the cervix after the removal of the body of the uterus. He believed that a considerable proportion of these cases in which the hemorrhage was irregular, might be explained either by the vascular degenerations in the uterine or ovarian arteries, or in both, or in varicose veins of the broad ligaments. He could recall only one case in his experience where a regular flow suggestive of menstruation occurred after castration. He did not believe that Gellhorn's suggestion of adhesions was explanatory in such cases. He thought the retention after the operation either of portions of the main ovary of the stump, or what was more likely, where good surgery was carried out, the existence of small portions (perhaps not even macroscopic) in the broad ligaments.

Dr. HENRY T. BYFORD, of Chicago, emphasized the importance of the testimony of the patients. He recalled a patient in whom he removed the uterus and ovaries, and the woman said she continued to menstruate, but upon careful examination he found it was not exactly every month that this discharge began. The woman would have a little discharge between times. He told her to lie down a good deal, and if the discharge continued she was to return to see him. She would have a discharge of blood at one time at the end of three and a half weeks, at another time at the end of four weeks, and she was told to pay little or no attention to the little flow between times. There were a great many cases that were not menstrual in type, that

is, they had not the menstrual periodicity. With regard to adhesions, he found in nearly all of his cases there were adhesions. He thought these adhesions could produce a discharge of blood. All had had cases of adhesions in which the chief symptom was hemorrhage. There was nothing more established in his mind than that adhesions interfered with the circulation by increasing it or damping it up, thus producing a bloody flow from the uterus, but this was not strictly menstruation.

Dr. J. M. BALDY, of Philadelphia, said he would like to emphasize, not only the statement of the patient, but the statement of the doctor as to what was menstruation. The statement of the patient as regards menstruation was unreliable. He called attention to the statement, for instance, of a notable New York surgeon who transplanted ovarian tissue and called the discharge that followed menstruation. It was a mere show of blood which disappeared in a short time. It was not menstruation at all in the strict sense in which menstruation was recognized. When these patients told the gynecologist how long they menstruated, or how long they had stopped menstruating, it was found they all stopped for an unlimited length of time. He had never known a case go more than a year and a half at the outside; in a few cases the patients might have gone longer than that. They were not cases in which there were adhesions, and there was no considerable portion of ovarian tissue left to account for the continued menstruation, if it were a real menstruation in the individual case.

Dr. FRANK T. ANDREWS, of Chicago, said that four girls were referred to him by a physician from Wichita, Kansas, who had operated upon one girl after marriage for a large ovarian tumor, removing her ovaries. Another girl after some years of treatment he had likewise operated upon, and removed her ovaries, and she had a normal change of life, with a normal result in that case, namely, stoppage of the flow. Then the family moved to Chicago and here were two girls suffering so severely with dysmenorrhea that, after caring for them and striving to avoid operation for several years, after having the best advice he could get from his gynecological and neurological friends, he decided to operate upon one of them. Finally he did so, and she made a normal recovery. The first one operated upon improved very much for about nine months, but she kept on flowing, apparently normally. The operation consisted in removing one ovary, leaving one ovary, and removing both tubes. After the dysmenorrhea returned, upon examination he found, a year and a half after the first operation, an ovarian tumor had developed in the remaining ovary. He operated and removed that, and in carefully looking over the field, discovered there was a little stump that for some reason he had not taken out, on one side. He had not cut in and taken the whole tube out from the cornu of the uterus. So he removed that. The other one was thoroughly removed. He removed the tumor and she continued to menstruate. About three or four years later he removed the bulk of the uterus, leaving the cervix. The woman still continued to menstruate, and for some four years, from that time until now, this woman went through exactly the same nervous

disturbances every month that she used to go through while menstruating, but she had ceased to flow.

Dr. EDWARD P. DAVIS, of Philadelphia, pointed out that recent studies to settle the vexed question of the time of labor threw light upon the subject under discussion. It was found that the physiological life of woman consisted in periods of accumulation of blood, terminating in increased pulse tension and in hemorrhage; that this condition was independent of the presence of genital organs, that is, the genital organs might be removed and this established physiological habit of woman still continued. In some cases the persistence of this discharge and increased pulse tension were the results of disorder of the ductless glands, and some cases were improved by the administration of thyroid extract or pituitin or adrenalin. He thought this would explain some of the cases in the discussion where the absence of genital organs by operation had been followed by continued hemorrhage.

Dr. CLEMENT CLEVELAND, of New York, said he was reminded of a case he had some years ago where it was reported that both ovaries had been removed, and still the woman menstruated. It was a case in the Woman's Hospital in New York, and his confrère, who had done the operation, had died in the meantime. The patient, therefore, came into his service, and he looked up the history. There was a miscarriage at the fourth month. The history showed that both ovaries had been entirely removed. He had very little faith in the functional activity of supernumerary ovaries, and he came to the conclusion that in most cases the discharge was due to a small portion of the ovary having been left behind. He was very positive it was in his case.

Dr. SETH C. GORDON, of Portland, Maine, said he had reported two cases where pregnancy took place after as careful a removal of both ovaries as possible. One of these cases occurred in the practice of Doctor Chadwick, of Boston, who had assured him that he was certain he removed every particle of the ovary, and Doctor Gordon felt just as certain that he did likewise in his case, and yet both women bore one child each, about a year and a half after the operation. He removed the ovaries of a young woman and she still continued to menstruate. Two years afterward he removed the uterus supravaginally, and she still continued to menstruate. Two years later he removed the cervix and that stopped the menstruation, but menstruation was absolutely regular during the time that the cervix remained. So he believed that a physiological congestion actually occurred and that accounted for the regular menstrual period.

Chronic Cystitis of the Trigonum and the Vesical Neck.—Dr. EDGAR GARCEAU, of Boston, said that this condition was frequently incorrectly diagnosed as irritable bladder, or a neurosis of the bladder, etc. He referred to the significance of vesical psychoses. Neurasthenia was the consequence of obscure cystitis and not the cause of vesical symptoms. A clear urine with a red trigonum might be symptomatic of severe cystitis. The absence of pus and blood did not exclude subepithelial cystitis. The cystoscopic appearances were referred to. There were two varieties of cystitis:

One in which there was nothing to be seen but a red trigonum, and this he called subepithelial cystitis, and the other in which there were marked pathological changes. Chronic cystitis of the trigonum and vesical neck was always ushered in by frequent micturition. The writer was sure from long observation of these cases that the disease often started as a simple hyperemia of the trigonum of the bladder, which had taken its origin in consequence of hyperemia of the pelvis which was due to some pelvic disease, and that the first symptoms were those usually experienced with vesical hyperemia. Perhaps the most serious feature of the disease was its long duration which entailed a severe degree of neurasthenia and reduced the patient to a pitiable state. In the cases in which the disease was submucous in character without superficial lesions, local treatment was not only of no avail, but harmful. A vaginal cystotomy must be performed and the top layer of the trigonum dissected or curetted off through the diseased tissue.

(To be continued.)

Letters to the Editor.

THE OPERATIVE FIXATION OF FRACTURES.

PORT ARTHUR, ONT., July 23, 1912.

To the Editor:

In a communication published in the *Annals of Surgery*, for July, 1912, Dr. Howard Lilienthal describes a method of operative fixation of fractures, which differs in no essential feature from the method I advocated in the *JOURNAL* for May 13, 1911. To this paper Doctor Lilienthal has been so good as to refer, not however, with sufficient accuracy; and accuracy in matters of this kind is something which the humblest of us may have the boldness to expect.

Analysis of the following statements, four in number, from Doctor Lilienthal's paper will demonstrate my meaning. He says: 1. "The method described by Leonard Freeman in 1904 . . . gave me a suggestive hint."

2. "Parkhill in 1898 and Lambotte in 1907 wrote on this subject."

3. "Taylor, of Port Arthur, Ontario, published a method of fixation somewhat similar to that of Freeman."

4. "During the last year I have made trial of a modification of these methods in six fractures of long bones."

Considering these statements in order:

1. It is hardly conceivable that Freeman's method first published in 1904 should furnish a "suggestive hint" of the device described in Doctor Lilienthal's paper of 1912, in view of the fact of my publication in 1911. Perusal of the papers in question should render this point clear.

2. That Parkhill and Lambotte have written on this subject is admitted. The quotation is given merely to preserve the context.

3. Admittedly my method is similar to Freeman's to this extent, viz., that four screws that penetrate the bone are connected up outside the skin. But here the likeness ends, and here a difference, not of

detail but of principle distinguishes my device from his. This principle is new. Its outstanding feature is this: That a permanent grasp of each bone fragment may be taken separately, irrespective of the coaptation, coaptation being afterward effected, and fixation secured, by agencies outside the skin, consisting of a combination of steel girders and some plastic material that has the faculty of setting. With Freeman's method, on the other hand, the four screws must be driven in line on the adjusted bone. They must be driven in perfect alignment, a matter of some difficulty. If they are not accurately placed the application of the clamps will distort the adjustment in the effort to render it secure. Therefore it is, that I contend that my method is not only not similar to Doctor Freeman's, but that it differs markedly from it, and that this difference involves a new principle, resulting in greater accuracy and facility of technique.

Granted then, as I think it will be, that my device is distinguishable from Doctor Freeman's, it is not so clear wherein the method employed by Doctor Lilienthal is distinguishable from mine. At all events, the same measure of similitude that applied the word "similar" to the former must permit the use of "identical" in connection with the latter.

4. Last, for Doctor Lilienthal to designate what he describes as *his* modification of *several* methods, is absolutely incorrect.

In a letter to the editor of recent date, Doctor Lilienthal says, "It is hardly worth while to bother about priority, unless the matter concerns credit for the discovery of some new principle." It is precisely for this reason that I wish to have the facts established regarding priority in this case.

Since my publication disclosing the device in question I have amplified the idea and have had an apparatus constructed embodying two additional principles not hitherto applied to the treatment of fractures. This was discussed theoretically in the JOURNAL for September 9, 1911. Since then I have at various times labored to harness theory to the vehicle of practice. Worked out along practical lines and studiously combined, it is my belief that these principles are ones to be conjured with to the betterment of this branch of surgery. It is my purpose shortly to disclose the most approved form of the apparatus which so far I have been able to devise.

What I wish to intimate here is that this "gimlet method" which Doctor Lilienthal employs belongs in point of priority to myself, whether gimlets be used, or screws with cross pieces, or whether the cross pieces be dispensed with. It constitutes, moreover, the first word on the subject of a new method of treating fractures. This point, I am as confident that Doctor Lilienthal will concede to me, as I am confident that his failure to have done so, to which I have directed his attention, is to be regarded rather as an inadvertency than as pathognomonic of design! Such being the case, I am gratified to know that he has found the method valuable in certain cases. I have also to confess my indebtedness to him for his recent article advocating its use and the accompanying cuts which serve to illustrate it.

WALTER H. TAYLOR, M. D.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Gould and Pyle's *Cyclopedia of Practical Medicine and Surgery. With Particular Reference to Diagnosis and Treatment.* Second Edition, Revised and Enlarged. By R. J. E. Scott, M. A., B. C. L., M. D., New York. In Two Volumes. Volume I. Abasia—Jury Mast; Volume II. Kakké—Zoster. With Six Hundred and Fifty-three Illustrations. Philadelphia: P. Blakiston's Son & Co., 1912. (Price, \$14.)

The former editors of this work, as well as the publishers, are to be congratulated, not only on the admirable way in which their ideas have been carried out in this new edition, but also on the numerous improvements and valuable additions to the original text. We may say that it by some chance a practitioner had to be limited to one book of reference, he would be fairly well equipped for many an emergency, as well as for his office and visiting routine, were this the book. The new articles are numerous and extremely well done and comprise not only the recent discoveries in medicine, but many that should have found place in the original cyclopaedia. The illustrations have been increased in number and artistic excellence, and a notable feature is the amount of information given in tabular form, most useful for quick reference. Cross references are frequent and aid the physician in finding what he wants without undue loss of time. Throughout, the English is admirable, the editor having avoided the temptation to abbreviate at the risk of obscuring the sense, and there is a pleasing absence of modern medical slang. We wish we could say as much for the spelling, which is of the clipped variety that, to the old fashioned eye, confers a convictlike appearance on many a familiar word. The elision of the diphthong has even been unjustifiably extended to words in Latin context, as in *Pyorrhoea alveolaris*, where the noun appears as *pyorrhoea*. To the average reader, however, these will not be blemishes and no reference would have been made to them were it not for the high standard of excellence otherwise maintained. There are one or two somewhat optimistic statements, e. g., that *Combretum sundiacum* has effected a permanent cure of the heroine habit.

The general practitioner, for whom the work is expressly designed, will be much pleased with the space devoted to therapeutics and the manner in which that important subject is handled. No department of treatment is neglected and prescriptions are many and useful. As to surgery, the data concerning the various operations are ample for the reasonably well informed man. The illustrations are excellent and the venerable stock cuts of a former day have been cast aside. In a work to which Doctor Gould's name is still attached, we expected at least a mention of the fused bifocal lens.

Lateral Curvature of the Spine and Round Shoulders. By ROBERT W. LOVETT, M. D., Boston, Assistant Professor of Orthopedic Surgery, Harvard Medical School, Associate Surgeon to the Children's Hospital, Boston, etc. Second Edition, Revised and Enlarged. With 171 Illustrations. Philadelphia: P. Blakiston's Son & Co., 1912. Pp. xi-192. (Price, \$1.75.)

The author has found it necessary to rewrite many parts of his first edition to keep in pace with the progress that has been made in scoliosis in the last few years. A new chapter has been added on The Relation of Scoliosis to School Life, in recognition of the extensive German studies upon the subject.

Lovett has very skillfully avoided extensive technicality in order to make the monograph valuable to other than medical readers. It is a recognition of the fact that scoliosis receives consideration very frequently at the hands of the visiting nurses in schools or at the hands of the instructress in physical training. Lovett's very extensive clinical studies in the Children's Hospital of Boston, as well as in Harvard University, have enabled him to appreciate the importance of definite knowledge of the etiology and the insidious progress of this deformity. He has with unusual clearness presented the subject in a most readable and attractive manner that cannot help being a safe guide to all who are thrown in contact with growing

children in their school life. Much of the book is devoted to a consideration of the prevention of occurrence as well as the prevention of progress. The subject of correction of ultimate bone changes in the severe types of scoliosis is thoughtfully presented. Every feature of the book is worthy of most careful consideration by general practitioners as well as those whose experience lies mainly with the growing child.

Principles of Anatomy. The Abdomen Proper Described and Illustrated by Text and Plates. By WILLIAM CUTHBERT MORTON, M. A., M. D. (Edin.). New York: Reiman Company, 1911. Pp. xv-174. (Price, \$12.)

This work consists of two parts, the textbook on the Principles of Anatomy, and the Atlas. The latter consists of a number of plates arranged in sequence covering the various regions of the body. The first group of plates which are contained in a large cardboard envelope, includes the abdomen proper, abdominal wall, cavity and contents, roof, and posterior wall. The cardboard envelope has a transparent top through which one plate can be studied at a time. The textbook refers to the atlas and is descriptive of what is seen there. The book is suited chiefly to advanced students of anatomy and to practitioners who wish to review their anatomy without dissection. It fulfills the combined function of a good textbook of anatomy and good plates. The textbook is very concise and gives only the essential facts necessary for an understanding of the plates. The latter are beautifully drawn and are not obscured by names. One is struck by the evidences of patient effort expended upon the drawings. The author states very modestly that "should the reception accorded the present work warrant it he will be encouraged to apply his method to the other parts of the body at some future time." The work, in short, is a variation of the method of studying anatomy by means of plates supplemented by a text. The variation consists in the preparation of plates which can be studied by separate inspection of each front and back plate by simultaneous inspection, by transillumination, and by combined inspection by means of cut out leaves which give, for example, the respective positions of various organs. Finally, all the plates can be correlated to form a complete presentation of a normal body. The practicability of this method of studying and reviewing anatomy would require a testing of the work by actual trial. The scheme is certainly an ingenious one and it is to be hoped that the author will be encouraged to extend it to the other regions of the body.

No advanced student of anatomy or surgeon could fail to receive profit from a careful and painstaking study of this work. As a review it largely takes the place of dissection.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, yellow fever, plague, and smallpox were reported to the surgeon general of the United States Public Health and Marine Hospital Service during the week ending August 2, 1912:

CHOLERA—FOREIGN: India, May 20-June 22, 991 cases, 825 deaths; (Bombay), epidemic, confined to natives; Indo-China, June 4-10, 20 cases, 23 deaths; Russia (Vitebsk), July 29, 2 cases, 1 death; Straits Settlements, June 2-8, 4 cases, 4 deaths.

YELLOW FEVER—FOREIGN: Brazil, May 31-June 6, 3 deaths; Chile, May 16-June 17, 25 cases, 110 deaths; Mexico, July 23, 1 case, 1 death; Venezuela, June 1-30, 1 death.

PLAGUE—INSULAR: Philippine Islands (Manila), June 14-18, 1 case, 1 death; Porto Rico (San Juan), July 22-29, 2 cases, (Sancti Spiritus), July 23-26, 1 case.

PLAGUE—FOREIGN: Cuba (Havana), July 23-27, 1 death; Egypt, April 23-July 2, 113 cases, 99 deaths; Indo-China, May 26-June 21, 47 cases, 101 deaths; Indo-China, June 4-10, 1 case; Java, June 9-15, 14 cases, 10 deaths; South Africa (Durban), June 15-21, 1 case, 1 death; Straits Settlements, June 28, 4 cases, 3 deaths; Venezuela (Caracas), June 1-30, 2 cases, 2 deaths.

SMALLPOX—UNITED STATES: Illinois, July 1-30, 81 cases; Oklahoma, April 1-30, 98 cases; May 1-31, 100 cases; North Carolina, June 1-30, 86 cases; Texas, April 1-30, 37 cases, 22 deaths; Utah, June 1-30, 127 cases, 2 deaths; Wisconsin, June 1-30, 24 cases.

SMALLPOX—FOREIGN: Canada, July 1-29, 9 cases; France (Paris), July 1-7, 1 case; India, May 22-June 22, 34 cases, 40 deaths; Italy, July 1-13, 5 cases, 1 death; Indo-China, July 9-13, 6 cases, 2 deaths; Mexico, July 1-30, 3 cases, 10 deaths; Portugal (Lisbon), July 1-30, 1 case; Russia, May 10-June 20, 32 cases, 7 deaths; Spain, June 1-7, 6, 10 cases, 6 deaths; Straits Settlements, June 2-8, 2 cases, 1 death; Tientsin (Peking), July 1-7, 25 cases, (Constantinople), July 1-7, 9 deaths.

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Public Health and Marine Hospital Service for the fourteen days ending July 31, 1912:

Anderson, J. F., Passed Assistant Surgeon. Directed to proceed to New York, N. Y., for consultation with the health authorities relative to the technique for the bacteriological examination of rodents; granted leave of absence for one day, July 27, 1912, under paragraph 189, Service Regulations. **Blanchard, J. F.**, Acting Assistant Surgeon. Granted one day's leave of absence, without pay, July 5, 1912. **Boggess, J. S.**, Passed Assistant Surgeon. Relieved from duty at the Marine Hospital, Chicago, and from duty in the collection of data in regard to the pollution of the Missouri River and its tributaries and directed to proceed to Washington, D. C., and report to the director of the Hygienic Laboratory for duty; granted twenty days' leave of absence en route to station. **Chapin, C. W.**, Passed Assistant Surgeon. Directed to report to the director of the Hygienic Laboratory, Washington, D. C., for temporary duty. **Clark, T.**, Surgeon. Detailed to attend, without expense to the service, the meeting of the Minnesota State Medical Association at Duluth, Minn., August 14 and 15, 1912. **Conter, A. E.**, Acting Assistant Surgeon. Granted ten days' leave of absence, without pay, from July 16, 1912. **Crepin, H. E.**, Acting Assistant Surgeon. Granted fourteen days' leave of absence, without pay, from July 18, 1912. **Elfers, J. C.**, Acting Assistant Surgeon. Granted thirty days' leave of absence, without pay, from July 22, 1912. **Friedman, H. M.**, Acting Assistant Surgeon. Granted twenty-eight days' leave of absence from August 1, 1912. **Goldberger, Joseph**, Passed Assistant Surgeon. Directed to proceed to New York, N. Y., for conference with the health commissioner of the City of New York relative to the laboratory examination of rodents for bubonic plague. **Gwyn, M. K.**, Passed Assistant Surgeon. Directed to proceed to Asbury Park, N. J., for the purpose of making the physical examination of keepers and surfmen of the Life Saving Service. **Herring, R. A.**, Passed Assistant Surgeon. Directed to proceed to Washington, D. C., and report to the director of the Hygienic Laboratory for temporary duty. **Lavinder, C. H.**, Passed Assistant Surgeon. Leave of absence for fifteen days from July 16, 1912, amended to read "fifteen days of absence from July 21, 1912." **Lockett, W. R.**, Acting Assistant Surgeon. Granted four days' leave of absence from July 6, 1912, under paragraph 210, Service Regulations; granted fifteen days' leave of absence from July 16, 1912. **Osmers, William**, Acting Assistant Surgeon. Granted thirty days' leave of absence, without pay, from July 16, 1912. **Sanborn, C. F.**, Acting Assistant Surgeon. Granted eleven days' leave of absence, without pay, from June 28, 1912. **Schug, F. J.**, Acting Assistant Surgeon. Granted fifteen days' leave of absence, without pay, from July 27, 1912. **Stimpson, W. G.**, Surgeon. Directed to proceed to Tuckerton and Atlantic City, N. J., for the purpose of making the physical examination of keepers and surfmen of the Life Saving Service. **Tappan, J. W.**, Acting Assistant Surgeon. Directed to proceed to Del Rio and Eagle Pass, Texas, to adjust discrepancy in trachoma diagnosis. **Walsh, W. H.**, Acting Assistant Surgeon. Granted two months' leave of absence, without pay, from July 15, 1912. **Weldon, W. A.**, Acting Assistant Surgeon. Granted one month's leave of absence, without pay, from August 1, 1912. **Werthebaker, C. P.**, Surgeon. Directed to proceed to Ocean City, Md., Chincoteague and Wachapreague, Va., for the purpose of making the physical examination of keepers and surfmen of the Life Saving Service. **Williams, L. L.**, Surgeon. Granted one month's leave of absence on account of sickness, from July 23, 1912. **Winter, W. S., Jr.**, Acting Assistant Surgeon. Directed to proceed to Sabine, Tex., for the examination of an alien arriving on steamer *Aras*. **Works, B. O.**, Acting Assistant Surgeon. Granted four days' extension of annual leave, on account of sickness, from June 22, 1912.

Army Intelligence:

Official list of changes in the stations and duties of offi-

cers serving in the Medical Corps of the United States Army for the week ending August 3, 1912:

Bailey, Edward, First Lieutenant, Medical Reserve Corps. Resignation accepted to take effect September 8, 1912. **Bailey**, Howard H., Captain, Medical Corps. Relieved from duty at Fort Myer, Va., to take effect upon completion of his present field service, and will proceed to Fort D. A. Russell, Wyo., for duty. **Baker**, David, Major, Medical Corps. Granted leave of absence for one month. **Bevans**, James L., Captain, Medical Corps. Ordered to report on September 16, 1912, to Lieutenant Colonel J. D. Glennan, Medical Corps, Letterman General Hospital, San Francisco, California, for examination for promotion. **Billingslea**, C. C., Captain, Medical Corps. Relieved from duty at Columbus Barracks, Ohio, to take effect about September 15, 1912, and will proceed to Chicago, Ill., and report to Commanding General, Central Division, for duty as attending surgeon at Chicago, relieving Captain Perry L. Boyer; Captain Boyer, upon being thus relieved, will proceed to Madison Barracks, N. Y., for duty and to relieve Harry S. Purnell; Captain Purnell, upon being relieved, will proceed to Fort Du Pont, Del., for duty, relieving Major E. H. Hartnett; Major Hartnett, upon being relieved, will proceed to Fort Robinson, Neb., for duty. **Brechemin**, Louis, Jr., Major, Medical Corps; Qualls, Guy L., Lieutenant, Medical Corps; Trinder, John H., Lieutenant, Medical Corps. Ordered to duty with troops during manœuvre campaign in eastern Kansas, August 19 to 28, 1912. **Connor**, C. H., Captain, Medical Corps. Ordered to duty with the 26th Infantry Camp of Instruction, near Ludington, Michigan, August 14 to 23, 1912. **Craft**, E. D., Lieutenant, relieved from duty at Walter Reed General Hospital, Takoma Park, D. C., and will proceed to Fort Du Pont, Del., for duty. **Duennner**, Robert H., First Lieutenant, Medical Reserve Corps. Ordered to active service and assigned to duty at Fort Oglethorpe, Ga. **Fielden**, John S. C., Jr., First Lieutenant, Medical Reserve Corps. Ordered to active duty and directed to report in person to the Surgeon General, United States Army, for duty. **Ford**, Joseph H., Major, Medical Corps. Left Camp E. S. Otis, Canal Zone, en route to the United States on sick leave of absence. **Foucar**, F. H., Lieutenant, Medical Corps. Relieved from duty at Fort Du Pont, Del., to take effect upon his return from the manœuvres about August 28, 1912, and will proceed to the Army and Navy General Hospital, Hot Springs, Ark., for duty, relieving Captain Nelson Gapen; Captain Gapen upon being thus relieved will proceed to Boston, Mass., for duty as attending surgeon in that city. **Hardaway**, R. M., Lieutenant, Medical Corps. Relieved from temporary duty on transport *Dix* and will resume his station and duties at Fort Lawton, Washington. **Holland**, J. H., Lieutenant, Medical Corps. Left Fort Douglas, Utah, for duty in field with 20th Infantry. **Ingold**, John G., Lieutenant, Medical Corps. Will, upon completion of field duties at Helena, Mont., proceed to Fort Huachuca, Arizona, for temporary duty. **Jones**, E. C., Lieutenant, Medical Corps. Relieved from duty at Fort D. A. Russell, Wyo., to take effect upon completion of his present field service, and will proceed to Columbus Barracks, Ohio, for duty. **Kerr**, Robert W., Captain, Medical Corps. Relieved from duty at Fort D. A. Russell, Wyo., to take effect upon completion of his present field service, and will proceed to Columbus Barracks, Ohio, for duty. **Love**, Joseph W., First Lieutenant, Medical Reserve Corps. Relieved from duty in Philippines Division; granted leave of absence for two months and fourteen days, to take effect upon arrival home. **Mabee**, J. L., Captain, Medical Corps. Relieved from duty at Fort Huachuca, Arizona, to take effect upon expiration of leave heretofore granted him, and will proceed to the Letterman General Hospital, San Francisco, Cal., for duty. **Mitchell**, Leopold, Lieutenant, Medical Corps. Relieved from duty at Fort Lawton, Washington, and assigned to duty in the Army Transport Service with station at Seattle. **Moncrief**, William H., Captain, Medical Corps. Relieved from duty at Fort Leavenworth, Kansas, to take effect on or about September 1st. **Munson**, E. L., Major, Medical Corps. Will repair to Washington, D. C., and report to the Surgeon General, for consultation. **de Niedman**, William F., First Lieutenant, Medical Reserve Corps. Relieved from duty in the Phil-

ippines Division and ordered to proceed to his home; granted leave of absence for three months and sixteen days to take effect upon arrival home. **Phalen**, James M., Captain, Medical Corps. Ordered to duty in connection with Connecticut Manœuvre Campaign, August 1, 1912. **Russell**, E. F., Major, Medical Corps. Granted thirty days' leave of absence. **Sheep**, William L., Lieutenant, Medical Corps. Relieved from duty at Fort Ethan Allen, Vt., to take effect upon his return to that post from West Point, N. Y., and will then proceed to the Letterman General Hospital, Presidio of San Francisco, California, for duty; ordered to Camp Derby, Conn., during manœuvre campaign. **Slater**, Ernest F., First Lieutenant, Medical Reserve Corps. Resignation accepted to take effect August 20, 1912. **Williams**, Allie W., Captain, Medical Corps. Ordered to duty in connection with Connecticut Manœuvre Campaign, August 1st. Ordered to report, September 16, 1912, to Colonel H. P. Birmingham, Medical Corps, President Examining Board, at Army Medical School, Washington, D. C., for examination for promotion.

Births, Marriages, and Deaths.

Born.

Fletcher.—In Cotabato, Mindanao, P. I., on Tuesday, June 11th, to First Lieutenant John P. Fletcher, Medical Corps of the United States Army, and Mrs. Fletcher, a son. **Lewis**.—In Salt Lake City, Utah, on Monday, July 22d, to Dr. D. H. Lewis and Mrs. Lewis, a son.

Married.

Armstrong—Bowman.—In Union Place, N. J., on Wednesday, July 31st, Dr. George C. Armstrong, of Union Hills, and Miss Anna C. Bowman. **Herzog—Doerner**.—In Cumberland, Md., on Tuesday, July 30th, Dr. B. Philip Herzog, of Baltimore, and Miss Lucille Doerner. **Scednak—Joseph**.—In Mount Carmel, Pa., on Thursday, August 1st, Dr. F. J. Scednak, of Scranton, and Miss Mary Joseph. **Smith—De Spain**.—In Seattle, Wash., on Wednesday, July 17th, Dr. George R. Smith and Miss Jessie De Spain.

Died.

Atlee.—In Chattanooga, Tenn., on Wednesday, July 24th, Dr. John L. Atlee, aged eighty years. **Atwood**.—In Galena, Nebraska, on Thursday, July 25th, Dr. Henry Smith Atwood, aged eighty-four years. **Bassett**.—In New Milford, Conn., on Wednesday, July 31st, Dr. John Samuel Bassett, of New York, aged eighty-four years. **Freeman**.—In Cincinnati, on Friday, July 26th, Dr. E. R. Freeman, aged forty-eight years. **Garrison**.—In Cincinnati, Ohio, on Tuesday, July 30th, Dr. Andrew J. Garrison, aged fifty-nine years. **Gibson**.—In Norwood, Va., on Saturday, July 27th, Dr. Edward D. Gibson, aged eighty-four years. **Harris**.—In Richmond, Ky., on Monday, July 29th, Dr. John W. Harris, aged sixty-eight years. **Huggins**.—In Baltimore, Md., on Sunday, July 28th, Dr. Elwood Huggins, aged sixty-four years. **Johnson**.—In Chicago, on Saturday, July 27th, Dr. William Seymour Johnson, aged eighty-two years. **Lamont**.—In Albany, N. Y., on Thursday, August 1st, Dr. Wilbur Fisk Lamont, aged forty-nine years. **Lowrie**.—In Bloomington, Ill., on Wednesday, July 24th, Dr. James L. Lowrie, aged fifty-eight years. **Moore**.—In Asheville, N. C., on Wednesday, July 24th, Dr. Henry W. Moore, of Milan, Ohio, aged forty-eight years. **Morris**.—In Arkansas City, Kan., on Friday, July 26th, Dr. G. S. Morris. **Muirhead**.—In North Gower, Ontario, on Tuesday, July 23d, Dr. Daniel Muirhead, aged fifty years. **Prudden**.—In New York, on Wednesday, July 24th, Dr. William H. Prudden. **Richardson**.—In Boston, on Wednesday, July 31st, Dr. Maurice Howe Richardson, aged sixty years. **Rininger**.—In Riverton, Wash., on Thursday, July 25th, Dr. Edmund M. Rininger, aged forty-two years. **Stanley**.—In Macon, Ga., on Tuesday, July 23d, Dr. Stone Stanley, aged seventy-one years. **Sutliff**.—In Philadelphia, on Thursday, August 1st, Dr. Van Dyne A. Sutliff, aged thirty-eight years. **Taylor**.—In South Ocean City, N. J., on Thursday, August 1st, Dr. John Jay Taylor, of Philadelphia, aged fifty-eight years. **Thomas**.—In Pleasant Hill, Ill., on Friday, July 19th, Dr. J. Smith Thomas.

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THE PREVENTION OF THE CAUSES OF INSANITY.*

By AMOS J. GIVENS, M. D.,
Stamford, Conn.

"It is a curious reflection," editorially remarks the *London Medical Press and Circular*, "that our advancing civilization tends to secure the survival of the unfit rather than of the fit. . . . Sooner or later it may come about that reasoning mankind will bring stern logic to bear upon the question, and will desire to protect the producer rather than the non-productive cumberers of the earth."

This is bold speech. It is not in accord with the present practice of the civilized world. To an extraordinary extent we strive to protect and prolong the lives of the unfit at an incalculable cost, a cost which includes the lives and services of the fit, the labor and earnings of the productive classes.

We can hardly contend that an equal amount of service and expenditure is devoted to preserving the health of the relatively normal, or to preventing the development or perpetuation of disease whether physical or mental.

Our government is lavish in appropriations to secure the health and well being of animals, to prevent the development of insects and other pests which devour or render uneatable so many agricultural products. The statement has been made by Professor J. Pease Norton within the last two years, that the Department of Agriculture spends annually \$7,000,000 on plant health and animal health, that during the ten years prior to 1908 this department had disbursed \$46,000,000. "But not a wheel of the official machinery at Washington," says Professor Norton, "was ever set in motion for the alleviation or cure of diseases of the heart or kidneys, which will carry off over six millions of our entire population, while eight millions will perish of pneumonia, and the entire event is accepted by the American people with a resignation equal to that of the Hindoo, who, in the midst of indescribable filth, calmly awaits the day of the cholera."

All this is doubtless true. It is true that the death rate from diseases of the heart has increased in the United States fifty-seven per cent. since 1880, and of diseases of the kidneys 131 per cent. And it is so true; as stated in the report of Professor Fisher, of Yale, on the national vitality, that forty-two per

cent, of deaths each year from the foregoing and other causes are preventable.

In corroboration of this you will find, if you study the statistics of our National health, and of our medical knowledge of the inception and development of diseases other than the so called degenerative diseases, that we must now recognize that all disease is dependent largely upon the fact that it finds a fertile soil, a prepared soil in the individual, and that if it did not, it would of necessity pass the individual by. This is already almost a truism, although we have seemingly known it definitely but a comparatively short time.

On the other hand, the natural resistive forces in the body, far less in the brain, are not yet fully identified or placed where they properly belong in the category of effective agencies in the crucial struggle. We have not taken sufficient pains to insure their existence or to avail ourselves of them as we might so successfully by establishing a maximum.

Our present methods of preventing disease, and of arresting it in its incipience, are much too crude and too limited to overtake the strides which disease is making among us. As a commercial nation this inefficiency in meeting so grave a problem is beyond comprehension; in a nation ambitious to rank in the van of nations, it is truly suicidal. What this cost is financially, statistics can show only in part; they give an estimate of a loss of \$700,000,000 per annum in the earnings alone of those ill during the working period of life. This is on a basis of \$700, representing the annual average earnings of each individual, and is quite apart from the costs incurred by illness, which would apply to incapacity at all ages for the 3,000,000 always on the sick list.

Our thoughts naturally turn to that proportion of this number mentally affected, and not only not productive, but also instrumental in permanently withdrawing from the usual constructive activities of life, so appreciable a number of highly trained men and women who must give their lives to a class in which the cures effected are strikingly insignificant, compared to the enormous investment of money and of individuals devoted to their welfare.

When we refer to the number of the insane in a given country, it is to an enumeration manifestly incomplete. Doubtless no inconsiderable number of men and women walk the streets to-day, and go about the business of life, who are to all intents and purposes insane. There are others whose existence we can only guess at, sheltered in their own homes or so provided for that they shall not come within official classification. It is the pleasure of the medical optimist to affirm that such individuals are few and rarely to be met with, while in the same breath

*Read at the meeting of the American Medico-Psychological Association, Denver, Colo., June, 1911.

he avers that the apparent increase (for so he designates it) of insane in institutions, is merely because of increasing confidence in their excellence, causing transfer of home cases to hospitals. A slight inconsistency here, that there might be some difficulty in getting around. It reminds one of the cheering statement of an Ohio colleague, at the sixty-fourth annual meeting of the American Medico-Psychological Association, to the effect that: "There never was so little nervous disease among the American people in all their history as there is to-day. This I am well aware," he adds, "is contrary to the usual impression, but the proportion of these diseases, as shown by the vital statistics of the United States, indicates a brighter day for the American people. During the last decade of the last century the mortality statistics from nervous diseases dropped from 247 to 217 in a hundred thousand in the United States, a decline of thirty points."

This is true, but it is to be remarked that it has but little, if any, bearing on the number of cases of nervous diseases, since it refers merely to the number of deaths directly attributable to nervous diseases. In this connection I will quote a statement equally statistical, made by Professor Charles L. Dana, of New York city, before the Section in Psychiatry, International Congress of Arts and Sciences, St. Louis, September 20, 1904, a statement to which is appended a comment well worthy of consideration, coming from such a source. He said: "The average age at death has increased from about twenty-eight in 1840, to 34.5 in 1900, thus bringing more people into the third decade, which is the one most fruitful in insanity."

The steady increase in longevity is a well known fact, and apparently never referred to without general congratulations. This increase applies to the insane, the feeble minded, the criminal classes, as well as to the insane and comparatively sound and desirable members of society. The longer the lives, the larger the accumulation of the insane. The longer the lives, the greater the number of those who survive through the periods of infancy and youth to that period wherein appears the highest percentage of cases of insanity, the third decade of which Professor Dana speaks. It may be added, that he had not then the figures for 1904, which show us that the maximum of 13.7 per cent. of admissions to insane hospitals in that year, were in the age period twenty-five to twenty-nine years, which was almost identically repeated, however, for the age period thirty to thirty-four years, or practically the first half of the fourth decade, when it was 13.6 per cent. Of the total number of insane in the United States, the average age of admission, regardless of the year, was then ascertained to be 38.5 years, which, compared with earlier statistics, shows an increase in admission age.

If we are so unanimous a people in our zeal to lengthen life, would it not be advisable to cultivate, so far as possible, an equal zeal to improve the quality of that life?

Admitting for the sake of argument, room for difference of opinion as to the definite increase, or any appreciable increase of insanity in this country, and that statistics often are misleading as to deductions to be drawn, may not the following figures

justify the belief that there is, nevertheless, urgent reason for making a universal and mighty effort to remove the causes which have produced the insane we undoubtedly have among us, whether such cases be of recent or remote development?

On June 1, 1890, there were in the United States 74,028 insane patients, distributed among 162 hospitals, of which 119 were public and forty-three private institutions. There were additionally reported 30,000 cases of insanity, not in institutions.

On December 31, 1903, there were in the United States 150,151 insane persons, distributed among 328 hospitals, of which 226 were public, an increase as you see of 107 public hospitals, and 102 private institutions, an increase you will notice of fifty-nine. No figures are obtainable for the number of insane not in institutions in 1903, which is perhaps just as well for the optimists, as the special report goes on to say that even without these cases at large, the rate in a 100,000 of population of all the insane in 1890 was exceeded in 1903 by the institutional cases alone, by 16.3.

These figures are for the insane population, and have nothing to do with the feeble minded, estimated in 1904, by Doctor Fernald, superintendent of the Massachusetts School for the Feeble Minded, as approaching 130,000 in number, and, by Ostrander in 1908, as numbering 300,000, and whose genesis we trace to causes to which the largest proportion of the insane are also attributable.

We are an eminently practical nation, or suppose ourselves to be such, and seek to convey that impression; but we are also a wasteful nation, and, for the estimation of our own progress and status, it is immaterial whether other nations are also wasteful.

We are practical; but not so practical as not to invite the expenditure we actually make of twenty-two and one half millions a year for the mere upkeep of hospitals for the insane, without reference to the enormous cost of the original plant and the permanent improvements, a plant valued in the State of New York alone, in 1904, at \$22,000,000. What the cost to the nation may be in loss of earnings of the insane, and of those sane detached for their service cannot be estimated. Professor Dana said in 1904: "It seems to me that it would not be far out of the way to say that the care and cost of the diseased and defective brains of the country is over \$85,000,000 annually, and is increasing absolutely at the rate of four per cent."

It is right that we should care for the insane, and that we should strive for a constantly lessening death rate from all diseases, but is it not wasteful to take, as a nation, no steps to limit and and minimize the necessity for a constantly increasing expenditure so little fruitful in encouraging results? It has been estimated that not more than one in eight or ten of those who come to hospital care ever recover, and the significant statement is also made that in about forty per cent. of those who become insane, the disease is due to preventable causes.

That the use of alcoholic beverages accounts, chiefly through heredity, for at least one fourth of all cases of insanity is well known, but is it not possible that we are still underestimating the part it plays in producing this class of cases? It is my wish dispassionately and scientifically to consider the problem of our professional life. We can admit

with Dr. F. W. Mott, neurologist to the Charing Cross Hospital, London, that were the consumption of alcohol limited to the utmost degree there would be no parallel decrease in the number of cases of insanity. The artificial condition under which life is lived to-day, apparently impels men to seek artificial stimulation, and were this not obtainable through the action of alcohol other means would doubtless be resorted to. Other means might be discovered, however, less fatal to the integrity, not of the individual, but of the race. So long, nevertheless, as alcohol in all its forms, pure and impure, highly or moderately intoxicating, is freely available, and the greater masses of the public are left in ignorance of its inescapable, most subtle influence upon the organs of the body, the tissues of the nervous system, and of the birthmark of a vitiated vitality or an enfeebled mind which will be branded upon offspring, just so long will the chief factor in the production of the insane and defectives be uncontrollably active.

In vain, as regards the subject under consideration, has the question of temperance, so called, been approached by clerics and their followers with religious exhortations, pledges, and tracts. This is a matter which must be hammered home into the brains as well as the souls of the American people, and by those who are conversant with modern pathological and psychological findings. And the government elected by the American people must afford them adequate protection from their ill advised desire—as regards a certain proportion of them—to indulge the appetites of the body without restriction.

It seems to me that some practical measure might be adopted both to lessen the sale and consumption of alcohol, and to secure a pure article. This measure, if enacted as law and duly enforced, would insure the retaining of all liquors in bond for ten years, and beer in breweries until at least six months old. Inferior beers cannot survive six months, while the withholding of liquors which have undergone the normal process from the public ten years would have great advantages. There should be severe legislation against the sale of substitutes for liquors which have undergone the normal process of aging, whereby the toxic constituents become largely changed into essential oils and ethers. The price of intoxicants would necessarily be advanced, and would, we might hope, place them in large quantities at least, beyond the reach of the classes most productive in offspring.

The present pure food laws provide, it seems, less for the quality of alcoholic beverages than for the identification of their component elements. They are absolutely ineffective at the present time.

There are, obviously, palliative measures not to be despised; such, for instance, as that formulated in the so called *Bar and Bottle Bill*, which Massachusetts hopes eventually to test. This bill is intended to prevent the sale in barrooms of bottled liquors.

Sixty per cent. of the arrests in Massachusetts in 1908, it may be noted, were for drunkenness, and in 1909 the number of arrests for this cause increased by 4,185. There may or may not be any connection between these facts, and the publication

editorially by the *Boston Herald*, February 14, 1909, of the statement that the number of new cases of insanity were for 1908 the highest yet, viz., 600, and that a State official had said: "We can't build hospitals fast enough to take care of the appalling increase."

There may be no connection, I say, between the increasing excessive use of alcohol in Massachusetts and the increasing number of cases of insanity, but that the alarm is being taken for reasons not too far to seek, is evidenced by the appointment in that State this past year of a commission consisting of two alienists and a criminologist, for the study of the increase of criminals, mental defectives, epileptics, and degenerates in the State.

If alcohol is the chief cause of insanity, as exhibited through heredity, other factors scarcely less worthy of consideration enter into the problem. It has been well said that, "the more stable the brain organization, the more stress required to provoke mental dissolution, and vice versa." Also that, "every man has his breaking point," that "breaking point" however, may never be reached if a man has a good heredity; but as we look about us, we see on all sides individuals whose heredity is defective. Possibly we say it is not alcoholic, but can we say it is not syphilitic, epileptic, tuberculous, that it is not, above all else, neurotic?

Can we say that the stress and strain of modern life, the greed for excitement, money, social advancement, political aggrandizement, mental and physical excesses have not entered into the inheritances of the individual to the extent of furnishing him with a constitution and temperament but ill adapted to withstand the enormous demands made upon his vitality? Can we feel reasonably sure that he will react normally under the continued pressure of existence, and during the additional years of expectation of life we think so great a gain? Or, if he does not reach the breaking point, does it not seem probable his descendants will? Pessimistic deductions might be not inexcusable, did we not know that the partial prevention of these causes is within the power of the race which has created them, and this to a marked extent, granting a general comprehension and cooperation.

To retarded inherited syphilis are increasingly attributed many nervous manifestations. According to Rumpf, the nervous system participates with thirteen per cent. in the symptoms of inherited syphilis. Fournier's statistics, however, gave a much higher percentage. It is the opinion of many of the profession, that in the future there will be a distinct connection traced between the neuroses which precede generations developing insanity, and the present saturation of the male population with the toxins of gonorrhea, sixty per cent. being the lowest estimate of the number of men in the United States who have, or have had gonorrhea. The identification of the remoter manifestations of gonorrhea in the individual is proceeding rapidly.

Veneral diseases can be greatly lessened, if men and women both are better instructed in sexual hygiene, and made aware of the inevitable outcome of the transgression of physical laws, and their far reaching and deplorable effects. To this end a period must be speedily put to the senseless and

criminal reticence heretofore observed on those subjects.

The question of a "pure birth rate," so called, is intimately associated with this question of the prevention of the causes of insanity. It is an extraordinary state of affairs when a nation which raises a great hue and cry over the plague and leprosy, which without a dissenting voice quarantines scarlet fever and diphtheria, not only allows the syphilitic and gonorrheic freely to go where he lists, but leaves him free to marry and beget tainted offspring, later, in too many instances, to contribute inmates to our institutions for the feeble minded, the insane, the blind, and other defectives.

The feeble minded, also, estimated in 1904, as has been said, to number more than 150,000, of whom the census reported only 14,317 in institutions, propagate their kind practically unchecked, except in the States of Connecticut, Minnesota, and Washington. Before the prison congress, held in Seattle in 1906, it was reported in illustration of the menace this is, that the State of Pennsylvania was then caring for 150 feeble minded descendants of one family. Yet during the discussion before that congress, of the advisability of securing sterilization of habitual criminals, to say nothing of noncriminals mentally defective, one member, at least, entered a strong objection, said he considered the entire question an "outrage" and was willing "to trust to Nature to look after the reproduction of the race." We have been trusting Nature to look after the reproduction of the race ever since the first colonists landed to introduce the blessings and diseases of civilization. We are still, to a large extent, pursuing this suicidal policy, with results very numerous in the manifestations of degeneration.

Penny wise and pound foolish, we make lavish expenditures for the treatment of the mentally diseased, but disburse with a niggardly hand funds for the eradication of its cause, like the State of Michigan, reported in 1908 as limiting the annual expenditure of its State Board of Health to \$10,000 for all purposes, while expending for the care of its insane about \$1,000,000 per annum. Commenting upon this, Ostrander says: "Insanity is as preventable as tuberculosis. A million dollars annually expended for the scientific investigation of the causes and prevention of diseases would eventually relieve the State of a large part of the burden of caring for its dependents."

The diseases and conditions known as insanity, epilepsy—one half of all the physically defective insane are designated as epileptic—idiocy and imbecility, criminality, and inebriety are closely bound together, and intimately related. The cost of systematic education of the public, old and young, in such preventive measures as can alone insure reduction of these cases, or even a halt in their constant increase, will be large, but is never likely to approach the enormous amount of present expenditures to care for the results of our past folly, and failure to interpret the trend of events.

Better conditions, also, as regards housing of our people, their working surroundings, and especially their nutrition, etc., must be assured. It is not, however, the native born, those most logically our people, who give rise to the problems most difficult

of solution. It is the foreign born, now pouring into the country in augmented numbers. In March, 1910, 103,000 immigrants landed at the port of New York alone; 32,314 of this number remaining in New York State. The last National census returns showed that 43.5 per cent. of the insane in that State admitted in 1904, were foreign born. In Connecticut the percentage was 30.2 of admissions of foreign born for 1904. The percentage of foreign born to total population of Continental United States for that year was but 19.5. Insanity of the foreign born increases much faster than their addition to the population warrants. We may attribute this to lack of adjustment to environment, to the fact that a large proportion of these immigrants are accustomed to an outdoor life, and to an unwholesome diet totally inadequate to the physical demands upon them in this country. Congregating to so large an extent in cities, meeting the unaccustomed stress of American environment and customs, ill nourished and ill housed, and often with inherent defects, they succumb mentally, and crowd our institutions.

The Irish and the Germans constituted, in 1903, over sixty per cent. of the total insane population in hospitals. They are, incidentally, considerable consumers of alcoholic beverages.

Are the mentally defective and the potentially insane generally detected upon their application for admission to this country?

"It frequently happens," says the commissioner of immigration at the port of New York, "that 5,000 aliens arrive in one day. With the force of inspectors at my disposal not over two minutes can be devoted to each of them at the first inspection, at which over seventy per cent. are usually admitted."

The year this report refers to was 1909. In that year a total of 944,235 aliens were admitted to this country, and of this number only 348 mentally afflicted were detected and turned back. Comment is unnecessary.

An effort is being made by the government, and by societies and individuals, to secure a distribution of immigrants which shall establish a larger proportion in the country. Could this be done, and our agricultural sources better developed, not only would the health of the foreign element be greatly improved, but the question of the food supply of the entire nation would be infinitely easier to answer. The nervous strain which the present problem of living entails upon all classes except the wealthiest, can prove no small factor in the production of nervous instability and insanity in this and the following generation.

The census of 1900 gave a total population for the United States of 84,233,060, and a wage earning population over ten years of age of 29,237,070. Of this number 10,438,219 were engaged in agriculture; the smallest percentage of those following agricultural pursuits being represent by the foreign whites, the largest by the colored people. The foreign whites, however, are not largely the indispensable skilled workers, but the workers a large proportion of whom could be better employed in rural sections, in developing the land, and in reducing the constantly increasing unsettled areas in

this country. These unsettled areas have increased principally in the Western States, the population within their boundaries having been diverted to urban centres. There were only three States, however, New York, New Jersey, and Connecticut, in which more than half the population resided in cities of 3,000 inhabitants or over. The condition in New York is explained by two facts: 1. It has nearly twice as many foreigners in its population than any other State; 2, it leads as regards the average number of wage earners employed in manufactures—estimated in 1900 by States and Territories—and in the value of its manufacturing products, said value amounting to \$340,000,000 more than the value of the products of Pennsylvania, the State which ranks second. Connecticut, we observe, is one of the four States, Rhode Island, Massachusetts, Connecticut, and New Hampshire, having the greatest percentage of persons engaged in manufacturing and mechanical pursuits.

These facts, however, offer no discouragements to the advocating of a better utilization of the land in rural districts. They rather emphasize the desirability of detaching from urban centres a larger proportion of the population. A still further argument in favor of such a course is the definite knowledge through the last report of the commissioner general of immigration that, although the great mass of our population is of Teutonic and Celtic origin, sixty-seven per cent. of our immigration now comes from the Slavic and Iberic countries of Southern and Eastern Europe; in a word, they are coming from countries where the people are chiefly occupied in agricultural pursuits. Therefore, these people should be diverted from our cities to the infinitely more healthy life of the country. Our native population also should be retained, so far as possible, in rural sections of the country, which undoubtedly can be so developed in these days of modern means of communication, etc., as to soon offer many of the chief advantages of urban life without the principal deteriorating elements.

"Back to the land!" is no misleading cry, either of our needs or of our opportunities. Of our opportunities, because the *United States Census Report* for the year 1900 tells us that the New England and North Central States were found to contain the most valuable farm lands, while the farms with the lowest valuation per acre (land and improvements) were found principally in the South and West.

And yet we are constantly hearing about the unfertile soil of New England, and the farms abandoned of necessity within her boundaries, and even within the boundaries of the rich and prosperous State of New York. The commissioner of the Department of Agriculture, State of New York, writes: "It has seemed to please our Western friends to insist on worn out and exhausted soils, not recognizing the fact that most of the farms which lie unoccupied and untilled, are in that condition because of the fierce competition of industrial and commercial enterprises. . . . Many of these farms in New York State are worth agriculturally as much as the high priced farms in the West, and are infinitely better situated as to markets, social and educational advantages."

What is said of New York may be said in a degree of New England. Massachusetts, for instance, has 141,000 acres of undeveloped tillable land, and about 1,000,000 acres of pasture land which are unused.

In contrast to such opportunities is the so obvious need that they should be utilized. The most crowded districts in New York city had over 407 persons to the acre when the last census was taken. The latest figures for Boston give the density in its tenement quarter of no less than 427 persons to the acre.

The foregoing facts have a very direct and immediate bearing upon the prevention of the causes of insanity, as we shall see if we take into consideration the distribution of the insane in rural and urban districts for even a limited area. The report of the Commission in Lunacy for the State of New York gives 21.9 per cent. insane, first admissions October 1, 1907, to September 30, 1908, as drawn from villages and rural districts, and 78.1 from urban districts. The State Board of Insanity for Massachusetts reports only 17.63 per cent., first admissions of the insane from October 1, 1908, to September 30, 1909, as drawn from rural districts, and states that there has been a steady decrease in the proportion of the insane from the rural districts for the last four years. Maine and New Hampshire also show a similar percentage of much fewer insane from rural than from urban sections. All these are valuable data, for we must remember that it is comparatively recently that any general steps have been taken to ascertain definitely the proportion drawn from urban and rural districts respectively. I am advised by the director of the Bureau of the Census at Washington, that no Federal statistics have been collected covering this point, but that this defect has been remedied in the census reports for 1910.

Realizing as we do the part that the exciting and exhausting life in cities is playing in the production of neurotics, we must heartily favor some movement of population back to the saner and more healthful conditions of country life. We must equally favor the multiplication of inducements sufficient to retain young men and women in the smaller towns, if not in the country itself, for too many of them migrating to cities undergo physical and mental degeneration.

There are many other phases of the question of the prevention of the causes of insanity that suggest themselves, among others the proper mental discipline American youth lacks, but urgently needs, as well as a more careful supervision of, and provision for his physical development. Also, we should consider measures to bring about a far closer relationship than now exists between the alienist and the average medical practitioner; a better balance in knowledge of mental diseases; larger opportunities for the medical student of to-day to study mental defects and to learn to detect incipient cases of insanity, so that in practice he may recognize them, and advise their being placed in sanitariums or elsewhere under constant supervision.

A great step in advance is being taken in the movement, now rapidly gaining in favor, to establish psychopathic wards and pavilions where bor-

derland cases can be brought under observation without alarming the sensibilities of patient or family, and without prejudice to the welfare of the individual or the community. The success of this departure from older methods has been gratifying, not only in Germany, France, and Italy, but also this side of the Atlantic, in New York, Albany, Toronto, and, indeed, wherever it has been tried. It is a fact, that fully fifty per cent. of those recovering from insanity, began treatment in the first three months of the disease. Psychopathic wards established in connection with general hospitals will also furnish opportunities for the instruction of the medical profession, both graduates and undergraduates, an instruction heretofore too often limited to very occasional visits to insane hospitals.

CONCLUSIONS.

In bringing this paper to a close, I will summarize but a few of the points I hope may have been emphasized. Among them are:

1. Tendency observable to expend time, labor, and money more upon dealing with the results of mental, and many other diseases, than upon their prevention; and the wastefulness and danger of pursuing such a policy.
2. Seeming connection between increasing longevity, and increasing insanity.
3. Increasing importance of limiting the marriage of the unfit.
4. Urgent need for the adoption of more practical measures for the lessening of the production, sale, and consumption of alcoholic beverages.
5. Disproportion of foreign to native born insane, and the necessity for the distribution of the foreign element outside cities.
6. Unappreciated opportunities offered by New York State and New England for the health preserving life of the country.
7. Obvious necessity for the more rigid exclusion from this country of defectives.
8. Good results obtainable through the establishment of psychopathic wards.

"Our national health is physically our greatest asset," wrote Theodore Roosevelt. "To prevent any possible deterioration of the American stock should be a National ambition. . . . The preservation of National vigor should be a matter of patriotism."

In these sentiments I heartily concur, as will all other members of the medical profession; but they and we know, that before the primal causes of mental disease, especially, can be eradicated, we must have to supplement our increasing efforts, the practical cooperation of the government at Washington, the power of the press which we earnestly bespeak as a great educational force, and the sentiment of the American people, which will never crystallize effectively in deeds until suitably enlightened and directed.

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THE NEWER TEACHINGS OF THE DISEASES OF THE ALIMENTARY CANAL.

BY MARK I. KNAPP, M. D.; LL. B.; LL. M.,
New York.

I.

THE ANATOMY OF THE ALIMENTARY CANAL VIEWED FROM THE CLINICAL STANDPOINT.¹

In the treatise which is here to follow it is not my intention to dwell at any length at the minute anatomy. Those who are interested to that extent may look it up in the standard works. My intention is to bring out the necessary anatomical facts which have proved to me to be of importance in order to understand the reason for the many symptoms. I especially wish to emphasize the anatomical parts and their relations as physical units, and seek to reconcile them with the laws of physics. Viewed in that light, our perception of diseases of the alimentary canal becomes clearer; symptoms, hitherto explained unsatisfactorily, get a true, scientific, and solid basis; the chaotic conception of nervousness, neuroses, and neurasthenia is forever dispelled.

The alimentary canal begins with the lips and ends with the anus. Therefore it begins with the head and runs through the thorax, abdomen, and pelvis. The oral cavity begins with the lips and extends to the soft palate. Into it empty the ducts of the salivary glands. A pathological condition of the mouth, whether primary or secondary, might travel along these ducts and give parotiditis or enlargement of the submaxillary glands. The affection of the submaxillary glands is common enough; less common is the affection of the parotids. An explanation for this is offered by gravity. Wharton's duct of the submaxillary glands can easily be invaded by gravity, while Stenson's duct of the parotid cannot. The course of Wharton's duct, which opens at the side of the frenum linguae, is downward; the course of Stenson's duct, which opens upon the inner side of the cheek opposite

¹The following authorities have been consulted: 1. *SOBOTTA-MCMURRICH, Atlas and Textbook of Human Anatomy*, 1906. 2. *SPALTENHOLZ, Hand Atlas of Human Anatomy* second (English) edition. 3. *PIERCE'S Anatomy*, 1907. 4. *QUAIN'S Anatomy*, eleventh edition, 1909. 5. *MORRIS'S Anatomy*, fourth edition, 1907. 6. *GRAY'S Anatomy*, American edition, 1887. 7. *MCCELLAN, Regional Anatomy*, second edition, 1894. 8. *HYRTL, Lehrbuch der Anatomie des Menschen*, nineteenth edition, 1887.

the second molar teeth is upward. Behind the soft palate is the pharynx, which is of a conical shape, the narrowest portion of which joins the esophagus opposite the cricoid cartilage and in front of the sixth cervical vertebra. Of chief importance to us are the communications between the pharynx and the nose and between the pharynx and the ear. The first communication is established by the posterior nares and the latter by the Eustachian tube. It is by the means of these communications that the stomach communicates with the nose, conjunctivæ, the frontal cells, and the ear. Through the posterior nares is established the direct and large communication between the pharynx and the nose. So large is this communication that under certain conditions the stomach tube is introduced into the stomach through the nose. The nose directly communicates with the eye through the lacrymal canal and with the frontal cells through the large and mucous lined openings of the infundibulum of the ethmoid bone.

The importance of this anatomical arrangement will become manifest when the cause is sought for the frontal headaches, for the catarrhal condition of the eyelids and nose, which are associated with certain gastrointestinal diseases. It is my object to dwell on the fact of this communication between stomach and frontal cells, and I will therefore give the following illustration. In Hyrtl's most interesting descriptive anatomy we read of several cases of insect larvæ and worms which have lodged in the frontal cells and caused not only persistent, agonizing headaches until the parasites have been removed, but in one case, also epilepsy. In one woman there were removed seventy-two worms from her frontal cells, which worms were similar to those which are often found in the frontal cells of sheep. This woman remembered her pains to have begun after she drank water from the same vessel which had been used before by a shepherd in giving water to his sheep. The parasites in this instance could not get into the frontal cells of the patient by any other route than by the passage which exists between the pharynx and the frontal cells. Remembering this passage, which, to be sure, is very circuitous, we can explain the frontal headaches which are such constant concomitants of certain digestive diseases. We shall be able to trace then the same irritant, causing disease in the gastrointestinal tract also to reach the frontal cells and cause suffering there, and we shall not have to explain the frontal headaches by some imaginary reflex phenomenon or some other illusion of some nerve affection which, besides, has never yet been demonstrated. We shall learn of this frontal headache and conjunctivitis and of the inflammation of the lacrymal ducts in connection with the irritation of the mucous membrane of the frontal cells, and of the lacrymal canal, as caused by irritating, volatile, gaseous acids, which occur as pathological products in the stomach and intestine.

The esophagus begins at the level of the sixth cervical vertebra, opposite the cricoid cartilage, and extends to the level of the ninth thoracic vertebra. Its length is said to be twenty-five centimetres, but this is not always correct. It is obvious that the esophagus in a five footer is proportionately shorter than in one who is many inches taller. The

reason of this latter remark is that some writers attempt to locate a lesion of the esophagus by the distance from the teeth, without regard to the height of the patient. Therefore, a lesion located forty centimetres beyond the teeth may be either at the cardia or a few centimetres above it, corresponding with the height of the patient. The best method of finding the extent of the esophagus (provided the esophagus is not lengthened by stretching because of dilatation beyond the diaphragm or because of a gastroptosis) is to auscultate over the spinal column by a method which I shall describe later.

The esophagus is conveniently divided into three portions, the cervical, the thoracic, and the abdominal. The esophagus is not of uniform width throughout, but is marked by two constrictions, one opposite the bifurcation of the trachea, the other at the diaphragm. The first constriction is opposite the spine of the third (in some cases the fourth) dorsal vertebra. In front, this corresponds to the junction of the manubrium sterni with the gladiolus, which is on the level of the cartilage of the second rib. It is important to remember those normal constrictions when introducing the stomach tube, which is often halted at those points. Also we must remember that the esophagus runs a somewhat spiral course. Due to the constrictions just mentioned and the spiral course of the esophagus, the stomach tube will occasionally bend upon itself. Again, the points of the normal constrictions are the seats of esophageal hemorrhages, which subsequently leave scars, and these scars are apt to produce a great deal of trouble. We also want to note that at the beginning of the esophagus, at the transition from the pharynx into the esophagus, there exists also a constriction.

The stomach is one of the organs of digestion, the importance of which seems to vary with the prejudice of the writers. Some writers speak of it as the chief organ of digestion and others hold it merely as a food reservoir. But the fact is that it is neither the chief organ of digestion nor is it at all a reservoir. Those who hold the latter view apparently ignore that there are secretions in the stomach which do certain work; such fact is not in accord with our conception of a reservoir. The stomach is an organ having definite functions, and we shall have occasion to discuss the result upon our entire constitution, when such functions are in any way interfered with or altered. The stomach is somewhat of a pyriform shape, but inverted; the widest part, the fundus, is up and the narrowest part is about the lowest. It is hollow and situated almost entirely on the left side of the median line. Only its end portion, the pylorus, passes to the right of the median line. The opening, where the esophagus joins the stomach, is called the cardiac opening, and the opening which marks off the end of the stomach and the beginning of the intestine is called the pylorus. The cardiac opening lies posteriorly to the pyloric and on a higher level. The pylorus lies about seven to eight centimetres above the umbilicus and to the right of the median line. In the empty, collapsed condition, we observe that the stomach is composed of two walls, an anterior and a posterior, and that the two walls are

joined by two margins which are curved, the one above and the other below. The upper is the shorter margin and is called the lesser curvature; the lower is the larger margin and is called the greater curvature. Both margins curve with their convexity toward the pelvis. In the distended condition, the stomach expands more in the direction of least resistance, that is posteriorly, and rotates somewhat so as to bring the long axis of the stomach slanting from above downward and from behind forward. The reason why the stomach rotates depends entirely on physical laws. The fundus of the stomach, when inflated, is in apposition with the diaphragm and must needs follow the shape and outline of the diaphragm. As the diaphragm arches upward and backward, the fundus, following it, will be forced posteriorly. During peristalsis, when the stomach contracts, there is noticed a slight constriction near the pylorus which marks off the pars pylorica from the rest of the corpus of the stomach. During the peristaltic contraction the pars pylorica bends slightly upon the corpus backward and upward. It seems that the pars pylorica or the antrum pylori is formed, because of the much greater number of the circular muscle fibres which are much denser and more close together in this part than in the rest of the stomach. There is still a dispute as to which is the proper position of the stomach, horizontal or vertical. But, while the true position seems to lie midway between the two, the vertical position is the one less frequently observed. The practical clinician will be satisfied to know that the pyloric portion is the lowest in either position. The stomach is held in place by the esophagus and the gastrohepatic or lesser omentum.

The stomach is made up of four coats, the serous, muscular, submucous, and mucous. Of these the most important are the muscular and the mucous coats. The muscular coat is composed of three sets of fibres, the oblique, longitudinal, and circular fibres. The oblique fibres are the most superficial and are limited to the cardiac part. The fibres of this set run obliquely from left to right. A contraction of this set will propel the stomach contents toward the pylorus. The next are the longitudinal, and next to these are the circular fibres. Both of these sets are most abundant in the pyloric portion. Of the longitudinal fibres it is to be remembered that they are most abundant along the lesser curvature. The muscular coat represents the dynamic function of the stomach, the force which grinds up the contents introduced into the stomach. It would seem that, because of the denser arrangement of the longitudinal muscular fibres along the lesser curvature, ulcers are here formed with greater frequency. We shall learn, as to the etiology of ulcer, the violent compression of the vessels and the consequent bursting of the little arterioles or venules. Naturally, where the muscle fibres are denser, the force exerted upon the vessels is stronger. The muscular coat of the stomach represents its dynamic function, the force which grinds up the food which has been introduced into it.

The mucous coat lines the stomach. It becomes thicker as it nears the pylorus. When the stomach is empty the mucous membrane has many folds

which run chiefly longitudinally, but some other folds run also transversely. It is due to the presence of these folds, that the plants such as yeasts and fungi can grow in the stomach. They find suitable lodgment between the folds where they can rapidly develop before they can be swept into the intestine. When the stomach is distended these folds disappear. This fact is taken advantage of therapeutically in lavage, when the fluid which is introduced into the stomach distends the folds and thus sweeps off the plant life, the fluid with the plant life being returned through the mouth. The mucous membrane contains the glands which yield the gastric secretion. The glands are of two kinds, the peptic and the pyloric. The peptic glands are found all over the stomach; the pyloric glands in the region of the pylorus. The function of the mucous membrane is purely chemical.

The small intestine begins at the pylorus, about six to seven centimetres above the umbilicus and to the right of the median line and ends in the right inguinal region. It is about twenty feet long, and its diameter diminishes gradually, being narrowest at the termination. It is divided into three parts, duodenum, jejunum, and ileum. The duodenum ends about ten inches from the stomach, its termination being coincident with its adhesion to the spine; it extends as far as it is attached to the spinal column. The subsequent division of the intestine into jejunum and ileum is entirely arbitrary, the jejunum being that part, the coils of which lie in the left side of the abdomen, while the remainder constitutes the ileum. Therefore, the coils of the ileum are confined to the middle of the abdomen.

Of the greatest clinical importance are what may be termed the physical properties of the small intestine. First, its course, which is constantly changing as to level and direction; second, its fixed attachments; third, its relation to the vessels; fourth, its relation to other organs; and, fifth, its pressure effect upon the nerve ganglia and plexuses. It will prove of great advantage to study the anatomy of the small as well as of the large intestine from these viewpoints, as only then can we understand the symptoms which are the result of intestinal disturbances. At this point we also want to bear in mind that the small intestine does not join the large intestine, end to end, but that the ileum enters the large intestine about two inches above the bottom of the cecum and at about a right angle. Also, that the ileum enters bodily into the lumen of the colon for about an inch, forming the Bauhinian, otherwise called the ileocecal valve. Owing to this arrangement the natural tendency for the contents of the ileum is to drop first into the cecum, which is the first part of the large intestine. This anatomical condition explains why the cecum is so apt to be the seat of disease.

Concerning the course of the intestines these elementary facts must be borne in mind: (a) That the intestine is not a straight tube, but consists of many coils; (b) that bodies do not fall up but down and that therefore, unless peristalsis is active, the intestinal contents will seek the lowest level; (c) that every angle is an impediment to the onward passage of the contents within the intestine and that the more acute the angle the greater the impediment.

ment; (d) that organic obstructions occur there, where the natural impediments are the most pronounced, that is at the angles. This latter fact is well known and appreciated by the plumbing trade. Every plumber dreads bends and traps; obstructions to the plumbing (stuffing up) occurs in bends and traps.

The small intestine has many bends and traps. The first bend and trap is represented by the duodenum, which is from eight to ten inches long. It is commonly described as being of a horseshoe form with the concavity directed to the left. This first portion of the intestine is responsible for a great deal of misunderstanding and a great many useless operations. And the reason for all this lies in the fact that not sufficient emphasis has been laid on the anatomy and direction of this part. The duodenum is divided into three portions, each taking a different course. The first portion, turning slightly upward and a trifle to the right, runs almost horizontally backward to the right of the spinal column. This is the superior branch which is about two inches long. The second portion descends along the right side of the spine for about three inches, thus forming a sharp angle with the first part. On the inner, the vertebral side of this part, a little below the middle, enters the ductus communis choledochus. It is very necessary to remember the course of this and of the third part of the duodenum.

A pathological condition which begins in the stomach will naturally take its usual course down into the intestine and along the course of the intestine. Now, a condition which produces distention will give pain along the course of the bowel and, therefore, will give pain also along the course of the descending portion of the duodenum. But, it is a very common mistake to ascribe the pain on the right side to the kidney as it is to ascribe the distention pain of the first portion of the duodenum to some gallbladder disease.

The third portion, which is the longest, is called the *transverse*, but is better named the *inferior* portion. This portion again forms an angle with the descending part. It runs across the vertebral column and, before it joins the jejunum on the left of the spinal column, runs first up to the extent of one vertebra, that is, it runs from the third to the second lumbar vertebra. It then turns forward to join the jejunum and forms with it the *duodenojejunal flexure*. Of the entire small intestine, the duodenum alone has firm attachment to the spinal column; the jejunum and ileum are attached to the spine medially, through the mesentery, which originally is part of the peritoneum. The mesenteric attachment to the spine runs obliquely downward for some six inches, from the left side of the second lumbar vertebra to the right side of the sacroiliac symphysis. But only the second and third parts of the duodenum are firmly attached, the first portion being freely movable. The descending portion is fixed by the peritoneum and the pancreas and the third part by the peritoneum of the mesocolon as it spreads out and embraces the duodenum before it attaches to the spine. The end of this third portion, together with the duodenojejunal flexure, has also a firm attachment to the diaphragm, namely, the *musculus suspensorius duodeni*, which is a small,

flat, triangular muscle, consisting of smooth muscle fibres and some fibrous tissue and arising from the left crus of the diaphragm.

The knowledge of the fact that the inferior portion of the duodenum courses across the vertebra will help us a great deal in explaining the cause of the pain in the back, which is so commonly pronounced to be a reflex pain, which it is not, and we shall have occasion again to refer to this in the discussion of the physical properties of gases engendered in the gastrointestinal canal.

The interesting points in the jejunum are that its coils lie chiefly on the left side of the abdomen and that the branches, which form a loop, are much longer than the branches which form the loops of the ileum; very often the two branches run almost parallel. One such sharp angled loop is formed right near the beginning of the jejunum and gives cause to obstructions which occur quite frequently and which are apt to be mistaken for an obstruction of the splenic flexure of the colon. The point of difference between the two is that the jejunal loop is higher than the splenic flexure. Of the ileum it is to be remembered that some of its coils reach down into the true pelvis; in the male into the rectovesical fold and in the female into the rectouterine pouch. We must think of these coils and their close contact with the female generative organs, when a woman complains of pain or distress in her pelvis. Such symptoms may come from an overdistended loop of the ileum.

The wall of the small intestine consists of four coats. The outermost is the serous, which is derived from the peritoneum; next is the muscular; next to it is the submucous; and innermost is the mucous coat. Of clinical importance are the muscular and the mucous coats; the first one giving the propulsive force, the second dealing with the secretions and absorption. The muscular coat is composed of two layers. In the outer layer the muscle fibres run longitudinally, that is, with the axis of the intestine. In the inner layer the fibres run circularly, that is, around the circumference. The mucous membrane contains the anatomical elements which yield the secretions, necessary in the elaboration and digestion of the food that comes beyond the stomach. Folds of mucous membrane project into the lumen of the intestine. These folds stand perpendicularly to the axis of the intestine and are permanent, that is, they are not obliterated by the distention of the intestine. These begin about an inch and a half to two inches beyond the pylorus, are most numerous around the duodenojejunal flexure and gradually disappear as the end of the ileum is reached. The mechanical effect of these folds, called the *valvulae conniventes*, is to prevent the too rapid progress of the intestinal contents. Other projections from the mucous membrane are the villi, which are densest in the duodenum and jejunum, but are also found throughout the ileum. The villi contain the lacteal vessels. The glandular structures are the simple follicles or the crypts of Lieberkühn, which are scattered all over the small intestine; the duodenal or Brunner's glands, which are most numerous near the pylorus; the solitary glands; and, lastly, Peyer's glands, also called Peyer's patches, which are simply aggregations of the solitary glands.

The superior mesenteric artery, a branch of the abdominal aorta, is the chief artery which supplies the small intestine. It arises by a short, thick trunk and then ramifies widely to supply the intestine. The entire weight of the small intestine and its contents is constantly pulling upon this artery, drawing it in a downward direction. Beside supplying the small intestine with blood this artery plays another rôle, that of constricting the inferior portion of the duodenum under certain conditions. This part of the duodenum runs between the superior mesenteric artery and the abdominal aorta, these two vessels forming the two prongs of a fork, between which the inferior part of the duodenum passes. The abdominal artery is attached to the spine and is therefore stationary. Because of its being weighted, the superior mesenteric artery is also stationary, immovable. Now, if for some reason the duodenum distends, such distention is checked by the two prongs just mentioned. The consequence is that the part of the duodenum in front of the arteries distends still more and the effect of the two prongs is that, because of their not yielding, the duodenal portion just between these two arteries cannot distend, therefore that portion of the duodenum is constricted and that constriction gives severe pain which is properly located in the region of the second lumbar vertebra. As the anatomical structure of that part of the bowel which corresponds to the location of the two vessels does not usually suffer from such interference and therefore shows no lesion, the patient's symptoms are wrongfully ascribed to some reflex action.

The lack of appreciation of the relation of the intestines to the other adjacent organs is the source of a great many errors. It is to be noted that the intestine is in direct contact with all the abdominal viscera and, therefore, any affection of the intestine may spread to such neighboring organ. Whether the intestine is affected by an inflammation or a solid, liquid, or gaseous tumor there will be the pressure effect upon such contiguous organ and a reference of pain to that other organ. Especially perplexing is a pressure by gas distention, which is not recognized on autopsy. Also, the distended intestine will press upon the subjacent nerves, plexuses, and ganglia, and will produce symptoms of a severity in direct ratio with the force of the pressure.

The large intestine begins in the right iliac fossa with the cecum, which is the widest part. It then ascends to the under surface of the liver, bends at nearly right angles to the left, runs transversely across to the left, when it again ascends somewhat to form an acute angle with the descending portion, which runs down into the left iliac fossa, after which it becomes the sigmoid flexure, and finally runs to opposite the sacroiliac symphysis to its termination as the rectum. Altogether the large intestine is from five to six feet long. The approximate average lengths of its several subdivisions are: Cecum, seven centimetres or 2.5 inches; ascending colon, twenty centimetres or eight inches; transverse colon, from fifty to eighty centimetres or from twenty to thirty-two inches; sigmoid flexure, from twenty-five to fifty-six centimetres or from ten to eighteen inches; rectum, from fifteen to twenty centimetres or from six to eight inches. The lower

extremity of the cecum is at the level of the middle of Poupart's ligament. The long axis is usually at a slight angle with the ascending colon.

From the bottom of the cecum comes the vermiform appendix, which is a thin tube ending blindly and is about one quarter of an inch thick; its length varies very much and may be from three to ten inches. The cecum lies in the right iliac fossa but, when distended, it is in contact with the abdominal wall. The ascending colon passes upward and somewhat backward, and only when distended, is part of it in contact with the abdominal wall. When not distended, both the cecum and the ascending colon are covered by loops of the small intestine. The shape of the transverse colon is usually curved, the concavity looking upward and backward. However, it may have other shapes, as for instance the M shape or V shape. The hepatic flexure, that is, the flexure formed by the ascending with the transverse colon, is rather perpendicular, while the splenic flexure, that is, the angle formed by the transverse colon with the descending colon, is acute. The splenic flexure is on a higher level than the hepatic flexure and is also more backward than the right flexure. When the stomach is empty, the splenic flexure may reach as high as the left dome of the diaphragm. The descending colon and the sigmoid are also covered by loops of the small intestine.

The ascending, the descending, and the lower two thirds of the rectum are firmly adherent posteriorly, while the cecum is in some cases adherent, and in others it may have a mesentery. The transverse colon, the sigmoid flexure, and the upper third of the rectum are freely movable, because of the mesentery which they have. We may remember the mesenteric attachments this way. Only the vertical parts of the large intestine are attached, while the others are freely movable. The points of clinical interest are the cecum and the flexures, because of their relations to the adjacent organs and because of the traps they form and their consequent liability to be clogged up and cause pathological conditions. In the female, the chronic irritation and distention of the cecum and of the sigmoid flexure are often misinterpreted as being due to some ovarian trouble. Undoubtedly, if the irritation is of sufficient strength and persistent, it may finally attack the ovaries. Again, the painful distention of the right and left flexures is almost invariably mistaken for kidney complications. These facts must be borne in mind before an operation is advised for either kidneys or ovaries.

616 MADISON AVENUE.

THE COMMONER CONTAGIOUS DISEASES OF CHILDHOOD.*

How They Are Spread.

By CHARLES HERRMAN, M. D.,
New York.

Attending Pediatric, Lebanon Hospital; Instructor in Diseases of Children, Columbia University; Chief of the Department for Diseases of Children, Vanderbilt Clinic.

In the 1898 edition of his *Textbook of Medicine* Osler says: "The epidemics of yellow fever are invariably due to the introduction of the poison,

*Read before the New York Physicians' Association, March 28, 1922.

either by patients affected with the disease, or through infected articles. Unquestionably the poison may be conveyed by fomites." Three years later, in 1901, he says: "No belief is more strong among the laity than that yellow fever is transmitted by infected clothing, and quarantine efforts are chiefly directed to the disinfection of fomites of all sorts shipped from infected ports. A remarkable series of experiments have been reported by the Yellow Fever Commission of the United States Army, which go far to show that the disease cannot be conveyed in this way. . . . These experiments conducted in the most rigid and scientific manner go far to discredit the belief in the transmission of the disease by fomites." In 1909 "go far to discredit the belief" is changed to "completely discredit the belief."

I have quoted the foregoing passages to show how hazardous it is to use such terms as invariably, always, never, unquestionably, in medicine and also to show that every physician is more or less influenced by the prevailing views as to the causes of disease.

In hardly any other branch of medicine has so much been taken on faith as in the method by which contagious diseases are spread. Personal impressions are one thing, scientific proofs quite another. It is interesting to note that much of the evidence brought forward to support traditional beliefs is to be found in the older literature. This evidence was obtained at a time when the modern views, more especially those relating to so called "carriers" were unknown. The cases cited are startling and picturesque, but they will not bear careful analysis. In the following I shall not attempt to treat all the commoner contagious diseases of childhood, or to cite all the evidence for and against the various theories of the way in which they spread, but shall confine myself to a very brief discussion of some of the more important aspects of the subject. I believe that the manner in which these diseases, more especially measles, scarlet fever, and diphtheria are spread can best be studied in the tenements and in the public schools. In hospitals and in private practice the total number of cases seen is small and the conditions are unusual and to a great extent unfavorable for the spread of these diseases. At the outset I should like to emphasize the fact that as practical sanitarians what we wish to know is not how these diseases *may* be spread; but rather how are they *usually* spread, not are they *ever* contracted in a given way, but *how frequently*. Our methods can never be absolutely perfect. What we endeavor to do is to prevent the spread of these diseases to the greatest possible extent with the least expenditure of energy and money and with the least amount of hardship and annoyance to the members of the family in which a case occurs.

The theory that the contagious diseases are spread through the air probably originated in a desire to give some explanation rather than none at all. Teething plays a similar rôle in the etiology of some of the diseases of infancy. The physician can find nothing pathological, so he blames the teeth, and everyone is satisfied. There is also something mysterious and attractive in the idea of air borne infection. But all the evidence is against it. The organisms of almost all the infectious diseases

quickly lose their virulence when exposed to air and sunlight. Students visit the wards containing patients with measles, scarlet fever, and diphtheria and rarely contract these diseases. But the strongest argument is furnished by the fact that when direct contact is prevented these diseases do not spread. Children with different contagious diseases may be kept in the same ward, the air circulating freely among all, and if contact is prevented by means of so called "boxes," partitions or the like, and if certain precautions are taken by the nursing staff no cross infection will result.

The experience with yellow fever shows how the importance of fomites as a source of infection may be grossly exaggerated, careful scientific experimentation having shown that soiled clothing, linen, etc., play no part in the spread of this disease. Here again we accepted an explanation because we had no better one. A careful investigation by Doty of rags coming from Egyptian ports in which infectious diseases were prevalent, goes far to disprove the danger from this source. To cite a personal experience, a member of my family was for over thirty years in the woolen rags business. Large numbers of girls were employed in sorting these rags, which came from all sources and must very frequently have been worn by persons having infectious diseases, and still there never was any reason to suspect that the girls contracted any disease from this constant handling; at no time were several simultaneously attacked with any of the contagious diseases nor were these diseases more prevalent among them.

The danger from rooms previously occupied by persons afflicted with contagious disease is probably much less than is generally believed. In my own experience on several occasions a family in which several children had a contagious disease moved out just before another family having young children moved in. The latter had not had these diseases, usually only one room had been disinfected and still none of the second group contracted the disease.

If rooms permanently harbored virulent organisms these diseases should be prevalent more or less continuously. Such is not the case. At certain times of the year there are very few cases; then we note a rise, the number of cases reaches a maximum and then diminishes. This is very strong evidence that infection takes place by contact with infected individuals. Disinfection of rooms is probably an unnecessary procedure.

In Providence, Doctor Chapin, the health officer, has had the courage of his convictions, and for some time he has abolished disinfection except in special cases. Since then there has been no noticeable increase in the morbidity from these diseases. Cases in which the disease was supposed to have been contracted from infected rooms can be better explained by contact with infected persons, mild unrecognized "missed" cases or with so called "carriers." In New York city over \$50,000 is expended annually in disinfection. About forty per cent. of this amount is for measles. Practically all sanitarians are now agreed that in this disease at least, disinfection is unnecessary. About the middle of January, 1909, the Department of Health of the City of New York decided not to disinfect rooms after measles. This was continued for about seven weeks.

Reference to chart one will show that there was only a very slight increase in the number of cases during that time. On March 1st, the disinfection of rooms was resumed, and during the following weeks there was the increase from week to week such as is regularly seen in epidemics, entirely unchecked by disinfection.

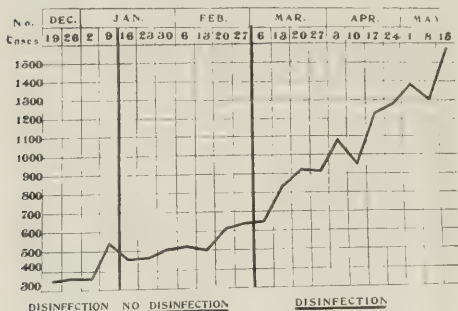


CHART 1.—Showing stability and increase of measles with and without disinfection.

You have all probably noticed two prominent advertisements in the subway cars, in which certain alleged disinfectants are highly praised. Is it to be wondered at that the public believes these statements? Every day, every hour these statements are staring them in the face, and their proper adviser, the physician, seldom has an opportunity to counteract their effect by a statement of the real dangers and how to meet them. Most people have a greater respect for the printed than the written word. The other day I was in one of our large drug stores. A lady came in to buy a preparation of cod liver oil for a delicate child. The clerk recommended vinol. She expressed some doubt as to whether it was indicated; but when the clerk pointed to the printed label on which it was stated that the preparation was especially valuable in delicate children, she was perfectly satisfied.

It has been customary to hang a sheet moistened with carbolic acid at the door of the sick room. The advantages of this as far as catching the dust, disinfecting and moistening the air, and preventing draughts are concerned may be neglected, the one real advantage is the warning to those who wish to enter. It seems to me that this could be better accomplished by using a red hanging, omitting the saturation with carbolic acid which adds nothing but a disagreeable odor. Another distinct disadvantage in the use of disinfectants is that it gives a false sense of security, much is done which need not be done, and much is left undone which ought to be done. Disinfectants as generally used do not disinfect. It is so much easier to sprinkle a little disinfecting solution than carefully to isolate the patient, prevent visitors from entering the room, etc. Early in my career as a medical inspector I came to the conclusion that isolation in tenements was impossible without the cooperation of the members of the family, especially the mother. But if we are to obtain their cooperation we must teach them how these diseases are spread. Printed matter alone will

not suffice. Possibly the public schools may act as educators.

The danger from desquamation has been overestimated. Evidence is accumulating which tends to show that it is rarely responsible. Almost all sanitarians agree that the late desquamation does not carry infection. Experimental inoculation with the scales from scarlet fever patients has not been successful. That the desquamation is not usually the source is shown by the fact that this disease is most frequently spread in the early stage before there is any desquamation. Again, a patient may be discharged from the hospital without a trace of desquamation remaining, and still on his return to his home he may infect other members of his family, so called "return cases," probably through contact with discharges from the nose, throat, or ears. I have repeatedly seen children in the tenements helping a brother or sister to remove the loose skin from hands without themselves contracting the disease. Most of the cases in which the disease is supposed to have been carried by scales accidentally or purposely enclosed in letters, will not bear careful analysis, as I have shown in a previous paper.

Mild unrecognized "missed" cases or so called "carriers" play the most important part in our inability to prevent the spread of contagious diseases. As will be seen by reference to chart two, notwithstanding routine disinfection, more careful isolation and medical school inspection, hospitals for contagious diseases, etc., the morbidity from measles, scarlet fever, and diphtheria has not diminished during the last twelve years. I have divided this period into two parts, the first half from 1900 to 1905, the second from 1906 to 1911. It will be noted that in the case of scarlet fever and measles there is an increase in the average annual morbidity. This is, I believe, due in great part to a more careful reporting of cases. Diphtheria shows a distinct de-

RATE OF MORBIDITY PER 1000 POPULATION.
MEASLES. — SCARLET FEVER. — DIPHTHERIA
NEW YORK CITY. 1900-1911

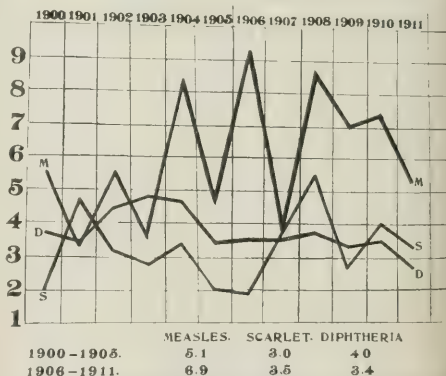


CHART 2.—Demonstrating the theory that so called carriers play the most important part in, and our inability to prevent the spread of contagious diseases.

crease. This is, I believe, primarily due to the more general use of antitoxine for immunizing purposes.

In the control of the spread of the contagious

diseases the weak link in the chain has been and will continue to be the existence of numerous "carriers," individuals who harbor the infectious material without being sick themselves. They go about innocently infecting others. As it is impossible to recognize and isolate all such persons, our efforts must for a long time be without definite results. But the recognition of the important rôle played by the carrier has served a good purpose. A certain number of such carriers can be recognized and rendered less dangerous, and, what is perhaps more important, recognizing their existence we shall not waste our energy in doing improper and unnecessary things. It is important to emphasize that the possibility of the conveyance of diseases by carriers goes far to disprove the theory that the disease is conveyed through perfectly healthy third persons who do not harbor the infectious material on their own mucous membranes. Such persons are usually supposed to carry the infectious material on their clothing, hair, etc., but a moment's reflection will show that it is much more likely that they carry such material in a virulent form on their own mucous membranes and then infect others in talking, coughing, or sneezing. It is significant that the diseases which are most contagious are those in which sneezing and coughing are regularly present, namely measles, whooping cough, and influenza. Much could be done by teaching children to turn the head when sneezing or coughing, to place the hand, or better a handkerchief, before the mouth or nose. For such as have no handkerchiefs, and the number is not small, paper ones can be provided at very little cost.

It is persons not things that are the sources of danger. Of what value is it to disinfect clothing, linen, carpets, utensils, etc., if the patient or those about him still harbor the infecting material. Physicians and nurses use gowns to protect their clothing, wash their hands and often their faces, but how many irrigate the nose and throat? Yet we know that the infectious material is usually found in these parts. It is impossible to recognize all carriers and if it were it would be impossible to isolate them. Disinfection, isolation, medical school inspection, and hospitals for contagious diseases cannot solve the problem. A marked reduction in the morbidity can be obtained in only two ways, either by the use of some method of immunization of the individual while exposed to a specific infection, such for example as we have in the use of the diphtheria antitoxine and typhoid vaccine; or by a method which immunizes more or less permanently, such as we have in the employment of vaccination against smallpox.

SUMMARY.

I should like to emphasize the following points:

1. As practical sanitarians we wish to know how contagious diseases are usually spread, not how they may be occasionally spread.
2. It is persons not things that spread these diseases.
3. In the vast majority of cases the infection is due to contact, either with a recognized or an unrecognized case or a "carrier."
4. The spread of contagious disease through the air, through desquamating scales, and through

healthy third persons, not carriers, seldom occurs and for practical purposes may be neglected.

5. The disinfection of fomites, rooms, etc., is to a great extent unnecessary, especially as all infected individuals and carriers cannot be controlled.

6. The carrier represents the crux of the whole problem. It seems unlikely that this difficulty will ever be entirely overcome.

7. On account of the existence of carriers, isolation, disinfection, improved medical school inspection, and special hospitals alone cannot have a marked influence on the reduction of morbidity.

8. This can be accomplished only by a method of temporary or permanent immunization against these diseases.

250 WEST EIGHTY-EIGHTH STREET.

THE GLYCYLTRYPTOPHAN TEST.

Some Further Experience Therewith, with Special Reference to Some Histories in Gastric Cancer.

BY G. A. FRIEDMANN, M. D.,
New York.

Physician to the Mount Sinai Dispensary, Vanderbilt Clinic, and
Beth David Hospital.

In order to arrive at a satisfactory conclusion in regard to a new laboratory test for a given pathological condition, investigation has to be made whether or not the same positive results with this test may be occasionally obtained in other pathological conditions. Should the test turn out to be negative in the latter, then it must be decided whether the test for the given condition can be considered of absolute or only of relative value.

The new test of Neubauer and Fischer for the diagnosis of gastric cancer has, naturally, aroused much interest. Opinions of its value differ widely. While some of the authors speak of it with great enthusiasm, others consider it of no value at all. It seems that some of the skeptics are encouraged by the late publication of Warfield. He showed that the saliva, which does not give an acid reaction to litmus, when mixed with neutral or faintly acid gastric juice imparts to the latter the power of producing tryptophan from glycytryptophan. His findings can minimize the value of the glycytryptophan test only when the latter is considered as pathognomonic. But as the object of this paper is to show that the new test is only of relative value, his findings do not interfere with the view herein defended.

It is not intended in this paper to enter into the technique of the test, as this has already been dealt with in many articles since the original one of Neubauer and Fischer appeared. Briefly it may be stated that the glycytryptophan, one half to three quarters of an hour after an Ewald test breakfast, is split by a hypothetical enzyme, supposed to exist in the carcinomatous stomach. Tryptophan, which is an amino acid, is set free. The presence of the latter can then be demonstrated with bromine water or with bromine vapor. A positive reaction is indicated by the appearance of a rose color. When gastric cancer is not present, a rose color is not obtained in the gastric contents with the above mentioned reagents, and on the further addition of

glycyltryptophan a yellow color can be noted.¹ According to Neubauer and Fischer, the following rules must be strictly adhered to:

1. The filtered stomach contents which are added to the glycyltryptophan must be examined for occult blood, as the fibrin of the blood may cause a positive reaction, where there is no gastric cancer.

2. Duodenal contents, such as bile and tryptic secretion, regurgitated into the stomach, may also produce a positive reaction in the absence of cancer. It is stated, therefore, that the filtered stomach contents should be first tested with bromine water. Only if negative results are obtained should the gastric juice be added to the glycyltryptophan, and after twenty-four hours' incubation at a temperature of 38° C., it should be tested for free tryptophan with bromine water and bromine vapor. With both tests great care is required. The bromine water must be added drop by drop; the bromine vapor allowed to descend into the test tube.

3. Gastric contents which show more than 0.36 per cent. of hydrochloric acid should not be used, as hyperacid stomach contents destroy the hypothetic cancer ferment, which produces the splitting.

Concerning the first precaution, I agree perfectly with Weinstein that fibrin does not necessarily cause a positive reaction in gastric contents. (See CASES xi and xxii.)

As to the second precaution, it can be stated that gastric contents very seldom give a tryptophan reaction after an Ewald test meal, even when there is much regurgitation of bile, as in pyloric insufficiency. (See CASE x.) Furthermore, in the duodenal contents of ten patients, which were obtained by the new devices of Einhorn or Gross, tryptophan could not be demonstrated with either bromine or chlorine water. On the other hand, a rose color could be distinctly demonstrated in three cases of gastropnoia (in one with anacidity, in the other two with hypacidity), three and one half hours after a Riegel test meal. As previous to performing the glycyltryptophan test we give the patient only tea or water with bread, the second precaution is not of great practical importance.

On the other hand, caution in carrying out the test is very important. If the test be positive, one obtains the rose color in two c. c. of the stomach contents, plus glycyltryptophan, after the addition of from five to six drops of bromine water. The reaction is intense after the addition of from ten to twelve drops, gradually becomes colorless, and, after thirty to thirty-three drops have been added, the liquid is usually perfectly yellow.

In a previous communication I gave a method by which to guard against overlooking a positive reaction, especially with bromine water. It seems to me that this control test, for which I refer to the original article, would be of value to those who have had little or no experience with the glycyltryptophan test.

The third precaution, against using hyperacid stomach contents, is not important either, as usually there is anacidity or hypacidity in gastric cancer. There is no doubt, however, that in some cases of gastric cancer there is hyperacidity, even when the

cancerous growth has not developed on the base of an old ulcer. (CASE vii.)

Lytle and Kober believe that tea on account of its tannin is a disturbing factor in the reaction. I did not arrive at such a conclusion in my work. Perhaps their assertion holds good for experiments *in vitro*. Strong tea may disturb the reaction, but, when weak, it will not do so.

The tryptophan test (without glycyltryptophan) of Erdman and Winternitz, and Glaessner, to which I called attention in my first communication, was studied about nine years ago. They obtained positive results at times in gastric cancer, and in benign pyloric obstruction as well. Except in gastropnoia, in which, as before said, I obtained positive results in three cases, I tried this test in one case of gastric cancer (CASE viii) with negative findings. Still I was not convinced that the test was valueless until I read Wolff, who states that the tryptophan test which was proposed by Erdman and Winternitz for the diagnosis of gastric cancer, has been proved worthless by Croner and others.

As a number of the cases in which the glycyltryptophan was made, are of some interest, abstracts of histories are added.

CASE I. K. W., forty-three years old, a patient of Doctor Goodfriend, of New York, was first seen at my office, August 17, 1911. He had been ailing for two years, complaining of constant, but not severe pain all over the abdomen. The pain was dull and gnawing. He had vomited several times in the first year of his illness, but never in the second. He was also troubled with belching, with extremely sour taste in the mouth, and at times felt something like a lump in the upper abdomen. He was dizzy and drowsy. Since the beginning of his illness, he had lost twenty-five pounds in weight. He had looked yellow, jaundiced (?), during the first year that he was ill. His appetite was poor. Malaria, while in St. Louis, was the only disease he had had before his present gastric trouble. Syphilis and alcoholic excess were denied.

Family history was negative.

Two weeks previous to his first visit, his gastric contents, according to the statement of his physician, were examined by a prominent laboratory worker, and were reported to the doctor as being "negative." At the same time an x ray picture was taken by a very competent radiologist, and the report of enlarged gallbladder was made. This second fact I learned from Doctor Goodfriend subsequently.

Physical examination, August 17, 1911. The patient was a pale, emaciated man, but not cachectic. Lungs and heart normal. Contracted abdomen of the spastic type. The patient was unable to relax his abdominal muscles and therefore palpation was impossible.

Blood.—Hemoglobin, sixty-eight per cent.; red blood cells, 4,000,000; white blood cells, 10,000; differential count, normal; blood pressure, 120.

Urine.—No albumin, no sugar, no bile. Indican, excess. August 18th.—On fasting stomach, 60 c. c. of fluid, acid in reaction, were obtained, containing an enormous amount of stringy mucus. Food particles were visible. Microscopically, starch granules, long bacilli, and immense number of rhizopoda were present.

Lavage. One roll and two cups of weak tea were given. The contents were removed without aspiration in three quarters of an hour.

Gastric contents. Free acid, none; total acidity, 28; lactic acid, strongly positive.

Three subsequent examinations yielded about the same findings, except that the total acidity was 30, 38, and 42, respectively. Long bacilli were absent on two occasions, but strings of mucus were constant. Tests for occult blood in the contents and stool were negative; long bacilli were present in the fresh stool.

The glycyltryptophan test was positive four times. The reaction was started by five to six drops, became strongly positive after ten or twelve, disappeared after twenty-three

¹The glycyltryptophan is furnished in bottles; to it toloul has already been added to guard against bacterial decomposition.

to twenty-six had been added, and the fluid was yellow after thirty-three to thirty-five drops. On no occasion was a positive reaction obtained before incubation, with bromine water. Bromine water gave a strong reaction.

September 3d. The patient succeeded in relaxing his abdominal muscles. Palpation did not reveal any mass in the abdomen, nor could the border of the liver be felt.

Diagnosis. Pyloric obstruction due to gastric cancer. Though operation had been advised on August 18th, before the glycytryptophan test had turned out positive, the patient postponed the same on account of his mother's illness; or, perhaps, because he doubted our diagnosis as the x ray picture showed an enlarged gallbladder and a few months before he had been seen by a prominent gastrologist who had diagnosed his disease as gastric catarrh. This I also learned subsequently.

It seems to me that this case is quite instructive from many points of view.

First, the gastric analysis may not have been made by the prominent laboratory worker himself, but possibly by somebody else in his laboratory; second, the glycytryptophan tests, though positive, did not add a single iota of information necessary for establishing the diagnosis; third, gastric cancer can run its course with the clinical picture of a gastric mucous catarrh, or cancer may develop at any time in a patient suffering from such a condition, contrary to the generally accepted opinion that only healed gastric ulcer may lead to cancer and that otherwise the latter develops with absolutely healthy stomachs. Finally, an x ray picture without routine laboratory findings is of no value in gastric cancer.

At the operation, September 8th, anterior gastroenterostomy was performed by Doctor Elsberg, at the Mount Sinai Hospital, and what had been thought an enlarged gallbladder was found to be a large pyloric cancerous growth. A radical operation was out of the question on account of infiltrations and adhesions.

For the failure to make an early diagnosis, or, as Dr. A. Gerster on one occasion expressed himself in a medical society in regard to similar cases, for the rotten apple which the surgeon receives, three facts were responsible: the prominent laboratory worker, indirectly the x ray interpretation, and possibly the gastrologist who had seen the patient a few months before.

In concluding this case, the large number of rhizopoda in the gastric contents should be noted, the presence of which makes one feel that, occasionally, the parasitic theory of cancer should not be altogether discarded.

CASE II. J. S., thirty-eight years old, referred to me by Doctor Bauerberg, of Yonkers, September 29, 1911.

She had been perfectly well up to six months before, when she went to the country after attending to her mother who had died of gastric cancer shortly before. After a dinner consisting of meat, chicken, and radishes, eaten with great appetite at her boarding house, she began to vomit and her bowels became watery and loose. It should be noted that all the other boarders had eaten the same meal and not one of them became ill. A physician who was called in treated her for ptomaine poisoning. The diarrhea ceased for a few days, but the vomiting did not stop. The attacks of vomiting came on a few hours after meals and usually also once or twice at night. The vomitus consisted of food particles without admixture of bile. There was no pain anywhere in the abdomen. The appetite was poor. Obstinate constipation. During the six weeks of her illness she lost fifteen pounds.

Physical examination. Very emaciated, pale woman. Teeth in poor condition, many of them carious. Enteropathic habitus. Floating kidney in the third degree on

the right side. A mass of stony consistence could be felt in the region of the abdomen.

On fasting stomach, 800 c. c. of stagnated food were obtained. No long bacilli, many yeast cells. Inflation with air showed the greater curvature four fingers under the umbilicus, the lesser two fingers above. Ewald Congo gave a distinct blue color, but the phloroglucin vanilin test was negative. The Congo paper gave a strong reaction (very blue) on account of a very large amount of lactic acid. Total acidity 60 to 65. The test for lactic acid was strongly positive. Glycytryptophan test was made twice, negative both times. A diagnosis of pyloric cancer was made, and operation advised. Patient did not agree to be operated upon. Three months later I learned from her physician that she was perfectly well. I do not know what was the actual condition in this patient.

CASE III. M. M., forty-three years, seen first, November 8, 1911. She had been troubled for twenty years with bulimia, which in the previous months had increased and in that time salivation had also developed. For three weeks preceding she had had diarrhea (three movements daily). Lost in weight in the past few weeks. Other complaints were of waterbrash and fullness after meals. Five years ago she had been operated on for gallstones. She never had icterus. The teeth were in a poor condition.

The physical examination did not reveal anything except a right floating kidney. Urine, negative. The stools looked clay colored just as in jaundice with biliary obstruction. Neither ova nor parasites were found, though they were carefully searched for. An enormous amount of meat fibres were present though she had not had meat for two days. Needles of fatty acids and high values of trypsin and amylase were found. There were no signs of primary anemia in the blood.

Stomach contents showed no visible nor microscopic stagnation of food and no long bacilli. Free acid after an Ewald test meal was twice absent. Total acidity—16 to 14, lactic acid strongly positive. The glycytryptophan test was positive twice.

The diagnosis was made of gastric cancer of the walls or fundus. The diarrhea was probably due to ulceration of the cancerous growth. Three weeks after having first seen her in the foregoing condition, she was very weak and highly emaciated. When I proposed that she go to a hospital (though certainly not for an operation), her main objection was that she would not be able to get her meals there quickly and often. I then lost track of the patient.

The diagnosis of gastric cancer cannot be doubted here. In this case the glycytryptophan test was of great help in establishing a diagnosis, though her teeth were carious and also salivation existed. What the cause of the bulimia of twenty years duration was, which symptom did not leave her in her cancerous state, but became on the contrary more pronounced, remains an open question.

CASE IV. W. K., forty-one years, seen September 20, 1911. Until within one half year had been in perfect good health. Chief complaints were attacks of sharp pain in the epigastric region, radiating to the right hypochondrium. Pain more pronounced on fasting stomach, than after partaking of food. Vomiting after meals only a few times during his illness. First attack of pain had occurred six months previously. Then he had been free from any symptoms for two months. Gained a few pounds in weight during his illness.

On several examinations of stomach contents after fasting, only from fifteen to twenty c. c. were obtained, with no visible food remnants, but under the microscope after the addition of one drop of Lugol's solution, a few starch granules could be seen, also after the addition of osmic acid fat globules were demonstrated. Free hydrochloric acid, 38 to 32, total acidity 64 to 68, no lactic acid. The glycytryptophan test was negative three times. After a suitable diet was ordered and lavage instituted by his physician, Doctor Bobrow, all symptoms disappeared. The diagnosis was made of partial pyloric obstruction due probably to adhesions from old cholecystitis.

January 6, 1912. Patient presented himself to me, a very sick man, with pain in epigastrium, and vomiting.

In the meantime he had been in the hospital for a few days, where the stomach tube was not introduced, his condition having been taken for an acute gastric ulcer. I obtained from his fasting stomach about one litre of brownish fluid (in the previous examinations the contents had been colorless). The test for occult blood was positive. Twice again the glycytryptophan test was negative.

The tryptophan test which was made rather for the sake of curiosity turned out to be negative three times.

Hyperacidity was found again several times.

The patient was again seen in the Vanderbilt Clinic. He did not look cachectic. A diagnosis of benign pyloric stenosis was made.

A pyloric tumor was found at operation, a gastroenterostomy performed by Dr. J. Blake on January 25th. Radical operation was impossible on account of infiltrations.

Epicrisis. The hyperacidity was in favor of a benign pyloric obstruction, also, apparently, the fact that there were intermissions with marked improvement during the illness. Not to speak of the negative glycytryptophan tests and tryptophan tests, the development of such gastric symptoms in a person who had been perfectly well six months before (without a history of gastric ulcer) should enable one, in the carcinomatous age of the patient, to make a positive diagnosis of cancerous pyloric obstruction. Another sign was important for the diagnosis of cancer, viz., the change in color of the gastric contents which became brownish compared with the color at the first examination. The remark was made before the operation that, from the clinician's point of view, on account of the two last mentioned facts it might be expected that a carcinoma would be found. The diagnosis, however, was recorded as benign pyloric obstruction.

An exploratory incision should have been insisted upon in September, when there were only microscopical stagnation and hyperacidity. However, the patient had not agreed to this, as improvement was for months marked. Patient is at present in a dying condition.

CASE V. R-l. Benign pyloric obstruction. Operation by Doctor Blake. Glycytryptophan test three times negative.

CASE VI. H-os, thirty-eight years old. Benign pyloric obstruction. Glycytryptophan test three times negative. Escaped from observation.

CASE VII. Z-n, thirty-six years old. Benign pyloric obstruction. Operation by Doctor Pool. Glycytryptophan test three times negative.

CASE VIII. G-tz, forty-three years old. Benign pyloric obstruction. Gastroenterostomy two years ago by Dr. J. Blake. Glycytryptophan test negative (three times).

CASE IX. M. E., forty-nine years old. Anacid gastric catarrh. Glycytryptophan test three times negative.

CASE X. C-r, forty-nine years old. Pyloric insufficiency and anacidity. Bile tinged contents on fasting and after Ewald's test meal, glycytryptophan test three times negative.

CASE XI. I. L., thirty-seven years old. Achylia gastrica and gastrogenous diarrhea. Streaks of blood in contents. Positive for occult blood after filtering. Glycytryptophan test three times negative.

CASE XII. R. G., twenty-seven years old. Gallstones and hypoaecidity. Glycytryptophan test once negative.

CASE XIII. O. P., twenty-eight years. Achylia gastrica and constipation. Streaks of blood in contents. Glycytryptophan test three times negative.

CASE XIV. G-l, fifty-five years old, Mount Sinai Dispensary. (Record card 849, male department, 1911). Carcinoma of cecum. Glycytryptophan test three times negative.

CASE XV. D., sixty years old. Vanderbilt Clinic (Record 1,128). Probable diagnosis, primary carcinoma of the gallbladder with pyloric or duodenal obstruction. Glycytryptophan test, once, negative.

CASE XVI. T-d, forty-one years old. Achylia gastrica. Free HCl, none, total acidity 6, no lactic acid. Glycytryptophan test, three times, negative.

CASE XVII. F. E., thirty-four years old. Tabes. Gastric crises. Hyperacidity. Glycytryptophan test, once, negative.

CASE XVIII. B-ck. Omental cyst (spindle cell sarcoma). Glycytryptophan test once negative.

CASE XIX. Br-r, sixty-one years old. Vanderbilt Clinic. Record card protocol 76,158. Ulcus ventriculi near the cardia with esophageal symptoms. Hyperacidity. Blood in the contents. Probable diagnosis, ulcer ventriculi near the cardia. Was sent to the hospital, but did not want to stay there.

CONCLUSIONS.

In making a résumé of twenty-one cases I reported in a previous communication, with the nineteen reported here, I have only once in my first series of cases found the glycytryptophan test positive in benign pyloric obstruction. This occurred with an enormous amount of sarcinae in the contents of the stomach on fasting. On the other hand I found it frequently positive in gastric cancer. This gives value to the test, but it cannot be considered pathognomonic. A case in which a positive glycytryptophan test only should lead one to suspect gastric cancer, I have not observed so far.

The fact that in no case of anacidity, except cancer, a positive reaction has been obtained seems to speak in favor of the test.

The relative value of the test is evident.

The tryptophan test without glycytryptophan is no longer worthy of serious consideration.

123 EAST NINETY-FIFTH STREET.

THE PROGNOSIS OF TUBERCULOSIS OF THE LARYNX.*

BY SILVIO VON RUCK, M. D.,
Asheville, N. C.

The prevailing opinion as regards the prognosis of tuberculosis of the larynx has at all times been most unfavorable, and prior to the work of Krause and Heryng tuberculous laryngitis was generally considered almost inevitably of fatal termination. Thus as late as 1880 Sir Morell Mackenzie (1) said: "The prognosis is always exceedingly grave, and it is uncertain that any cases recover." In 1883, Cohen (2) reported that in his experience only one per cent. of cases of laryngeal tuberculosis end in recovery, the acute cases terminating fatally in from six weeks to six months, and the chronic cases in from one to three years. Moritz Schmidt (3) in the first edition of his work makes the statement that when in 1880 he reported a number of cured cases his colleagues expressed the opinion that these could not well have been cases of actual tuberculous affections.

In the face of such a degree of hopeless pessimism it may well be inferred that the efforts in behalf of this unfortunate class of sufferers were perfunctory at best. In 1886, however, Heryng (4) insisted upon the curability of laryngeal tuberculosis and reported eight cases in which the diagnosis was assured and which had remained cured for periods varying from six months to nine years.

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In the first edition of his *Laryngeal Phthisis*, Lake cites Heryng (5) as having obtained ten per cent. of cures in 200 cases, and Schmidt (6) 5.33 per cent. cured and eleven per cent. improved out of 300 cases, and records out of 329 of his own cases 14.6 per cent. as cured (7). Even in these he says are included many cases of slight cord trouble. In his second edition, Lake (8) reports forty-four out of 211 cases or 20.85 per cent. as cured in addition to 14.2 per cent. much improved. Besold (9) as early as 1898 records results in sixty-nine cases, of which 318 per cent. were cured and 37.6 per cent. improved.

While these are the best results of the earlier work and leave much to be desired, one cure in five represents a most brilliant advance from the one in one hundred instanced by Cohen twenty years earlier. Even had not still better results been reported since, more than enough had already been accomplished to render entirely unjustified the gloomy attitude maintained by many later and quite recent observers, for example, West (10), who writing in 1902 says "The prospects of cure are very slight," and Tyson (11), who as late as 1905 still believed that "the prognosis is unfavorable at best."

The only adequate explanation for such opinions must lie in failure to recognize the disease and to apply suitable treatment in its earlier stages, and as Bezold (12) in 1901 says: "The reason for the general hopeless view is that the diagnosis is not made in time on account of neglected examination." That this is true is clearly reflected by the statistics of frequency of association of laryngeal tuberculosis with the pulmonary disease, which are indeed extreme in variation both as regards clinical observation and autopsy records.

Thus Koch (13) in the annual report of the Sanatorium Shömberg for 1907 records among 397 consumptive patients, only fifty-nine or 14.7 per cent. with laryngeal tuberculosis. Harris (14), who found laryngeal alterations in ninety-five per cent. of cases during life, accepted but twenty-three per cent. as actually tuberculous, while Mackenzie (15), basing his figures upon 100 examinations of consumptives in the second and third stage, determined the frequency at thirty-three per cent.

In contrast to these conservative estimates Williams (16) from the Brompton hospital gives 50.5 per cent., Keller (17) sixty per cent., Shaeffer (18) 64.6 per cent., and the latter states that in 310 cases of phthisis there were only eight or 2.6 per cent. in which the larynx was normal.

The writer has already referred in former publications to the related frequency of laryngeal localizations in pulmonary phthisis, reporting the aggregate 60.4 per cent. of 1,200 cases in which the larynx was the seat of tuberculous changes. Autopsy records in which it is fair to assume that, as a rule, the anatomical diagnosis is based on evidence of more extensive infiltrations and ulcerations also vary in like degree, ranging all the way from 13.8 per cent. of Willigk (19), forty-eight per cent. of 1,255 cases taken from the material of the Brompton hospital by Habershon (20), up to 100 per cent. of forty-one cases recorded by Warthin (21).

Even the higher degrees of frequency quoted, as

observed clinically, may be materially exceeded if the diagnosis is made in the light of the tuberculin test. As I have elsewhere pointed out, many cases in which the more incipient local changes noted may readily be attributed by most observers to catarrhal processes, show characteristic evidence of focal reaction to tuberculin preparations, given either for test purposes or in the course of their clinical application. Thus in one series of 309 of my own pulmonary cases, the coexistence of laryngeal tuberculosis was evident on inspection in 182, or fifty-eight per cent., and determined by focal reaction in eighty-four others, thus raising the total to eighty-six per cent.

To those who may question the specific action of tuberculin and allied products upon tuberculous tissues, and who would therefore reject the evidence of such local reactions as insufficient to determine the diagnosis, I may reply that I have never seen such reaction occur in a larynx which appeared to be perfectly normal, and that I have sought for them painstakingly in many such patients who were receiving tuberculin treatment because of the pulmonary disease. Furthermore, it cannot be denied that a tuberculous infiltration in the larynx must have a beginning, at which time the pathological alterations present are slight, need cause no symptoms, and are no more readily recognizable than the really incipient changes in the lungs.

In this connection also Meyer (22) seems to have thrown some light upon the question by his histological examination of the larynx of phthisical patients in whom no laryngeal changes, or but very slight ones, were observed during life, for in five out of six such cases he was able to demonstrate histological tubercle in the laryngeal tissues.

Granting then that tuberculous processes in the larynx are associated in the great majority of cases of pulmonary tuberculosis, the conclusion is unavoidable that the laryngeal disease is by no means so serious an affection as is generally believed, for we know from clinical experience that the latter does not become progressive in anything like so great a porportion of cases as is represented by the higher percentages of frequency quoted.

On the other hand, the low percentages recorded from clinical observation constitute that class of cases in which the local process has advanced sufficiently to give rise to symptoms which direct attention to the throat, and in which, as a rule, the laryngeal or the pulmonary disease, or both, are progressive, and the prospect for recovery the less, the greater the extent and severity of the local affections.

But surely it is no more justifiable to base conclusions in general as to the prognosis of tuberculosis of the larynx, wholly or almost entirely, upon the outcome observed in the more advanced cases than upon that of advanced cases of tuberculosis of the lungs, and in this connection the importance of an early diagnosis is strongly indicated. That spontaneous recovery from phthisis occurs not so rarely is well known, and that tuberculosis of the larynx may heal spontaneously there is trustworthy evidence from numerous sources. Thus Rosenberg (23) observed spontaneous healing of infiltration and ulceration of the false cords in a

man aged thirty-six years, who had pulmonary tuberculosis and tubercle bacilli in the sputum. Grayson (24) reported spontaneous healing of tuberculous ulcers in the larynx of a man aged twenty-five years in whom the vocal cords were almost destroyed before cicatrization occurred. Clar (25) records a like occurrence in a case of ulceration of the cords and posterior wall, in which the mucous membrane became almost entirely smooth. Additional instances are reported by Eisenbarth (26), French (27), Symonds (28), Heryng (29), Heitler (30), and others.

From the foregoing considerations it is evident that tuberculosis of the larynx as an affection *per se* does not warrant an unfavorable prognosis. As regards the prognosis in cases as they come under treatment, so many factors influence the course of the local disease that each one must be judged on its own merits.

Generally speaking, the outcome depends very largely on the extent and course of the associated pulmonary processes. If there are extensive and progressing destructive lesions in the lungs with considerable degrees of fever, as a result of which the patient's nutrition is materially impaired, and if loss of weight continues, we may well be apprehensive that an apparently quiescent laryngeal lesion may become active, or that one which would occasion no serious concern in a patient whose general condition is good, and who is free from active symptoms on the part of the lungs, may get beyond control in a patient in whom the lung disease is for the time being the predominating feature of the case and who is generally losing ground in consequence.

Nevertheless, it not infrequently happens that the disease in the larynx remains inactive, and even improves while the lung affection advances more or less speedily toward a fatal termination. On the other hand, the reverse may be the case, and as an illustration in this connection I recall a patient with old fibrous apical lesions who was in a very fair state of nutrition and free from fever, in whom the epiglottis was almost entirely destroyed and the laryngeal disease rapidly progressive. But such cases are very exceptional, and the cause of death is due directly to the progress of the disease in the lungs, rather than that of the larynx in the vast majority of cases.

Aside from the influence of other associated tuberculous affections the prognosis is modified more or less unfavorably by the coexistence of serious nontuberculous complications, especially those of a nature which materially interfere with the maintenance of nutrition; as for example, marked functional digestive impairment, diseases of the digestive organs, or diseases of metabolism, as an instance of which I may mention diabetes.

The baneful influence of pregnancy upon the course of tuberculosis of the larynx is so universally recognized that it is not essential to dwell upon it here. I would only call attention, however, to the fact that the 250 odd cases collected by Kuttner (30), of which ninety per cent. ended fatally during the pregnancy or shortly after confinement, represent a class in which the laryngeal disease was diffuse or at least well marked. With the almost uniformly unfavorable termination of such cases

my own experience accords. Still I do not believe that lesser degrees of tuberculous involvement of the larynx of pregnant women in whom the pulmonary disease is not far advanced and whose nutrition is fairly good or is steadily improving, justify either an unfavorable prognosis or the induction of abortion or premature delivery.

In a number of such cases, all of which were treated with tuberculin preparations, the pregnancy was allowed to go to term with no unfavorable consequences either to mother or child. In one of these, first seen in the third month, there was a rather extensive infiltration of the posterior wall with ulceration of one cord. The ulcer healed and the infiltration grew less before delivery. A second case showed infiltration of both vocal processes and one cord; the cord remained thickened and the voice husky, but no relapse followed. In a third case with infiltration of arytenoids and interarytenoid sulcus, sufficient in degree to cause hoarseness, the condition subsided entirely before delivery. In none of these has there been any return of laryngeal symptoms after several years.

I could add several others in which the laryngeal affection was treated during the pregnancy with equally happy results, as well as a greater number in which one or more pregnancies have followed the recovery of the mother without any recurrence of either the pulmonary or laryngeal disease.

By most writers syphilis is regarded as very seriously compromising the prognosis in laryngeal tuberculosis, and not a few rate it next to pregnancy, as the most unfavorable of all complications. This view, however, is not shared by others, who have reported cases in which the specific infection appeared to exert a favorable influence on the course of the tuberculosis.

My personal experience in these cases has not been at all discouraging and has not inclined me to look upon the coexistence of syphilis as of such grave import in cases in which without the added specific disease the prognosis of the tuberculosis alone would not have been in itself bad.

Concerning the location of the laryngeal lesion in its bearing upon the prognosis, there is so little if any diversity of opinion that this phase of the subject may be omitted for lack of space in a paper thus limited in extent.

Beyond the factors already considered the prognosis in general depends in no small degree upon the methods of treatment employed. From time to time reports have appeared from the institution with which I am associated of the results accomplished by a judicious combination of the local procedures commonly advocated, with the systematic use of specific products of the tubercle bacillus. It is entirely upon such combined methods of treatment that the views expressed in this paper are based.

In another paper (32) published recently I have considered in the aggregate the results recorded in the several institutional reports mentioned. Out of a total of 1,200 pulmonary cases the larynx was the seat of tuberculous changes in 725 or 60.4 per cent. Among the 725 cases were 161 with infiltrations sufficient in degree to cause well marked local symptoms, and 147 were advanced cases in which, associated with infiltration, ulceration in varying extent

was present. Thus in 308 cases, or in 25.7 per cent. of the 1,200 patients, the symptoms on the part of the larynx were definite enough to attract the patient's attention to the throat or to occasion the seeking of medical advice on this account alone.

Of these 308 cases, 178 or 57.6 per cent. apparently ended in recovery, and forty-five or 14.6 per cent. improved. In the remaining 47 cases the laryngeal affection was in an early stage and local symptoms were slight or absent entirely. These all ended favorably under specific treatment without the employment of any local measures whatever.

Combining the two groups we have 595 out of 725, or over eighty-two per cent., in which an apparent cure was accomplished.

Concerning permanency of results, an inquiry (33) made some years ago showed that of 602 patients with pulmonary tuberculosis in all stages, 68.8 per cent. were living without relapse from two to ten years after apparent recovery or arrestment of the disease. Among these 602 cases were the usual proportion in which the larynx was affected. But as this inquiry was not directed to the endurance of results, with regard to the laryngeal tuberculosis in particular, it does not afford material for the conclusive deductions desirable here.

In order to secure more definite information on this point, I have recently sent out inquiries to one hundred former patients in whom the extent of the local lesions in the larynx was sufficient to cause distinct and well marked symptoms and who were dismissed from treatment from two to ten years ago as apparently recovered or with the disease arrested as regards both the pulmonary and laryngeal affections. Up to the present writing I have been able to secure information concerning seventy four.

Of these, eleven have since died from one to four years after discharge. In one of these death was due to another cause than tuberculosis. In five there were no renewed symptoms on the part of the larynx; in two both the laryngeal and pulmonary disease became progressive; in two information regarding the larynx was unobtainable, and in one the fatal termination was attributable directly to the disease of the larynx. The latter was a case in which the arytenoids were chiefly involved.

Of the sixty-three patients known to be living the laryngeal disease has progressed in but two. Aside from occasional symptoms on the part of the larynx of more or less temporary duration, especially following a cold, in a few instances, the rest have suffered no serious relapse of the laryngeal disease. Without taking into account those who have since succumbed to either the pulmonary or the laryngeal disease, or both, there remains, nevertheless, over eighty per cent. of lasting results.

What has become of the twenty-six patients of whom no information has been obtained is of course questionable, but even assuming that all of them have suffered relapses of the laryngeal disease there are still left over sixty per cent. in whom the recovery may be accepted as assured.

In commenting upon these statistics, it is but fair to state that among the cases which were the subject of the foregoing inquiry there were not included cases of far advanced and diffuse laryngeal lesions, or cases of marked perichondritis, or extensive tissue destruction of the arytenoids or epiglottis.

ties. We are all familiar with the almost invariable outcome of such cases, and it could serve no practical purpose to inquire years after their discharge into their ultimate history.

In summarizing the points which I have attempted to elucidate in the preceding pages I wish to emphasize the following:

1. Tuberculous changes are present in the larynx of patients suffering from pulmonary tuberculosis much more frequently than is generally recognized.
2. The disease in the larynx in its early stages causes, as a rule, no definite or but slight subjective symptoms.
3. For this reason the physical examination of every tuberculous patient should include as much as a matter of routine, the inspection of the larynx as an examination of the chest.
4. That slighter degrees of thickening of the mucosa which many observers are willing to accept as catarrhal are not infrequently tuberculous in nature, and may well suggest to the laryngologist who notes them in the course of his routine practice, the propriety of a physical examination of the chest.
5. That finally the prognosis of tuberculosis of the larynx in the earlier stages is no worse than that of the disease in the lungs.

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THE PATHOLOGY OF CHOREA.*

BY FRANCIS A. HULST, A. M., M. D.,
New York,

Pathologist to the Brooklyn Hospital, St. Mary's, and
St. Catherine's Hospitals.

This is a subject in which our knowledge is only relative, a field in which there is yet much to be investigated. Opinions differ in many points relevant to the subject, and arguments may be put forth to substantiate various theories. Having been asked by your chairman to discuss this matter with you, I

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find myself with two courses between which I may choose. One is to enter into a lengthy discussion, setting forth the various ideas, balancing the pro and con, and leaving you to draw your own conclusions. The other course, which I have chosen to follow, is briefly to mention such facts as have been established and to comment on my own very limited observations in this class of cases.

Chorea is classed as a functional nervous disease. It is discussed under this heading in all medical literature, and belongs to the realm of the neurologist. How soon it will be taken from this position and placed under infectious diseases is a question that is raised by some. The etiology of chorea is as yet obscure, but its relation to infectious diseases and especially to acute rheumatism is marked. Not all cases of this disease are so characterized, and among the causes set down are physical and mental shocks, local irritation such as intestinal worms, gastric disturbance, dentition, and mental and ocular fatigue. The existence of such lesions act merely by irritating at a distance the motor elements and their irritation may be realized at other points of the centrifugal pathway. Hysteria is a strong element in some cases, and the general health, state of nutrition, and the habits of the child must be taken into account.

In such a general consideration I believe we can divide the cases into two classes, in which there is, on one hand, a definite cerebral lesion or irritant, and, on the other, an irritation elsewhere in the body, giving rise to reflex disturbances in the neuromuscular mechanism. In attributing an infectious cause to the former, it is not fair to use examples of the latter to refute such a hypothesis. Neither is it just to make claim for all cases of chorea of an infective agent, for such could not be substantiated by our present data. The nervous twitchings of some children and the hysterical imitation of others to simulate a true chorea should not be accounted for on the same basis, nor classed in the same category with those cases which seem to have a definite relation to some infective process. Furthermore, the relation of even the second class of cases to an infection may be asserted in some instances in that a nervous system weakened by some insidious toxemia may be more susceptible to the influence of shocks and mental strain and reflex irritation, or that a nervous system so unbalanced is a suitable ground for the development of the infecting agent. Such a reasoning correlates to a great extent the etiology of the cases falling into the two classes which I have made.

Rheumatism is the general disease with which chorea is most commonly associated. When we know more about rheumatism we shall doubtless know more about chorea. The latter is known to follow, or be associated with other acute infections in children such as measles, scarlet fever, variola, pneumonia, influenza, etc. These show a small proportion, while rheumatism is variously given as associated with ten to fifty per cent. of the cases. This fact, however, gives rise to the belief that a variety of organisms may cause the necessary cerebral irritation to produce chorea. There are a variety of organisms that may produce rheumatism so far as we know. The bacteriological findings are not con-

stant. *Micrococcus rheumaticus* was described about twelve years ago and has had more evidence placed against it as a specific etiological factor than any other organism which has been described in this connection. It is an organism not unlike the ordinary streptococcus and has not received general recognition as a separate species by bacteriologists. There may be a certain form of streptococcus which may always cause rheumatism.

It was thought at one time that such a variety existed for and was exclusively confined to erysipelas. That ground is no longer held and, in all probability, the term *Micrococcus rheumaticus* will be dropped and the cause of rheumatism associated with any streptococcus whose virulence and reaction in the tissues in which they find themselves is such as to produce arthritis and its attending symptoms. While bacteria, as a rule, tend to develop toxins, either intracellular or extracellular, more or less constant to their species, there is every reason to believe that these toxins are modified to some extent by the media in which they grow. This may be observed to a certain extent *in vitro* by noting the virulence of bacteria grown on different culture media. It is reasonable to believe that the host has some influence on the production of bacterial toxins *in vivo*. I do not necessarily mean the personal resistance against infection, but that the nature of the tissues involved, by supplying different media for bacterial development, influence or modify the poisons produced by these bacteria in their metabolism. Thus toxins and bacteria come to have a selective action on tissues, and this may be due to the previous habits of a given strain rather than to a different species. The pneumococci in lesions outside the lungs produce phenomena similar to the streptococci, and virulent staphylococci may be the cause of symptoms differentiated from the former only by a bacteriological examination. If we are allowed to use this as a basis of the bacteriology of rheumatism, we may further contend that chorea is largely due to a direct invasion of the meninges of brain tissue by the same organism or organisms, or their toxins.

The study of lesions produced in the course of chorea has been necessarily limited, and is not altogether satisfactory. Few patients die in the acute stage and only a small proportion of these are available for post mortem study. The changes which are found in extraordinarily severe cases which have ended fatally from extensive cardiac or embolic complications rather than from the chorea proper, cannot represent the anatomy of the disease. There are, however, certain changes which are fairly constant in such cases as have been reported. To summarize these findings, allow me to quote briefly from Dana (*Textbook of Nervous Diseases and Psychiatry*, Seventh edition, p. 555).

Chorea has no definite anatomical basis, though the seat of the disease is in the brain. The irritant seems to come from and act first on the bloodvessels, causing in severe cases an intense hyperemia with dilatation of the vessels, small hemorrhages, and spots of softening. There are infiltrations of perivascular spaces with round cells and swelling and proliferation of the intima of the small arteries. The process suggests a low grade or an initial stage of an inflammation. The cause is probably an infective microorganism or a humoral irritant similar to that causing the rheumatic symptoms and heart lesions.

. . . In ninety per cent. of cases (Osler), especially in long standing cases, there are fibrinous deposits on the walls of the heart.

In a review by Raymond of seventy-nine autopsies he reaches the following conclusions: In persons who succumb in the course of simple chorea, lesions of the brain and heart are most common. Lesions confined to the encephalon are rare, as most frequently the heart and cord are infected at the same time. Hyperemia is frequent and there follows softening and chronic encephalitis. The softening is due to the emboli frequently found in the cerebral vessels (quoted in the *Twentieth Century Practice of Medicine*, x, p. 661).

Chorea corpuscles described by Elischer are often found, but are equally developed in other infections. They consist of small bodies of a hyaline nature, found in and around the arterioles and perivascular spaces through the brain and cord. While these are not believed to be characteristic of chorea, being found with equal frequency in other infectious diseases, they point again to the infective character of this disease.

Poynton (*British Journal of Children's Diseases*, February, 1912) finds in histological sections of the pia mater in cases of chorea, a cellular exudation about a bloodvessel, and diplococci in the near vicinity. This is very similar to another section from the pia mater of a rabbit which had been previously injected intravenously with *Diplococcus rheumaticus* and in which had developed certain rheumatic and muscular symptoms like chorea. His further description of the histological change is in accordance with what has been stated, viz., hyperemia, minute thromboses, cellular and serous exudation, and probably in severe cases some little fibrosis. In the cerebral tissue he finds minute areas of softening. The nerve cells, particularly in the cortical regions, are swollen and show phenomena of chromatolysis. Degenerated nerve fibres were only rarely found. The character of these changes point to a toxemia of a mild degree. He draws the conclusion that the rheumatic infection does not thrive with great facility in the cerebral tissue or produce there toxins of extreme virulence, for if that were the case, there would be much necrosis of cells and subsequent degeneration of the axis cylinders and the development of a spastic diplegia of greater or less severity. Though not severe, the changes in the nerve cells are widespread.

What has been said in regard to the meagreness of findings in post mortem pathology is even more true in clinical pathology. I find little work done in this line, and such as has been done is of a negative nature. There was a case of chorea at the Brooklyn Hospital in the service of Doctor Butler this winter in which all the usual laboratory examinations were negative, except such as could be accounted for secondarily.

CASE. The case was of a boy about nine years old, whose family history showed a rheumatic tendency on the part of the father, and whose personal history included previous attacks of pains in the limbs with a general ill feeling, but not severe enough to compel him going to bed, or any special attention on the part of the parents. The illness in question began with an irritability and disinclination to play and loss of appetite. One week later he began the choreic movements, which increased but were confined to the arms, head, and respiratory accessory mus-

cles. On admission he appeared to be well nourished and not anemic. The heart was normal in size, but a loud systolic murmur could be heard all over the precordium. Otherwise physical signs were negative. He had a temperature from 100° to 101° F., the first two days and from 99° to 100° for the next month.

A blood count at the time of his admission showed 8,200 leucocytes with eighty per cent. polynuclears. While this total count does not indicate an infection the proportion of polynuclears for a child of this age is high and suggestive. The red count does not seem to have been taken at this time. A blood culture taken soon after admission showed no growth. At the end of a month the hemoglobin had dropped to 45 and returned to 57 in another three weeks. This speaks for a secondary anemia similar to that usually found after rheumatism. The urine was normal through the early course of the disease.

Signs of kidney irritation appeared only when Fowler's solution was pushed. Then a trace of albumin and a few casts were found, all of which cleared up after discontinuing the drug, and returned when it was again pushed. This is not the only case where arsenic was pushed to this result in my knowledge and in one case, I believe, paved the way for a nephritis which, aggravated by a subsequent cardiac lesion, led to a fatal issue.

In conclusion there is little to say. We are still in the theoretical stage. All cases should be studied carefully by repeated blood examinations, if possible cerebrospinal fluid tests, and in all means possible during the course of the disease, for there will still be little chance for much advancement of knowledge in post mortem cases.

1249 DEAN STREET, BROOKLYN.

CHOREA.*

BY FREDERIC C. EASTMAN, A. M., M. D.,
New York

This paper upon the assigned topic for the evening has not been designed as an elaborate and systematized account of chorea, for two reasons: 1. Because time will not permit; 2, it would be much more profitable for one to consult a standard text-book upon the subject. It has been the aim rather to simply choose for consideration certain phases in the etiology, symptomatology, and treatment of the disorder that may carry points of peculiar interest or afford a basis for later discussion.

There are many anomalies in the history and practice of medicine, but none is greater than the use of the term chorea, which is employed to blanket so many absolutely unrelated conditions, held together simply by the single thread of spasmodic muscular contraction.

Chorea, from the Greek *choros*, a dance, was a term used originally during the middle ages to denote the epidemic hysterical outbreaks occurring during periods of intense religious excitement, when, through imitation, whole communities at times became affected with convulsive movements of the body and extremities. The victims were popularly supposed to be possessed of evil spirits and many sought relief at the shrines of the various tutelary saints, among whom the most popular were St. John and St. Vitus. So many were cured, particularly at the latter's shrine, that the condition became known as St. Vitus's dance, and now this term has commonly come to be associated with Sydenham's chorea, a disease of entirely different

*Read before the Section in Pediatrics of the Medical Society of the County of Kings, March 2, 1912.

nature. In the same way, we have such disorders as Dubini's electric chorea, habit chorea, posthemiplegic chorea, Huntington's chorea, chorea major, etc., all huddled under the same roof, but differing widely in etiology, pathology, and symptomatology. The term chorea, when used alone, has become so closely associated with Sydenham's chorea that in order to bring some system out of chaos, I shall limit discussion to Sydenham's chorea and the naturally related chorea gravidarum, chorea insaniens, and senile chorea, and will discard those varieties that do not conform to some definite symptom complex; so, with that idea in mind, some such definition as the following is suggested: Chorea is a disorder, chiefly of childhood, caused by some infectious agent or its toxine, characterized by involuntary muscular contractions, resulting in movements of a purposeless character, and associated with psychic manifestations.

When we come to discuss the etiology of chorea, there is one important point to be borne in mind, and that is the marked influence of heredity. Study of the parents will, in most instances, demonstrate why the child is choreic; in other words, that the disease is simply an index of the heritage of an unstable nervous constitution. In fact, we may almost speak of the choreic temperament, for most of these children are so active and show so much motor unrest when well, that when they do have chorea it is often extremely difficult to say where the normal movements cease and when the manifestations of the disease begin. On such a soil it takes but little intoxication of the nervous system from a relatively mild infection, rheumatic or otherwise, to produce a well developed case of chorea. In early childhood all the voluntary movements of the normal child are irregular and incoordinate, and even when it is not attempting to perform a voluntary act, there are more or less irregular movements taking place in the extremities. We commonly speak of this condition as being due to spinal action uncontrolled by the inhibitory power of the brain; as the child becomes older, he gains control over his motor actions. In the case of the child of nervous temperament, there is delay in gaining motor nerve control, and it is in these years in which the motor inhibitory apparatus is not completely developed, and in which mental excitement uninhibited is transformed into motor action, that we get most of our cases of true chorea. The fact that it is comparatively rare to see a case of chorea much after puberty, and the additional circumstance that in hereditary or Huntington's chorea the disease appears in each succeeding generation in middle life, indicating a breakdown from congenital defect in the development of the motor tracts of the brain and cord, would, perhaps, indicate that a certain percentage of cases of chorea minor might be due to delayed development of the conduction paths, analogous to the instances of defective myelinization that are met with frequently in children of backward development. Obviously it is not necessary to show definite anatomical defects in order to explain the phenomena of chorea. With a highly strung nervous organism which reacts sharply to every stimulus, there is needed but the additional excitation of some

toxic agent to throw all the motor apparatus out of gear. The fact that the disease is almost unknown among the lower races, that the full blooded negro and Indian in our own country rarely suffer from the disorder, is corroborative of this view.

The relationship between chorea and rheumatism is interesting. In reading the literature of chorea, one is astonished at the variety of opinions held by different writers as to this point. Perhaps the most general view is that there is a rheumatic association in about twenty-five per cent. of the cases, but a good many men assert a rheumatic basis in almost every instance, and some have even gone so far as to say that chorea is as good evidence of rheumatism as a gumma is of syphilis, and these observers point to every muscular twinge as evidence of their contention. It would seem as though these wide variations of opinion could be harmonized if there was only some agreement as to what is meant by rheumatism. Rheumatism is pretty nearly as bad a term as neurasthenia, and covers almost as many different conditions. We have in acute rheumatism, or rheumatic fever, a definite disease entity, probably of infectious origin, and there is no question that we frequently find chorea associated with it or appearing as a sequel, but the writer is inclined to agree with Williams, Fagge, and others that what is ordinarily termed chronic rheumatism is never a chronic form of true rheumatism at all, but is due to direct sepsis or to toxines set free from the gastrointestinal tract by any cause capable of disturbing bodily metabolism, and which attacks the white fibrous tissue of joints and the sheaths of muscles and nerves. If we accept this view, it is easy to explain the occurrence of every case of chorea. We must have: 1. An unstable nervous organization; 2, anything, such as bad hygiene, fright, anemia, etc., that can upset the bodily functions to the extent of liberating toxines, which in turn irritate the motor tracts and cause chorea. It is reasonable to assume that fright or shock is competent to bring about such a condition, for we so frequently see cases in which myositic deposits are found to develop almost immediately in the course of the traumatic neuroses.

It is almost universally stated in the various textbooks on the subject, that the great majority of the cases of chorea occur among the poorer classes, with their bad hygienic surroundings, poor and badly cooked food, etc. It may be so, but the children of the well to do are quite as apt to have their digestions impaired by rich foods, pastries, and candies, and by being unduly pampered are rendered unfit to withstand disease. It has always seemed to the writer that there was something wrong about those statistics that show such a startling disproportion in the occurrence of chorea. Perhaps it is because most of them are founded upon hospital and dispensary records, for the neurologist is bound to see a much greater number of cases relatively in his clinics than in his private practice, for the pediatric and general practitioner are often inconsiderate enough to hold on to many of the well to do patients themselves.

One hears a good deal about the causative effects of eye strain, enlarged tonsils, adenoids, worms, and

other reflex irritants. If we accept the toxic theory, they probably are only rarely sufficient in themselves to set up enough disturbance in the metabolism to bring about chorea, but acting as a constant irritant to the already overstimulated motor centres, they should be corrected whenever possible.

Imitation plays a practically negative rôle in the production of the disease. Probably all cases due to imitation are hysterical, and this accounts for the epidemics that occasionally occur in schools and convents. It is fairly common to find hysteria associated with true chorea. The writer has a case under observation at the present time which developed a few weeks ago following a dog bite. The movements are of the purposeless type and are undoubtedly choreic, but the child has frequent hysterical convulsions, general analgesia, lost pharyngeal reflex, and exaggerated knee jerks with lost plantar reflexes.

One word as to the seasonal relationship of chorea. A majority of the cases occur in the spring. It is a time when the child's nervous system is exhausted and the general nutrition poorer because of the greater amount of indoor life, the confinement of school, and the excitement and strain of examinations, and in the adult it is the period of reaction following the months of greatest business and social activity. We find the same relationship with many other nervous conditions. It is well known that the greatest number of suicides occur in the spring, and that the insanity curve almost regularly reaches its maximum in May or June.

One may roughly divide the symptoms of chorea into mental and motor. The mental are usually the first to make their appearance in the form of peevishness, irritability, depression, and lack of emotional control. In most cases this is all, but occasionally there occur mental symptoms of a more alarming type, even to the degree of acute mania, when the condition is known as chorea insanienis. Another form of mental disturbance that may be directly associated with chorea is an acute hallucinosis. The writer saw a case of this sort develop in a child of fourteen years. The illness started with an acute tonsillitis, accompanied by swelling of various joints. Within a day or two choreic twitchings appeared, and at almost the same time, hallucinations of sight. They were of the same type that we meet in delirium tremens and took the form of animals, insects, men lurking behind the doors, shadows, etc. They differed from the hallucinations of delirium tremens in this respect, that as soon as the visions passed away the child realized their unreality, although she was regularly frightened during their occurrence. The choreic manifestations subsided within a couple of months, but her hallucinations were so vivid that it was necessary to have her committed to a State hospital, from which she was discharged as cured at the end of six months.

The motor apparatus is profoundly affected in chorea. The muscles show at least three important functional modifications: 1. Involuntary but conscious twitchings; 2, inability to maintain steady contraction; 3, loss of power. If the patient is directed to grasp the physician's hand and hold it

firmly, inequalities of pressure will be observed. Relaxation or sudden increase of muscular tension, or both, are noticed. Of more importance is loss of muscular power, which is practically always present. It exists in varying degrees in different cases to the point where it constitutes the chief symptom and is then known as chorea paralytica. The term chorea paralytica is somewhat misleading, because a true paralysis probably never occurs. The volume of the muscles, electric responses, and deep reflexes are unaffected, even in the most severe cases. There is a distinct lack of power in the choreic patient to use the will in making voluntary movements. This condition is sometimes mistaken for paralysis, but it is not from absence of muscular power that the movements cannot be made. One will often notice this in directing patients to perform some voluntary movement. They will hesitate for some time and act as though summoning all their will power, and then the movement will be performed quickly and fairly accurately. As has been said, a certain amount of muscular weakness exists in almost every case, but does not usually amount to more than a condition of paresis. These pronounced muscular pareses are perhaps due to simple exhaustion of the motor centres and may be analogous to the temporary exhaustion pareses that sometimes occur after an epileptic convulsion.

The facial movements are interesting. At first they simply overexpress emotion, and we have all noticed the quick smile and equally rapid frown of our patients. A little later, the facial movements do not appear to correspond to any particular emotional attitude, and the expressions of pleasure, displeasure, fear, and surprise are seen in rapid succession. Perhaps the most apparent of these are the expressions of displeasure and surprise due to alternate depression and elevation of the eyebrows. A blank and vacant expression is characteristic of the disease when the facial muscles are at rest. Another point regarding the facial movements is that the muscles of the face and tongue are almost invariably the last to stop twitching, and in the tongue especially we will find incoordinate movements when the patient is otherwise apparently well. Careful observation of this point will sometimes show that a so called relapse in a given case is simply an exacerbation of one that has never entirely recovered.

Cardiac complications of some sort appear in almost every case. Still avers there is some degree of dilatation in practically every one. We almost universally get disturbance of rhythm and rapid action. The altered rhythm is attributed by many to chorea affecting the heart muscle, but it seems more reasonable to refer it to functional disturbance and respiratory irregularities which are so frequent in this disorder. A rapid heart will sometimes persist after the attack. Cardiac murmurs occur in about one third of the cases, some organic, some merely functional. Mackenzie, in an examination of thirty-one cases from one to five years after the attack, found 66.6 per cent, marked by organic heart lesions. Osler reports fifty-one per cent. of cardiopathies. These figures seem astonishingly large and are difficult to credit. It has not been the writer's

personal experience to find any such proportion of organic lesions following chorea, but the ear of an Osler or a Mackenzie is much more highly trained to detect any slight abnormalities than that of the ordinary observer, but it is at least difficult to believe that so large a proportion of patients can have lesions sufficiently grave to cause practical trouble in later life.

Before considering the treatment of chorea, it may be well to say a word concerning two or three of its modified forms. Chorea of pregnancy is probably the same in Nature as Sydenham's and answers all the requirements of our definition. It differs simply in that it occurs in adults, that it is due to toxines generated during pregnancy, and in common with all cases of chorea in adults, the danger of heart complications is greater, and there is frequently a grave prognosis as to life, both for the mother and fetus.

Chorea insaniens also belongs to chorea. This extremely rare condition probably differs simply in degree from ordinary chorea. It is characterized by wild mania and intense muscular movements, ending fatally in over forty per cent. of the cases.

Chorea paralytica is simply a form in which the muscular weakness is the predominant symptom.

Senile chorea may occasionally be of the true type, so it has been included in this classification, but in most instances it is due to gross organic changes in the brain and is frequently associated with dementia.

All other so called choreas, including Huntington's, Dubini's electric chorea, habit choreas, chorea major, etc., would be denominated by the writer as choreiform affections, because they differ from true chorea, not only in many of their symptoms, but also in their pathology and etiology.

Chorea partakes in its course and symptoms of the character of an acute infectious disease of self limited duration and should be treated accordingly. Almost every one is agreed as to the necessity for strict rules relative to avoidance of fatigue, the preservation of strength, and maintenance of rigid hygiene, but there is a good deal of difference of opinion as regards medication. Emotional excitement has the greatest influence upon the muscular unrest. Mental rest is therefore important, and the fact that the twitches generally cease during sleep confirms this. Some differ as to the degree of rest required during treatment. Chorea is at all times sufficiently serious to demand careful attention, and all patients do better, the course of the disease is shortened, and danger of complications lessened by excluding anything that tends to produce mental excitement. School work should be forbidden in every instance, and in cases that are at all severe, the writer believes the patients get along much better if all visitors are excluded and the child is left alone with its mother or a nurse. It is needless to say that threats and punishment should be avoided. When these measures do good, as sometimes occurs, we have to do with an imitative or hysterical chorea. Excepting in the severe cases with marked muscular paresis, a partial rest cure seems to act well. Keep the child in bed until noon and then give it moderate outdoor exercise

in the company of an older person for an hour or two in the afternoon. Massage, by furnishing passive exercise, and its soothing effect, acts well, especially in the cases that are too severe to be allowed outdoors. It is important for the choreic to sleep long and soundly. If the sleep is restless and disturbed, warm baths at bedtime in the mild cases, hot or cold packs in the more severe ones, avoiding hypnotics if possible, on account of their depressing effect upon a heart that is ordinarily in more or less difficulty.

Collins recommends as one of the best measures in contributing to maintenance of nutrition, and at the same time the comfort and quietude of the patient, the shock and counterirritation of cold water, poured from a height, or thrown against the back and spine, once or twice a day. In cases in which the thrashing of the patient is apt to cause injury, the bed should have padded sideboards; a hammock is even better, as it is almost impossible for the child to injure himself in one of them.

A diet having milk as its basis, supplemented occasionally by fruits, vegetables, and cereals, acts well. If there is trouble digesting the raw milk, it can usually be overcome by peptonization, or by giving it in the form of kumyss.

The medical treatment of chorea, as in all diseases in which the pathology is uncertain, is a variable quantity. Antirheumatic treatment appears to be rational in those cases in which there is a clear rheumatic association, and it does do good in the relief of purely rheumatic symptoms, but in the experience of the writer it never seems to have the least effect upon the chorea itself. Arsenic as a remedy is regarded from varying viewpoints by different men. Many believe the common view of its high value is a mistaken one and that its worth is simply that of an alternative which should be used only in small doses. Others, as Allen, believe the patient should be saturated with the drug, maintaining it will demonstrate its usefulness within the first two weeks, if at all. Some such view is held by Williams, who advocates giving from fifteen to twenty minims as an initial dose and continuing the same for a week or ten days, in any patient over ten years of age. The writer has never had sufficient courage to experiment with this form of treatment, being deterred by a too vivid imagination of possible arsenical neuritis, a disturbed gastrointestinal tract, and possible liver and kidney complications. But Williams asserts it does good in the great majority of cases, that in some instances it is brilliantly successful, while in a few cases it fails completely. He recommends in connection with the arsenic, absolute rest in bed combined with a diet from which fish, flesh, and fowl are rigidly excluded. He adds that in his experience ergot, in doses from twenty minims to a drachm, increases the proportion of cures. He also states that the cases not helped by arsenic are relieved by trional, in ten to fifteen grain doses.

Several European writers have recently been recommending salvarsan, but such radical treatment in a disease that is usually self limited hardly seems justifiable.

1268 BERGEN STREET, BROOKLYN.

THE PROTEINS.

By DONALD D. VAN SLYKE, PH. D.,
New York.

(From the Laboratories of the Rockefeller Institute for
Medical Research.)

(Concluded from page 261.)

PARTIAL HYDROLYSIS.

It remained to find whether the amino acids are bound together in the proteins in exactly the same manner as in the synthetic peptides of Fischer. This has been done by submitting proteins to treatment with mild hydrolytic agents which only partially break up the compounds formed, and isolating from the products peptides identical with those made synthetically. In 1902, Fischer and Bergell obtained the peptide glycyl-alanine from silk partially hydrolyzed with acid.¹⁸ In 1905, Levene obtained from a tryptic digestion of gelatin another peptide, prollyglycin,¹⁹ which proved identical with the prollyglycin later synthesized by Fischer and Reif.²⁰ A considerable number of other peptides have been isolated from partially hydrolyzed proteins, chiefly by Fischer, by Abderhalden, and by Osborne.

Fischer and Abderhalden have isolated also a tetrapeptide containing two molecules of glycocoll and one each of tyrosin and alanin.²¹ This substance is precipitable by ammonium sulphate like the albumoses. This precipitability of a comparatively simple peptide made it appear possible that the so called primary albumoses might merely be mixtures of such peptides, and not as formerly believed, of complexity approaching that of the proteins. Investigations which have been carried out during the past two years by Levene, the writer, and Birchard,²² have disclosed the fact, however, that the older view is correct. The albumoses are complex substances, containing all of the amino acids found in the native proteins. That they are bound together, as in the proteins, and are not present merely as mixtures of the lower peptides, is shown by the fact that aside from the end amino group, only about one per cent. of the nitrogen is in the form of free amino group.

CHEMICAL PROPERTIES OF THE PROTEINS.

The chemical behavior of the proteins is largely what one could foretell from the theory of their amino-acid structure; they are like the amino acids, amphoteric electrolytes capable under proper condition of combining with either alkali or acid. The basicity is explainable by the free NH_2 groups in the protein molecule. Lysin²³ and arginin²⁴ each

contain two NH_2 groups, one of which is bound in the peptid linkings. The other is in both cases certainly free in the protein molecule, chemically active, and strongly basic. It is probable that the imidazol group of histidin is also free and exercises a basic influence. The existence of acid amid groups has been indicated by the work of Osborne.²⁵ These groups are of but weakly basic character and bind only a small percentage of an equivalent of acid in dilute solution.²⁶ Their presence can, therefore, account for the "loosely bound" combinations of protein and acid, from which the acid can be removed by such mild means as dialysis.

Acid properties, due in some measure to the phenol group of tyrosin, but also in part probably to free carboxyl groups have been demonstrated with indicators, and by the electrical behavior of proteins dissolved in the presence of alkali.²⁷ Robertson has recently proposed the hypothesis that both the basic and acid properties of the proteins reside, not in free NH_2 and COOH groups, but in the CONH groups of the peptid linkings themselves, which can tautomerize into forms capable of binding alkali, acid, or even salt.²⁸ This view is still hypothetical, since compounds of the nature indicated have not been proved capable of existence. The basic properties, at least, of the proteins are explained by the known facts, mentioned above, concerning the organic structure of the protein molecule.

The numerous color reactions are, as is well known, chiefly reactions of some of the characteristic amino acids in the combination. The Millon reaction is due to the tyrosin, the Adamkewicz glyoxylic reaction to tryptophan, the lead sulphide reaction to cystin, etc. The biuret reaction appears to be due to the peptid linkings themselves, and not to any individual amino acid.

PHYSICAL PROPERTIES.

The proteins are optically active, as naturally follows from the fact that they are composed of optically active amino acids. They can also act as amphoteric electrolytes in solution, as mentioned, which likewise follows from their being composed of amphoteric amino acids.

Many of the most striking physical properties of the proteins as a class, however, bear no relation to their chemical composition, but are due to the fact that these substances are colloids. Similar to other colloids, organic and inorganic, the proteins form solutions of almost no osmotic pressure. Also, the solutions are peculiarly viscous, and when shaken they foam like solutions of soaps, which are also colloids. The viscosity has often a tremendous temperature coefficient. Raising the temperature of a gelatin solution, for example, a few degrees, changes it from a thick jelly to a fairly mobile liquid. The colloid particles possess electrical charges, and are carried bodily by the electric current. By rendering the solution acid or alkaline, the direction of the migration of the protein may be determined. In solutions of the degree of acidity

¹⁸Chemischer Zeitung, xxvi, 940.

¹⁹Berichte der deutschen chemischen Gesellschaft, xxxix, 2060; xlii, 3168.

²⁰Annalen der Chemie, cccxlii 118, 1908.

²¹Berichte der deutschen chemischen Gesellschaft, xl, 3544.

²²Journal of Biological Chemistry, x, 57, 1911.

²³Levites (Biochemische Zeitschrift, xx, 224, 1909) and Skram (Annalen der Chemie, cccli, 370, 1906) found that the lysin in proteins is open to attack by nitrous acid, which can destroy only free amino groups. Birchard (Proceedings of Society of Experimental Biology and Medicine, May 15, 1912) determined quantitatively by the writer's nitrous acid method the free amino nitrogen in a considerable number of proteins, and found it in all cases equal to one half the lysin nitrogen. Amino nitrogen in guanidin or acid amide groups is not determined by the nitrous acid method.

The NH_2 of the guanidin group (italicized) of arginin $\text{NH}_2\text{—CH(NH)—NH}_2\text{—CH(NH)—CH(NH}_2\text{)—COOH}$ is free, the other NH_2 bound. The guanidin NH_2 is regular in not reacting with nitrous acid. Kossel and Cameron (Zeitschrift für physiologische Chemie, lxxvi, 457, 1912) showed that in the molecule of one of the simpler proteins one NH_2 group of arginin is free, because it can be nitrated. When the protein is hydrolyzed the other NH_2 of arginin also becomes free. This group could be determined by the nitrous acid method and is, therefore, the alpha group.

²⁴See last paragraph under "Determination of Amino Acids."

²⁵Walker and Aston, Journal of the Chemical Society, lxi, 581.

²⁶Bugarsky and Libermann, Archiv für Physiologie, lxxii, 51, 1908.

²⁷Hardy, Journal of Physiology, xxxiii, 333, 1905.

²⁸Journal of Biological Chemistry, ix, 303, 1911.

or alkalinity in which the current moves the colloids in neither direction, their tendency to coagulate or precipitate is greatest. The presence of colloids which do not coagulate or precipitate has a tendency to prevent the precipitation of other colloids. Colloidal gold, for example, is precipitated in neutral solution by the addition of an electrolyte, salt. Addition of proteins which form stable solutions prevents the precipitation of the gold. This action is termed *protection*. Similarly, proteins affect the solubility or coagulability of each other when they are present together in solution.

An interesting natural example of this protective effect is seen in the influence of the albumin of milk on the coagulation of the casein. In cow's milk, which has much casein and but relatively little albumin, the casein clots in great masses when the milk ferments. In the milk of asses, goats, and mares, as also in human milk, the proportion of albumin to casein is much greater, and the milks do not clot on souring. As a consequence, kumyss, or fermented mare's milk, remains a thin liquid, and can be drunk in immense volumes. Kefir, or fermented cow's milk, is more like a thin cheese, and can be consumed only in relatively small amounts. The fact that the curd of human milk is so much finer than the coarse coagulum formed by the action of rennin on cow's milk, is explainable by the greater proportion of albumin to casein in the human milk.

Another physical property which the proteins possess with other colloids is an unusual capacity to *adsorb* other substances in solution, and to be adsorbed themselves. Adsorption is the term used to designate the concentration of a dissolved substance in the surface layer of the solvent. It has been found that when a protein solution is made to foam, the portion of the solution which is in the form of foam, is much richer in protein than the rest of the solution. This is caused by the fact that foam is nearly all surface. Similarly, dissolved protein may concentrate at the boundary which separates the water solution from another *liquid*, instead of from a gas. Shaking a protein solution with chloroform may result in a concentration of the protein in the part of the solution in contact with the chloroform. Because of the emulsified nature of the mixture of the two liquids the surface layer between them is very large, as is the gas-liquid surface in foam, and the adsorption by that surface layer may be very marked. Howell²⁹ has recently used this form of adsorption to remove the proteins from serum. It is probable that the "albumin membranes" of the fat globules in milk are merely dissolved proteins concentrated at the water-fat surfaces by adsorption. A third possibility is offered by the presence of a large surface at the boundary of solution and a finely divided or porous *solid*. The best known cases of adsorption of this class are afforded by the familiar action of charcoal in removing colloids in general and crystalloids to some extent from water solutions with which the charcoal is shaken.

In the preceding remarks the proteins have been introduced as passive participants in the act of adsorption, that is, as the substances which are adsorbed. They can also act as adsorbents, that is, a protein can furnish one side of the surface at

which the concentration of another substance in solution takes place. Casein, for example, acts as an adsorbent in exactly the same manner as does charcoal. In studying the precipitation of milk casein by acids, it has been noted that a portion of the acid is carried down by the casein, and it was believed that the acids formed saltlike combinations with the casein. An investigation³⁰ of the reaction showed, however, that there were no definite combining proportions, or other evidence of formation of genuine chemical compounds with acids, so dilute ($n/125$ to $N/2000$) that they dissolve no casein. The amount of acid taken up by the casein varies in proportion to the concentration of acid used. Also, among different acids, the amount taken up under the same conditions of concentration, etc., by a gramme of casein varies tremendously, and without any relation to the dissociating strength of the acids. For example, hydrochloric and sulphuric are almost equally strong acids, yet under given conditions six times as much sulphuric acid as hydrochloric acid is taken up by a gramme of casein. No analogy among chemical reactions is known. On the other hand, the process by which casein takes up acids is comparable in every respect to that by which charcoal does the same thing. An equilibrium is reached after the solid and solution have been in contact for a few hours or less, and this equilibrium can be reached from either side; that is: A given amount of acid is adsorbed by a gramme of casein in contact with a solution of certain concentration. If, however, the casein has previously been made to adsorb more acid than it will take up from this solution, it will give off acid to the water instead of taking it up, until equilibrium is restored. With a given acid, the quantitative relation between the concentration of the acid solution and the amount of acid taken up by a gramme of casein follows the exponential formula of adsorption $\frac{c_1}{c_2} = K$, (c_1 represents the amount of acid adsorbed by a gramme of casein in equilibrium with a solution containing c_2 amount of acid in each c.c.; K and p are constants) which has been shown to hold in general for mechanical adsorptions.

The action of casein with dilute acids is an example of the so called *pure mechanical adsorption*, due to concentration at the surface of a solution, and it shows that a protein can act as the adsorbent in such a reaction. Many of the so called adsorptions in which proteins take part, either actively or passively, are, however, as pointed out by Rona and Michaelis, of an entirely different nature, and are called "*electrical adsorptions*."³¹ The cause of the electrical adsorption is not surface condensation, but the attraction of two oppositely charged bodies. The proteins as a class are electropositive, and are consequently adsorbed by many substances of an electronegative nature, prominent among which is colloidal ferric hydroxide. Michaelis has found that when colloidal ferric hydrate is added to blood serum, for example, it is precipitated and carries down with it all of the serum proteins. The reaction, unlike the mechanical adsorption, is not

³⁰L. I. Van Slyke and D. D. Van Slyke, *American Chemical Journal*, xxxviii, 383, 1907.

³¹*Biochemische Zeitschrift*, xv, 196, 1908.

²⁹*American Journal of Physiology*, xxvi, 1010.

reversible; the adsorbed substance cannot be washed out of its combination with the adsorbent.

Incidentally, the adsorption theory affords a plausible explanation of the mutual influence of colloids, particularly proteins, upon the solubility and coagulability of each other, an influence of which we have already spoken in connection with the effect of the albumin of milk upon the coagulability of the casein. Colloidal solutions may be regarded as suspensions of small particles. In many respects they behave like such suspensions, i. e., they can be removed by ultrafiltration, and they show the Tyndall effect of dust motes in the sunlight when a strong ray of light is passed through the colloid solution. * Given two colloid particles A and B in the same solution, they may unite to form an adsorption compound, either by mechanical or by electrical adsorption. This adsorption compound may have the solubility of A, or that of B, or another solubility bearing no relation to that of either A or B. And when either A or B is precipitated it carries with it part of the other, held by adsorption. Thus can be explained the exasperating ability of proteins to hold each other in solution, and the almost universal ability of proteins when precipitated to carry down with them portions of all the other proteins present in solution. Trunkel³² has recently brought evidence that the precipitation of gelatin by tannin is an adsorption process like that above described, the gelatin particles adsorbing the tannin and forming a union which is insoluble. The proportion of tannin in the precipitation is not constant, but varies according to the exponential formula already mentioned, which expresses the relations in mechanical adsorption.

From the foregoing discussion it appears that the proteins can both adsorb and be adsorbed. How much of a biological rôle these abilities of the proteins play, one cannot tell until the field has been worked over by the accurate methods of physical chemistry. The proteins, as before pointed out, are amphoteric electrolytes, capable of combining with both bases and acids, and possibly with metallic salts. Casein itself, while it acts only as an adsorbent toward very dilute acids, is dissolved by stronger acids with formation of saltlike chemical combinations. With the proteins capable of entering into either chemical or adsorptive reactions, or into both at the same time, it is evident that the most careful discrimination may be required in order to decide which class of reaction predominates, even in the reagent glass under the simplest attainable conditions.

THE CHEMISTRY OF PROTEIN ASSIMILATION.

In closing, we devote a few words to the present status of fact and theory in the field of protein assimilation. It is known that the proteins are broken down in the digestive tract, due partially to the amino acids, in part only to the intermediate stage of peptones. The view has been maintained for some time by Levene³³ that it is these intermediate products that are chiefly used by the body in building its tissues. This was supported by the fact that when the intestines of dogs were removed, the stomachs being left, the animals retained nitrogen very well from their food. In the stomach, how-

ever, practically no amino acids are formed, but only albumoses and peptones. When, on the other hand, the stomach was removed, and the intestine, where the ingested proteins are hydrolyzed to the stage of amino acids, is left, the animals retain nitrogen with great difficulty. Apparently the amino acids are less suited for assimilation than the intermediate products of digestion, and the natural amino acids are completely burned to urea in the body, to serve, like the carbohydrates, as sources of energy.

Abderhalden, on the other hand, favors the view that the body proteins are built up from their lowest units, the amino acids. In support of this view he has been able to maintain dogs for periods of months on diets containing nitrogen only in the form of amino acids, and has even succeeded in making these animals in some cases retain part of the nitrogen fed.

A further possibility is that the body itself can synthesize amino acids from other substances, such as ammonia and carbohydrates, and from these amino acids build up its own proteins. The occurrence of such a synthesis of amino acids from other forms of nitrogen has recently been demonstrated by Knoop,³⁴ who obtained, from the urine of a dog fed with an alpha keto acid, the corresponding alpha amino acid, and by Embden,³⁵ who succeeded in obtaining amino acids from the liver after perfusion with other substances. Also, it has been found that ammonium salts, to a limited extent, can replace protein in the diet (Grafe and Schlaepfer, *Zeitschrift für physiologische Chemie*, lxxvii, 1, 1912; Abderhalden, *Ibidem*, lxxviii, 1, 1912).

While the body appears able to synthesize some amino acids, however, it fails with others. Glycocol apparently is readily formed in the body. By feeding an animal benzoic acid it can be made to excrete as hippuric acid an amount of glycocol exceeding that which could possibly have been present in all the tissues of its body.³⁶ Osborne and Mendel³⁷ have succeeded in rearing rats entirely on proteins free from glycocol. Some of the other amino acids, however, such as tryptophane, must be supplied to the organism, or growth is impossible.

In regard to the manner in which the products of protein digestion formed in the alimentary canal are transferred to the body cells in general, opinions have differed. Attempts to isolate amino acids from normal blood have been uniformly unsuccessful. Because of these negative results, Abderhalden believes that the amino acids formed from digested proteins in the intestine do not pass unchanged into the blood stream, but are synthesized in the intestinal wall to a blood protein. This enters the circulation, from which the body cells take it, break it down once more into amino acids, and from these rebuild their own characteristic proteins.

This explanation, that the proteolytic products are resynthesized into protein while passing the intestinal wall, must now, we believe, be given up for the simpler one that the products enter the blood directly, and are taken directly from it by the body

³²*Zeitschrift für physiologische Chemie*, lxxvii, 486, 1910.

³³*Biochemische Zeitschrift*, xxix, 423, 1910; xxxviii, 392, 1912.

³⁴Egstein, *Journal of Biological Chemistry*, x, 353, 1912; Abderhalden and Hirsch, *Zeitschrift für physiologische Chemie*, lxxviii, 192, 1912.

³⁵Publications of the Carnegie Institute.

³⁶*Ibidem*, xxvi, 58, 1910.

³⁷Recent papers in *American Journal of Physiology*.

cells. By the delicate and quantitative nitrous acid reaction the writer has succeeded in demonstrating that amino acids are constantly circulating in the blood, although they are taken from it so rapidly by the tissues that they do not accumulate in amounts sufficient for isolation by present methods. The blood of a normal dog, for example, contains about four milligrammes of amino acid nitrogen per 100 c. c. when the animal has been fasting for twenty-four hours. If the animal is fed meat, the figure rises to ten milligrammes to the 100 c. c. It does not appear that the liver removes or destroys the amino acids before they reach the other tissues. For during the height of digestion the blood from the femoral artery shows almost as much amino acid nitrogen (within one milligramme) as blood directly from the mesenteric vein. The amino acids entering the blood from the intestine circulate through the entire body, and apparently are offered directly to all its cells for their individual necessities, to be either burned as sources of energy, or synthesized to form new cell protein. The ability of the body cells to utilize amino acids is further indicated by results obtained by Buglia,³⁸ who finds that amino acids in amounts sufficient to meet the normal nitrogen requirements of the animal can be injected slowly into the vein of a dog without injury to the animal, such as would be expected from such large amounts of material if foreign to the blood. Also, relatively little amino acid nitrogen is excreted in the urine, almost all being retained or burned in the body. From blood analyses we find that intravenously injected amino acids are not only retained in the body, but when present in unusual abundance are taken up with great rapidity by the tissues. When, for example, twelve grammes of alanine were injected during ten minutes into a dog, only 1.5 gramme was excreted in the urine. Five minutes after completing the injection, however, only 1.5 gramme remained in the blood, the other nine grammes having already been removed by tissues other than the excretory apparatus. All the present facts are consistent with the theory that amino acids are normal constituents of the blood, which they enter from the intestine, and that the body cells are capable of removing them from the blood stream and utilizing them. That intermediate proteolytic products, such as peptones, can also be absorbed from the alimentary tract and utilized by the body cells is indicated by the previously mentioned results of Levene and his coworkers.

Correspondence.

LETTER FROM LONDON.

The National Insurance Act.—Papers Read at the British Medical Association Meeting.

LONDON, ENGLAND, August 8, 1912.

At the annual representative meeting of the British Medical Association held at Liverpool, the chief topic of discussion was the National Insurance Act, and two decisions of outstanding importance were arrived at. The first was that all negotiations with the insurance commissioners and the chancellor of

the Exchequer were to be broken off, and regret was expressed that the government had not acceded to the terms upon which alone the cordial co-operation of the medical profession in supplying medical treatment under the insurance act could be obtained. With regard to sanatorium benefit it was decided to undertake this work subject to certain safeguards and conditions. The actual wording of the motion is as follows: "That the British Medical Association calls on all practitioners to refrain from applying for, or accepting any post or office of any kind in connection with the National insurance act except in regard to sanatorium benefit, provided it is carried on in accordance with the wishes of the association, until such time as the government has satisfied the association that its demands will be met." This was carried by 117 votes to 22. A supplementary motion was also passed to the following effect: "That before any practitioner undertakes any work in connection with sanatorium benefits under the act, the conditions and duties of such appointment shall be submitted to the council for its approval."

With regard to the first part of the original motion, the profession as a whole look upon it as entirely satisfactory. The profession refuses to work the scheme for medical benefit under the act because it knows it to be unsound in principle, defective in detail, and inimical to the public interest, while at the same time it is sought to impose upon the profession onerous and exacting duties and to pay sweating terms of remuneration. With regard to sanatorium benefit the decision is not so unanimous. The feeling is very prevalent that it is a mistake to undertake medical services in any form in respect of any part of the act before the demands of the profession with regard to medical benefit are concerned. The reasons which led the representative meeting to consent to work sanatorium benefit are given in the *British Medical Journal*: "The public demand for an organized system of preventing and treating tuberculosis has been created by the profession itself, and the majority of the representatives felt that the profession ought not to put any obstacle in the way of its being efficiently worked from the start. The conditions of service and the terms of remuneration are not, so far as can be judged, so much below those which the profession would consider suitable as to justify it in refusing to work it on this ground alone. The representative meeting therefore felt that it was undesirable to allow what may be converted into a good system to fail on account of the withdrawal of the assistance which the profession can alone give."

The suggestion is also made that Mr. Lloyd George calculates on the profession refusing to work sanatorium benefit and so alienate public sympathy, and a decision not to work the tuberculosis scheme in order to demonstrate against the insurance act would from this point of view have been only to play into his hands—so that for tactical reasons the profession did right in consenting to work sanatorium benefit. Notwithstanding these reasons and suggestions, there is an idea prevalent among a large section of the profession that a mistake has been made in consenting to work the tuberculosis scheme. It is thought that Mr. Lloyd George still

³⁸*Zeitschrift für Biologie*, viii, 162, 1912.

has some partisans among the council who are more loyal to their political party than to their professional brethren.

Among the papers read at the recent meeting of the British Medical Association was a very interesting one by Dr. W. S. A. Griffith, of London, who opened a discussion on the results of treatment of inflammatory disease of the uterine appendages. It developed two main arguments: 1. The necessity for educating the public as to the real nature of the majority of these affections with the potentialities of infection of an uncured gonorrhea or gleet; and, 2, the immediate arrest of the inflammation combined with a regimen of rest and immunization. Modern treatment was discussed under the headings of thermotherapy, the continuous hot douche giving more relief than the ordinary douche; and radium treatment, which appeared to be useful in subacute and chronic cases. It was of no service in acute or purulent conditions, or in tuberculous inflammations, and had the disadvantage of possibly sterilizing the patient. Serums and vaccines were useful both in gonorrheal and nongonorrheal conditions. Accurate diagnosis was, however, essential and could not be made from vulvar or cervical cultures. Vaccines must at all times be subservient to operative interference. Chemical disinfection gave excellent results, particularly when combined with vaccines.

Mr. Christopher Martin, Birmingham, dealt with the subject from a surgical standpoint. He emphasized that the risk must be correlated to the benefit likely to be derived, and that in many cases conservative or even medical treatment might be sufficient. Ovarian inflammation was best treated by the separation of adhesions and the puncture of cysts. It was not advisable to remove the ovaries for epilepsy. If the inflammation was bilateral, and indications for removing the tubes were present, the uterus should be removed as well. One ovary should always be left if at all possible. For pyosalpinx a preliminary incision and drainage by the vagina gave the best results. Combined medical and surgical treatment was at all times strongly advised. Doctor Haultain, of Edinburgh, Doctor Scharlieb, of London, and others joined in the discussion.

Therapeutical Notes.

Treatment of Burns.—W. A. Jack, Jr., in *Washington Medical Annals* for May, 1912, reports good results with the dry open air treatment of extensive burns, as advocated by Sneve. After a thorough preliminary cleaning with soap and water and gasoline (during which an anesthetic is administered, if necessary) the burned area is lightly dusted with an oily powder, such as zinc stearate, of which only enough is used to form a thin coating over the surface. Morphine is given to relieve pain and minimize shock. Once daily all heavy crusts are removed, exudate is wiped off with dry sponges, and another coating of powder dusted on. Under no circumstances must exudate be allowed to accumulate under the crust over twenty-four hours. Absolute cleanliness and dryness are

the essentials of the method. After getting used to going without their usual amount of clothing, the patients are comfortable, and the dressing of their injuries is no longer the terrible task it would have been under other methods. When the procedure is faithfully carried out, healing goes on with great rapidity, and very little scarring results. Where skin destruction has been so extensive that regeneration cannot occur, an excellent surface for the placing of grafts is afforded.

I. S. Stone, discussing in the same journal the treatment of first and second degree burns, recommends the application of twenty-five or fifty per cent. tincture of iodine to any abrasions and the careful preservation of the cuticle covering the burnt area. Carr states that iodine may cause blistering, and that there is nothing superior to gasoline. He has found healing to be very rapid when a one half of one per cent. solution of potassium permanganate is allowed to trickle over the burnt area, a method introduced by Craig. Snyder reports that he has made a practice of exposing sluggish burns and ulcers to direct sunlight, with good results.

Treatment of Bronchial Asthma.—Kayser, in *Therapeutische Monatshefte* for March, 1912, recommends that one tablespoonful of a five per cent. solution of calcium chloride be given in milk every two hours for at least three or four days. This proved effective as a prophylactic measure in cases of bronchial asthma under his care. In a number of instances the paroxysms did not return for several months after the administration of calcium chloride. While the effect of the drug generally became manifest on the third day, Kayser considers it advisable to continue its administration for a week.

Treatment of Aortic Aneurysm.—P. E. Weil and P. J. Ménard, in *Bulletins et mémoires de la Société médicale des hôpitaux de Paris*, May 2, 1912, report a case of aneurysm of the ascending portion of the arch of the aorta, with associated aortic insufficiency, in which percussion of the seventh cervical vertebra, as recommended by Abrams, was practised daily with a certain degree of benefit. After each percussion the pressure symptoms were greatly diminished and the area of dullness over the aneurysm became slightly smaller. These effects, however, were rather evanescent.

Treatment of Pityriasis Rosea.—J. L. Bunch, in the *British Medical Journal* for March 30, 1912, referring to the treatment of this condition in children, states that whenever itching is present, a starch or alkaline bath should precede the use of any local remedial measures. Subsequently one of the following lotions may be applied:

- I.
- | | | |
|----|-------------------------------------|---------|
| R | Glyceriti phenolis, | ℥x; |
| | Sodii bicarbonatis, | grs. x; |
| | Sodii boratis, | grs. v; |
| | Aque destillatæ, q. s. ad | ℥i. |
| M. | ft. solutio. | |
- II.
- | | | |
|----|-------------------------------------|-------|
| R | Liquoris sodæ chlorinatæ, | ℥xxx; |
| | Spiritus lavandulæ, | ℥ii; |
| | Aque destillatæ, q. s. ad | ℥i. |
| M. | ft. solutio | |

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DIETETIC HEADACHES.

Headache, as is well known, may be due to factors as numerous as they are varied. Lesions of the brain, meninges, cranium, scalp, eye, ear, sinuses, pituitary, nose, teeth, etc., in which the pain may be caused through direct or indirect involvement of the sensory nerves; various diathetic diseases, especially gout, rheumatism, and syphilis; tumors, abscesses, abnormal endocranial tension, traumatism, cutaneous irritation (as by pediculi capitis), tight or heavy headwear; blood disorders, plethora, the anemias; cardiovascular and renal disorders; toxicants, especially alcohol and tobacco; emotions, intellectual effort, muscular exertion, heat, cold, low barometric pressure; various forms of indigestion, gastric or intestinal, or both, represent but the more salient causes of this distressing symptom.

Probably the most stubborn form in so far as resistance to drugs is concerned, occurs in individuals in whom the health seems in no way to be impaired. There is merely, as an incident perhaps, of advancing age, the debilitating influence of arduous occupation, social exigencies, etc., a slight reduction in the power to carry on the various functions, including that of preparing adequately for absorption the food products admitted to the intestinal canal. Even at best such is seldom the case among, especially,

the well to do classes. Various observers have estimated that one tenth to one seventh of the food ingested fails to be acted upon by the digestive ferments. Were this undigested fraction at once eliminated by the rectum, it would cause no trouble; but such not being the case, it is retained sufficiently long in the intestine to be broken down by bacteria, particularly the putrefactive anaerobes, aided by the colon bacillus. It is to the toxic products of this putrefactive process that true dietetic headache is usually traceable. While normal individuals are able either to excrete actively these toxic products, or break them down when absorbed, the subjects in question can only excrete or break down a fraction or none at all thereof. It is to whatever proportion of these toxic substances is present in the blood that the form of autointoxication which gives rise to the headache—usually a severe hemicrania which comes on early in the morning and sometimes persists all day—is ascribable.

The treatment of these cases is as satisfactory as it is simple. It consists, first, in administering a saline purgative to clear the intestine of any putrefactive remnants it may contain; second, in abstaining from foods rich in proteids, meat, eggs, etc., at the *evening meal*—an essential feature since the depression of activities that sleep entails is the cause of the accumulation of toxic wastes which engender the headache; third, in taking one grain of desiccated thyroid gland morning and evening, during meals, to enhance general oxidation and the catabolism of toxic wastes.

THE NATIONAL BUREAU OF HEALTH AND THE PRESIDENTIAL CANDIDATES.

Man is naturally improvident and is disposed, with Horace, to enjoy the day at the expense of the future. Warnings of dangers impending have generally fallen upon deaf ears, notably in our own land. We will muster the army when we need it, construct the dreadnaughts when the enemy appears in the offing. Added to this temperamental characteristic the conviction, rooted in centuries of unscientific theory and practice, that disease is inevitable and is to be combated, when it arrives, with prayers and simples from the earth, and we have sufficient explanation of the indifference of the general public to the establishment of a National bureau of health.

The absence of any strong expression of opinion on this matter from the platforms of any of the three parties at present in the political field is without great significance. Platforms are made to run on. In any administration legislation of the highest importance is sure to occupy attention, that was un-

dreamed of at the time the platform was constructed. Plague from without or within, if sufficiently virulent, might possibly lead to the bureau we want; if not more serious than our omnipresent typhoid, it would elicit nothing more than the present sympathy with the unlucky victims of that logical punishment for dirt and neglect. The idea of prophylaxis, clear and self evident to the scientific mind, is still a little beyond the average intelligence. Let us hope that education will bring about the establishment of the bureau before it is rushed into existence by panic at some sudden epidemic.

The platform of the Democratic party contained a short reference to the desirability of some Federal supervision of the general health. In intent and wording it was very like the pronouncement of former President Roosevelt in his speech of acceptance at Chicago on August 7th, which was as follows:

We favor the union of all the existing agencies of the Federal Government dealing with the public health into a single National Health Service without discrimination against or for any one set of therapeutic methods, schools of medicine, or schools of healing, with such additional powers as may be necessary to enable it to perform efficiently such duties in the protection of the public from preventable disease, as may be properly undertaken by the Federal authorities, including the executing of existing laws regarding pure food, quarantine, and cognate subjects, the promotion of appropriate action for the improvement of vital statistics and the extension of the registration area of such statistics, and cooperations with the health activities of the various States and cities of the nation.

In a letter to the editor of this JOURNAL, Governor Wilson wrote frankly that in the words of an English wit, his mind was still "to let" on the subject of a National health bureau, and that he intended to inform himself more fully before making any definite statement.

The 1912 Republican platform contained perfunctory reference to the matter. President Taft, however, has again and again spoken in favor of a National health bureau. We think we are giving a fair idea of his views in the subjoined extracts from speeches which were kindly sent to the JOURNAL by the President's secretary. The first is from an address at the University of Pennsylvania, Philadelphia, February 22, 1909:

So marked has been the increase in the importance of the medical profession in governmental agencies that the doctors themselves have organized a movement for the unification of all agencies in the Federal Government used to promote the public health in one bureau or department, at the head of which they wish to put a man of their own or kindred branch of science.

How near this movement will come in accomplishing the complete purpose of its promoters only the National Legislature can tell. Certainly the economy of the union of all health agencies of the National Government in one bureau or department is wise. Whether at the head of

that department should be put a doctor of medicine or some other person must depend on the individual and not on his technical professional learning or skill. It is the capacity to organize, coordinate, and execute that is needed at the head of a department and not so much deep or broad technical and professional skill. It is the ability to judge whether others have such technical and professional skill that the head of the department who makes the selection of the members of his department should be endowed with.

However this may be, it is becoming more and more clear that the extending of governmental duties into a territory covered by the profession of medicine is bringing physicians more and more into political and governmental relation, and we may expect that in the next decade they will play a far greater part than they have heretofore; and it is proper that they should.

The second extract is from the President's Message at the beginning of the third session of the Sixty-third Congress.

In my message of last year, I recommended the creation of a Bureau of Health, in which should be embraced all those Government agencies outside of the War and Navy Departments which are now directed toward the preservation of public health or exercise functions germane to that subject. I renew this recommendation. I greatly regret that the agitation in favor of this bureau has aroused a counteragitation against its creation, on the ground that the establishment of such a bureau is to be in the interest of a particular school of medicine. It seems to me that this assumption is wholly unwarranted, and that those responsible for the Government can be trusted to secure in the personnel of the bureau the appointment of representatives of all recognized schools of medicine, and in the management of the bureau entire freedom from prejudice in this regard.

The source of the opposition to the bureau is well known and thoroughly despised by intelligent people. It has been encouraged in the past by an apparent unwillingness somewhere to enforce the provisions of the Food and Drugs Act. It seems likely that this act will soon be strengthened and thus deprive the opposition of the sinews of war. It is fair to say that the establishment of a National health bureau is inevitable. If other advocates lag by the way, the parents of the country will soon voice an irresistible demand.

THE ADMISSION OF MENTALLY DEFECTIVE ALIENS.

The expert consensus at present is that insanity and feeble-mindedness have their origin in an essentially defective stock; that heredity plays the most important rôle in the unfolding of these disorders. In our issue for July 27th, Dr. John B. MacDonald, in a communication entitled *Heredity and Insanity*, summarized the most advanced views upon this subject in the following words: "The studies of heredity and the startling deductions drawn from biometrical and Mendelian investigations seem to

prove to the satisfaction of all thinking persons that the insanities (excepting the small part we may call acquired insanity), feeble-mindedness, criminality, and like degenerative conditions, are simply branches of one family tree defect." He goes on to prove that this defect is congenital and hereditary. Furthermore he shows that, making all allowances for the increasing tendency to place mental defectives of all sorts in institutions, there is still no doubt that these cases are on the decided increase.

Immigration is largely responsible for this increase. The reports of all our State institutions show that the alien population contribute more than their share to the common burden.

That we have enough bad stock of our own without unnecessarily increasing it by the addition of alien defectives, should be apparent to scientific and patriotic Americans. There has lately been much agitation concerning the large number of feeble-minded and insane who have escaped the observation of the examining physicians at Ellis Island. There has been some criticism of the professional lukewarmness of those in charge who could be so unalert as to fail to insist on increased facilities for examination. This criticism has borne some fruit. We are credibly informed that the staff of mental experts has been increased and that interpreters are now somewhat more available. Although the general improvement has been incommensurate with the exigencies of the situation, it has already produced very tangible results. During the last six months the number of detected insane and feeble-minded has increased by leaps and bounds, until now, with the still totally inadequate facilities, it has reached the high water mark and will swell the list of the present fiscal year to exceed that of any previous year in the whole history of immigration.

But on the very threshold of the new era stalks the spectre of official discouragement. Recent decisions of the secretary of Commerce and Labor have the practical effect of opening wide the doors to the very class which the increased vigilance of the examining physicians has sought to exclude.

In February of this year there arrived from Russia a distinctly feeble-minded alien. Her condition was certified to by the examining physicians. But by various legal manœuvres on the parts of her friends and relatives her deportation was postponed, until finally by department orders she was admitted ostensibly to visit a sick relative. Her visit still continues. In June another immigrant arrived who was so frankly imbecile that the steamship company was fined \$100 for bringing her. This alien was also admitted by department orders, on the ground that her father being a naturalized citizen, she was

constructively a resident of the United States from the moment when she left her own home. In a similar case, tried before Mr. Justice Day of the Supreme Court, January 7, 1907, it was decided that a naturalized citizen's child was not a citizen until such time as the child had been legally landed in the United States, and was properly excluded when found to be suffering from a disease subject to mandatory exclusion under the law. Thus on the eve of election campaigns departmental decisions render null and void the law, and flatly contradict the decisions of the Supreme Court.

Such are the discouraging conditions under which the examining physicians at the immigrant stations labor. They need the active moral support of all their professional brethren. By giving them this support the general good of the public can also be well served. Although physicians in general should not lose sight of the fact that they are especially responsible for the extension of sympathy and aid to individual cases of distress, alien or native, it should not be forgotten that they have a still larger duty to perform in preaching the broad principles which underlie the proper preservation of the public health.

Viewed in this light, our knowledge of heredity teaches us that the law against the admission of mentally defective aliens should be rigidly enforced. The law itself should be so extended as to exclude not only defective nonresident children of naturalized parents, but also prevent the landing and naturalization of the parents of such children. For even though these parents may be normal themselves, the fact that they have mentally defective children shows that they carry the tainted germ plasma and thus make possible dangerous additions to our already large defective population.

THE INTIMATE RELATION BETWEEN OPHTHALMOLOGY AND GENERAL MEDICINE.

It is a trite saying that all the organs of the human body are intimately associated, both physiologically and functionally, and yet the eye is looked upon too often as an organ separate and distinct from the others, to be cared for by a self chosen number of practitioners who are supposed to study it alone and to neglect every other part of the body. The connection between the eye and a viscus in the abdomen is just as close as is that between any other two separate organs, through the nervous, circulatory, and lymphatic systems; the eye reacts to troubles situated in distant parts, and other organs react to troubles in the eye. Nausea and vomiting may be caused by ocular derangements, or we may

have the symptoms of eye strain produced by an indiscretion in eating. Sometimes it is difficult to tell whether the gastric symptoms are caused by the eyes, or the ocular symptoms by the stomach; in either case an abnormal condition is stimulated in the other organ by a disordered nerve action. Furthermore, actual lesions may be produced in the eye as the result of disease elsewhere. Every one will think of the retinitis of nephritis and of diabetes, of the choked disc caused by tumors in the brain, and of the Argyll Robertson pupil as an early sign of tabes, but not so many take account of the diagnostic and prognostic value of the signs of arteriosclerosis in the retina, of the changes in the various reflexes of the pupils, or of the complex or ocular symptoms more or less characteristic of many diseases. Every physician notices the conjunctivitis of measles, but very few utilize the valuable information to be gained, both positively and negatively, from a study of the color fields. Is it right that a case of tobacco-alcohol amblyopia should be allowed to go on to blindness without recognition, or that when a man's sight fails he should have his tobacco stopped simply on the chance that it is this rather than another actuating cause? When we do this, valuable time is almost sure to be lost and the patient has to pay the penalty.

If we exclude cataract and local injury, the statement is generally true that a morbid condition within the eye is a symptom of disease elsewhere in the body. Iritis usually indicates the presence of syphilis or rheumatism, sometimes of one of the other infectious diseases, like tuberculosis, though it may be a concomitant of inflammation of a neighboring tissue, such as the cornea. Retinitis, chorioiditis, optic neuritis, and choked disc always point to a lesion outside of the eye. The detection of a retinitis is not a diagnosis, any more than is the perception of the rose colored spots of typhoid fever; each is simply the recognition of one symptom of a disease. Scientific diagnosis may be distinguished from unscientific guesswork by the fact that the former takes into account all the information that can possibly be obtained, while the latter jumps at a conclusion from a few known facts. Guesswork is sometimes brilliant, but it too often makes lamentable mistakes. Knowledge of the inflammatory, noninflammatory, and reflex symptoms presented by the eye is necessary to scientific diagnosis, because the eye is connected vitally with all other organs. It is not disunited, but is an integral portion of the body, and, as such, its diseases should be understood and recognized by every physician, while the specialist should be relegated to his true position, that of an expert to be consulted in difficult and doubtful cases.

TREATMENT OF SURGICAL TUBERCULOSIS BY BIER'S HYPEREMIA.

Bier, who was the first successfully to make use of *Stauungs* hyperemia, has again added an interesting chapter to medical treatment. In a paper, published in the *Deutsche medizinische Wochenschrift* for June 13th, he reported his results achieved with a combination treatment in surgical tuberculosis. It consists in the internal administration of iodides and the external application of hyperemia. He has especially used potassium iodide—one patient only received sodium iodide—in large doses; adults received "about three grammes" (one up to eight grammes) daily, children "correspondingly less." But the question of dose is still an open one: "Possibly much less should be used, perhaps it is better to give larger doses than I have used so far." As to the effect of iodine, he says he can only give a theory, not absolute facts; Iodine has no direct effect upon tuberculosis, but when combined with hyperemia in tuberculosis of the joints and bones it will prevent the development of disagreeable complications, especially of a cold abscess which, when the hyperemic treatment is not suspended, will increase in such a way that it can no longer be controlled; in some cases appear immense (*mächtige*) granulations, in others severe acute infections. All these complications are avoided under iodine treatment, and the hyperemic treatment could be, without danger, pushed to its utmost. The results are then very gratifying.

THE PLAGUE SITUATION.

The plague situation in Porto Rico seems to be well under control. The *Public Health Reports* for August 9th record two more new cases in Porto Rico, making a total of forty-seven cases. In Cuba no new case has been reported since July 22d, and the total number in Havana up to August 5th is but three cases. From New Orleans, up to August 5th, no report of plague was received, and stringent precautions have been taken to prevent the importation of the disease. From Caracas, Venezuela, for the month of June, two cases of plague are given with two deaths. Liverpool, England, reports that a seven year old boy, sick with plague, was sent to the hospital on July 26th; while from Trieste, Austria, we hear that on July 7th in the steamship *Africana* from Buenos Aires, dead rats were discovered in the hold, which were shown by bacteriological examination to have died of bubonic plague. Manila has also a case of plague which was discovered in a Filipino on June 14th; the man died on June 18th; post mortem examination showed typical lesions of bubonic plague. This is the first case of plague to appear in Manila for more than seven years.

ROLE OF THE UTERUS IN PSYCHOPATHY.

Piqué, in a communication to the Académie de médecine, July 30, 1912, reported in *Semaine médicale* for July 31st, warns against attributing too significant a rôle to the uterus in psychopathy. Without minimizing the important part the uterus

may play in the production of certain forms of delirium, this part has been much exaggerated, especially by foreign investigators. There is no special connection between the uterus and the brain, asserts Picqué, and the real offender in the cases which have been studied is infection. Infection of any organ may lead to psychic disturbance and its surgical removal may be followed by improvement in mental symptoms. Insanity following the artificial menopause is the exception, occurring in only three cases out of 450 in the asylum at Villejuif; four other cases followed surgical removal of other infected organs.

Obituary.

T. B. MCCLINTIC, M. D.,
of Washington, D. C.

Doctor McClintic died at Washington on August 13th of Rocky Mountain spotted fever, to the study and eradication of which the last two years of his life were devoted in the Bitter Root Valley, Montana, region. He was on a journey from that section to Washington when attacked. He was born at Warm Springs, Va., in 1873, and was a graduate of the University of Virginia. For the last twelve years he had been in the Public Health and Marine Hospital Service, in which he had attained the rank of passed assistant surgeon, and had achieved notable results on the relief ship *McCullough* after the San Francisco earthquake, and in the management of the plague quarantine in the Philippines. Doctor McClintic is survived by a widow.

Medical Law.

VIII. CIVIL MALPRACTICE.

The legal rule that a physician will not be held liable for an error of judgment is one that is not generally understood, it being popularly supposed that its application is a much broader one than that applied by the courts.

In the case of *Brydges vs. Cunningham*, 124 Pacific Rep., 131, the application of the rule is shown. The case can be best presented in the words of Mr. Justice Morris, of the Supreme Court of Washington.

Respondent is a physician, and the action was one for malpractice in the treatment of the minor plaintiff, a little girl seven years of age at the time complained of. It is the contention of appellant that the little girl is suffering from an injury to the sciatic nerve, resulting in permanent paralysis of her right hip and leg, due to a fall from a porch, and that the respondent improperly and negligently failed to apply the proper treatment, treating the case as typhoid fever, instead of making an examination of the injured parts, ascertaining the true condition, and relieving the pressure on the nerve by an operation. Respondent contends that the child is, and from the beginning has been, afflicted with infantile paralysis, for which there is no known cure. The history of the case shows that the child fell from the porch Thursday evening and complained of pain in her hip and leg, which her mother sought to alleviate by applying liniment, which seemed to relieve the pain. Friday and Saturday the child played around as usual, making no complaint, and was apparently fully recovered from the fall. Sunday morning she was still apparently well and went to Sunday school, from which she returned complaining of pain. When asked to

locate the pain, she replied: "I have hurts all around me." She was put to bed, and her mother treated her all day with hot cloths wrung out in turpentine. In the evening respondent was called in, and at first diagnosed the case as appendicitis and advised an operation. This was objected to by the family, and Monday afternoon another physician was called in consultation with respondent. It was then decided that no operation was necessary, and that the trouble was typhoid fever, for which she was treated for about twenty-one days. During respondent's visits, when his attention was called to the cold and swollen condition of the hip and leg, he gave it as his opinion that the condition would pass away with the fever, and that Nature should be left to take its course. Appellant's theory of negligence depends upon the testimony of several physicians, who were called as experts, to whom a number of hypothetical questions were propounded, tending to sustain the contention that the child was suffering from an injury to the sciatic nerve, caused by the fall on Thursday night. These questions, however, did not include the condition of the child on Friday and Saturday, when she was playing around as usual and making no complaint. Each of these physicians, when interrogated, by question, including the condition on Friday and Saturday, replied that the history of the case during those two days would exclude any injury to the sciatic nerve, and that the child could not have gone from Friday morning until her return from Sunday school on Sunday morning without complaint, in case of an injury to the sciatic nerve, or even a partial dislocation of the injured parts. It is apparent, therefore, from the testimony, which was evidently the reason why the court below granted its judgment, that there is no evidence in the case to substantiate appellant's theory of an injury to the sciatic nerve on Thursday night, since all the testimony, that on the part of appellant, as well as that for respondent, excludes this theory, taking into consideration the history of the case from Thursday night to Sunday, when respondent was placed in charge.

It needs no argument to show there could be no recovery against respondent, unless, as a medical man of ordinary skill, he should have correctly diagnosed the case as an injury to the sciatic nerve, and was negligent in his treatment. If, then, there is no evidence that there was such an injury, when all the facts upon which the diagnosis must be predicted are included, but rather the evidence, without exception, excluded such an injury, there was nothing to submit to the jury. If respondent could be held liable because he did not make a proper diagnosis of the case on his own theory that the child was suffering from infantile paralysis, then the court was in error. But in an action for malpractice a physician cannot be held for an error in judgment as to the disease his patient is suffering from, since all that any physician can give to any case is his best judgment; and, if he exercise that judgment as a man of ordinary skill would exercise it, there can be no recovery. The testimony of the physician called by appellant is to the effect that the symptoms present in this case from Thursday night to Sunday morning might be diagnosed by men of ordinary skill in the medical profession as typhoid fever, multiple neuritis, or infantile paralysis, and that the treatment given by respondent in no way contributed to the present condition of the child. There is therefore no evidence in the case that the treatment by respondent was negligent or unskillful. The most that can be said is that he did not discover the infantile paralysis. From the evidence he could not have cured it if he had. It cannot therefore be said that his failure to discover its presence, or his subsequent treatment, is responsible for the child's present condition.

N. THE PHYSICIAN AS WITNESS.

In the case of *Landro vs. Great Northern Ry. Co.*, 135 Northwestern Rep., 991, Mr. Justice Bunn, of the Supreme Court of Minnesota, in criticising the conduct of the trial of a personal injury case, in which the plaintiff was permitted to exhibit his person to the jury, set forth the law under which such exhibition might properly be made to the jury in the following words:

It is within the discretion of the trial court to permit a plaintiff in a personal injury case to exhibit his injuries to the jury, in order to show their extent or to enable a surgeon to demonstrate their nature and character. . . . It is also discretionary to permit tests and experiments, in the presence of the jury, in a proper case and under proper safeguards. But where there are no wounds, no injuries that can be seen by the jury, it is improper to permit the exhibition of plaintiff's person for the purpose of conducting experiments to prove that he will cry out with pain, or that his muscles will grow rigid, when his legs are manipulated in a certain manner. It was a hotly disputed question whether plaintiff had any "objective" symptoms; but it is quite clear that he had none that could be seen by the jury. Trial courts should always exercise this discretion with caution, and when it appears that the probable effect of the exhibition will be, not to instruct the jury as to the nature and extent of the injuries, but to excite their sympathies or inflame their passions, it should not be permitted.

As to the proper use of textbook authorities the same judge in the same case stated the law as follows:

The trial court permitted the cross-examination of defendant's expert witnesses as to opinions expressed by a standard authority contrary to those given by the witnesses. Of course, medical books, however celebrated their authors, are not admissible in evidence, because the author is not under oath, and not subject to cross-examination. But, for the purpose of testing the qualifications, as well as the credibility, of an expert, it is generally held, . . . that when the witness has testified that the authorities support his view, he may be asked on cross-examination whether a medical work, admitted by him to be a standard authority, does not express a contrary view. And it is no objection to such cross-examination that incidentally the opinions of the author are thus brought before the jury. Theoretically the author's opinions are not substantive evidence, but are merely impeaching evidence. It is, however, open to serious doubt whether the cross-examination in the case at bar should have been permitted, at least to the extent it was. It was admitted by all the experts that it was a disputed question among the authorities whether the sacroiliac joint in a man was fixed or movable. The result of reading to the witnesses extracts from the work of an admittedly great surgeon and authority, was to get this evidence before the jury, not merely to impeach the testimony of defendant's witnesses, and it was clearly impossible for the jury to distinguish between substantive and impeaching testimony. The purpose and probable effect of such a cross-examination should be carefully considered by the trial court.

News Items.

Poliomyelitis Epidemic in Buffalo.—Dr. Eugene H. Porter, New York State commissioner of health, reported on August 6th that poliomyelitis was epidemic in Buffalo, where up to August 3d eighty-six cases, with six deaths, had been reported.

Plague Prevention Work in California.—During the week ending July 6, 1912, 91 squirrels from Alameda County, 1,029 from Contra Costa County, and 12 from Stanislaus County, Cal., were examined for plague infection. Of these, 11 from Alameda County and 138 from Contra Costa County were found infected.

Inspection of an Ocean Liner for Cholera.—Health Officer O'Connell has been officially notified of an outbreak of cholera in Russia within two hundred and fifty miles of Libau, the chief seaport on the Baltic, and all vessels coming from there will be subjected to a strict examination. The Fabre liner *Canada*, which arrived in New York on August 12th, was detained in quarantine on account of three suspicious cases in the steerage.

Beth Israel Hospital.—The Beth Israel Hospital at Monroe, Jefferson, and Cherry Streets, in New York, has equipped a new chemical laboratory where original research work will be pursued. The laboratory is furnished with all the most modern chemical apparatus, for the most delicate biological chemical analysis. Dr. Max Kahn has been nominated director.

A Lord Lister Memorial.—A committee has been appointed by the presidents of the Royal Society and the Royal College of Surgeons for the purpose of establishing a memorial to the late Lord Lister. A meeting of this committee was held on July 22d under the chairmanship of Sir Archibald Geikie, and an executive committee was appointed to prepare plans for a suitable memorial and to organize an appeal for subscriptions. Lord Rothschild and Sir W. W. Cheyne were appointed treasurers and Sir J. R. Bradford secretary of the Lister Memorial Committee.

Gonorrhea in Little Girls.—Recognizing the frequency of the occurrence of gonorrheal vaginitis among children, and realizing the impossibility of treating these cases successfully without a special organization for the purpose, the Mount Sinai Hospital Dispensary has inaugurated a special class for the treatment of these cases, and has appointed to the department a special physician who is assisted by a graduate nurse. The cases enrolled since the inauguration of this class are so numerous that the dispensary has been compelled to restrict its treatment to children resident in the immediate neighborhood. Similar classes might well be formed to meet this need in other parts of the city.

Personal.—At the commencement exercises of Syracuse University, held in June, the degree of D. P. H., was conferred upon Dr. Eugene H. Porter, State commissioner of health, as a public recognition of the valuable public health work done by him and the State department during the eight years he has held the position of commissioner of health.

Dr. R. J. E. Scott, of 237 West Seventy-fourth Street, has resigned as attending gynecologist at the Demitt Dispensary, with which he has been connected for twelve years.

Dr. I. S. Hirsch, of 56 East Ninety-third Street, has returned from a trip to Europe.

Pellagra in the United States.—During the week ending July 20, 1912, pellagra was reported as follows: Baltimore, 1 death; Houston, Texas, 1 death; Pasadena, Cal., 1 death; Richmond, Va., 1 case; Wilmington, N. C., 1 case. A bill recently introduced in the House of Representatives provides "that the sum of twenty-five thousand dollars be, and the same is hereby, appropriated, out of any money in the treasury not otherwise appropriated, for the study and prevention of the disease pellagra, for the purpose of preventing further extension of this rapidly increasing and fatal disease, by a commission of three medical experts under the direction of the United States Public Health and Marine Hospital Service." The bill has been referred to the Committee on Interstate and Foreign Commerce.

Typhoid Fever in New York.—One hundred and twenty-six cases of typhoid fever have been reported in Brooklyn since August 1st, compared with 69 for the corresponding period last year. Of these, 60 were in the Eighth and Thirtieth Wards, where the outbreak began two weeks ago. It is thought by the department that the outbreak is local and that there will be no difficulty in getting it under control. In Manhattan there has been no increase in the number of cases above the average for this time of the year, and the rumor of an epidemic in Wall Street due to the drinking of bottled spring water is without foundation. From Queens comes the record of 74 cases since August 1st, of which the greater part were in Woodhaven and Jamaica. An analysis of Croton water showed it to be free from typhoid germs, and a fairly safe beverage generally speaking.

Do Not Send Dying Indigent Patients to Southwest.—Physicians in all of the eastern and southern States will be asked by the National Association for the Study and Prevention of Tuberculosis to stop sending consumptives in the last stages of tuberculosis and without sufficient funds to the southwestern part of the United States in search of health, according to an announcement made lately by that association. From fifty to sixty per cent. of these advanced patients are too poor to provide the proper necessities of life, and they are either starved to death or compelled to accept the meagre charity which this part of the country affords. The association will ask physicians to be more careful in ordering patients to go away, and will also ask railroads to discontinue their practice of selling "charity" tickets to those who cannot afford to pay full fare.

Pith of Progressive Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

August 1, 1912.

1. EDWARD O. OTIS: Institutions for Prevention and Cure of Tuberculosis as Elements in Social Defense.
2. JAMES A. LYON: Specific Treatment against Pulmonary tuberculosis and Its Complications with Bacterins and Tuberculin.
3. CARROLL E. EDSON: Recurrent Febrile Attacks in Chronic Pulmonary Tuberculosis.
4. GEORGE V. N. DEARBORN: Laboratory Course in Physiology Based on Daphnia and Other Animalcules.
5. WALTER CHANNING: Argument for Large State Insane Hospital.
6. A. W. STEARNS: Prognosis in Dementia Præcox.
7. JULIUS FRIEDENWALD: Gastrointestinal Disturbances Observed in Pernicious Anæmia.

2. **Pulmonary Tuberculosis.**—Lyon says that mixed infection is usually present in progressive pulmonary tuberculosis and its complications. Therefore the use of appropriate vaccines is essential, either before the administration of tuberculin, or conjointly with the latter. In many catarrhal cases great benefit is derived from polyvalent colon vaccine, or, where this fails, an autogenous one made from *Bacillus coli communis* found in the feces. In the later stages of tuberculosis, or in toxemic cases, the purified tuberculin, if given in appropriate doses and under due precautions, is a useful adjunct to sanatorium treatment. The improvement of the general condition, due to the checking of the intercurrent infection, enables the tuberculin to act favorably upon processes which had the concomitant bacteria been disregarded, would certainly be more refractory, if amenable at all.

6. **Dementia Præcox.**—Stearns calls attention to the apparent hopelessness of the disease so far as mental health is concerned; the high mortality, especially from pulmonary tuberculosis and other pulmonary affections; the probability of subsequent relapse, even though the patient apparently recovers from the first acute attack; the large number of cases requiring permanent hospital care; and the danger of mistaking atypical depressions for catatonic dementia præcox.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

August 3, 1912.

1. W. G. MACCALLUM: Function of Parathyroid Glands.
2. JOSEPH H. PRATT: Internal Function of Pancreas.
3. DAVID MARINE: Anatomical and Physiological Effects of Iodine on Thyroid Gland of Exophthalmic Goitre.
4. IRA C. CHASE: Newer Methods of Diagnosis of Pathological Conditions of Liver.
5. HARRY L. BARNES: Pulmonary Tuberculosis Treated with Tuberculin.
6. THURKILD ROOSING: Gastrocoloptosis: Pathological Significance and Surgical Treatment.
7. KENNETH A. J. MACKENZIE: Role of Movable Kidney in Intestinal and Vascular Stasis.
8. LUDWIG WEISS: Parakeratosis ostracea (scutularis).
9. WILLARD BARTLETT: Value of Lane Bone Plates.
10. WILLIAM DARRACH: Operative Treatment of Fractures and Dislocations.
11. CHARLES A. L. REED: Constipation and Headache in Women: Etiology and Diagnosis.
12. EUGENE S. TALBOT: Iodoglycerole in Mouth Infections.
13. VIRGIL LOEB: Cubic Capacity and Superficial Area of Maxillary Sinus.
14. M. L. REEHN: Infected Areas around Ends of Roots of Teeth.
15. WARREN COLEMAN: High Calory Diet in Typhoid.
16. PAUL F. CLARK: Action of Subdural Injections of Epinephrine in Experimental Poliomyelitis.
17. M. A. FOWLER: Rare Finding in Suspected Case of Pulmonary Tuberculosis.
18. OSCAR WILKINSON: New Tonsil Forceps.

1. **The Function of the Parathyroid Glands.**—See this JOURNAL for June 15th, page 1296.

2. **The Internal Function of the Pancreas.**—See this JOURNAL for June 15th, page 1296.

3. **Anatomical and Physiological Effects of Iodine on the Thyroid Gland of Exophthalmic**

Goitre.—See this JOURNAL for June 15th, page 1296.

4. **Newer Methods of Diagnosis of Pathological Conditions of the Liver.**—Chase observes that the doctor and the liver have been comparative strangers until quite recently, the size, position, and anterior border of the organ alone claiming attention. The importance of discovering the presence of pathological conditions of the liver and pancreas, and determining the functional activities of these organs by simple and exact methods are among the present pressing needs of the clinician and surgeon. To this end two tests of liver functions are presented and their theoretic and practical interpretation, which have for some time been in routine use by the Neisser clinic in Vienna. The "urobilinogen test" or "Ehrlich's aldehyde test" solution is made with paradimethylaminobenzaldehyde, four grammes; hydrochloric acid, forty grammes; water and a few drops of alcohol to 200 c. c. One or two drops of this solution are added to five c. c. of fresh urine. A rose red color develops, usually in the first few minutes, if urobilinogen is present. Occasionally one half to two hours is necessary to develop the extreme depth of color. The test may be obscured in a dark, bile laden urine, by the bile pigments. In this case add a few drops of chloroform to the urine containing the reagent, and the color will appear in the chloroform in the bottom of the tube. The second or "galactose test" is a general functional test. After free purgation forty grammes of milk sugar are given in tea at 9 a. m., the patient urinates at 12 and calls on the physician at 1 p. m. Fehling's or Haine's test will detect the galactose if any is present, and at the same time indicate that the liver is unable to store up a normal quantity of carbohydrate. Routine use of these tests in private and hospital work is advisable.

6. **Gastrocoloptosis; Pathological Significance and Surgical Treatment.**—See this JOURNAL for June 8th, page 1220.

7. **Role of the Movable Kidney in Intestinal and Vascular Stasis.**—See this JOURNAL for June 8th, page 1220.

8. **Parakeratosis ostracea (scutularis).**—See this JOURNAL for June 8th, page 1229.

9. **Value of Lane Bone Plates.**—See this JOURNAL for June 15th, page 1296.

10. **Operative Treatment of Fractures and Dislocations.**—See this JOURNAL for June 15th, page 1296.

11. **Constipation and Headache in Women; Etiology and Diagnosis.**—See this JOURNAL for June 15th, page 1293.

15. **Five Years' Experience with the High Calory Diet in Typhoid.**—Coleman recommends an amount of food exceeding that furnished by any diet hitherto used by 1,500 to 2,000 or more calories per diem. The foods used consist of apple sauce, bread, butter, cooked cereal, crackers, twenty per cent. cream, eggs, milk, sugar, potato, rice, cane sugar and toast. Three important objections have been urged against this diet: That the amount of food recommended cannot be digested and absorbed; that the amount of fat would produce acidosis and disorder in the alimentary canal; and, finally, that the patient does not require this large amount of

food, even if its absorption is possible. All these are not real objections and a lessened mortality, an improved condition of the patients at the end of the febrile period, and a rapid convalescence and return to work are demonstrated.

16. The Action of Subdural Injections of Epinephrine in Experimental Poliomyelitis.—Clark's experiments seem to support the view that a state of vascular hyperemia attended by an exudation of plasma and probably of cells also precedes the severer state of destruction of nerve cells and interstitial tissue of the spinal cord. Again that subdural injections of epinephrine in proper doses may, in subjects of ascending forms of poliomyelitis, be capable of averting a fatal issue through the involvement, in the extending hyperemia and inflammatory edema, of the nerve cells which give origin to the phrenic nerve. Life even may be spared, should this temporary interruption of the pathological process coincide with the natural limitation of the disease. This limitation of the lesions does not seem to be influenced by the action of epinephrine itself, as it is not a curative drug acting upon and neutralizing the poliomyelitic virus. Its action upon the bloodvessels and the consequent control of exudation appears to explain the favorable results following its use.

17. Rare Finding in a Suspected Case of Pulmonary Tuberculosis.—Fowler reports a case in which physical examination showed "the very ear marks" of pulmonary tuberculosis (râles, distant bronchial breathing, and, on percussion, cavity formation or what proved to be such). Autopsy revealed a primary endothelioma of the pleura, with invasion of the upper lobe of the right lung, tumors showing active disintegration. There was also metastasis in the liver, kidneys and septum of the left cardiac ventricle. All laboratory methods failed to demonstrate the tubercle bacillus. Repeated examinations of the sputa, etc., proved negative for tubercle bacilli.

MEDICAL RECORD.

August 3, 1912.

1. W. F. LORENZ: Effect of Specific Treatment on Cerebrospinal Fluid.
2. M. DRESBACH: Examinations of Eyes of College Students.
3. ROBERT A. BACHMANN: Problem of Venereal Prophylaxis.
4. GEORGE W. BEATTY: Rectal Administration of Salicylates in Influenza of Infancy.
5. WILLIAM H. SHELTON: Modern Medical Clinic; Purposes and Requirements.
6. MARY E. LAPHAM: Physical Signs of Pulmonary Tuberculosis Caused by Nasal Stenosis.
7. A. M. FAUNTILEROV: Ice Bag and Appendicitis.

1. The Effect of Specific Treatment on the Cerebrospinal Fluid.—Lorenz has endeavored to ascertain, by experiment, the changes brought about in the cerebrospinal fluid, as to the increase of the globulin content, by nephrocystosis, and the Wassermann reaction, in parasyphilitic cases, using "606" and sodium cacodylate, by the intravenous method. He found that the lymphocytes of the cerebrospinal fluid are reduced after the use of either remedy in early cases of paresis. Following the use of either remedy the excess of globulin in the spinal fluid, as shown by the Noguchi butyric acid test, is less marked, but the lymphocytosis and the globulin content of the spinal fluid tend to parallel each other in this reduction. Within three hours after administration sodium cacodylate and "606" disappear from the blood. One hour after the administration of

sodium cacodylate arsenic is present in the blood serum and spinal fluid. Following the use of these remedies the urine very soon reveals the presence of arsenic, and sodium cacodylate is probably entirely excreted within two days. By the intramuscular or the intravenous route, a safe dose of sodium cacodylate is one grain. Three cases of Huntington's chorea gave a positive Wassermann reaction with the blood serum and two with the spinal fluid.

2. Examinations of the Eyes of College Students.—Dresbach, from extended eye tests at various colleges and universities, has found that ocular defects are an important factor in determining the efficiency of work done. There is need for more thorough examination of the eyes of public school children; rough tests for myopia are all that are usually attempted, so that many cases of astigmatism and hyperopia are missed. The latter are the more serious cases and have been responsible for the downfall of many a worthy student by interfering with proper study. Eyestrain is not a fad or pet subject for the oculist to expatiate upon. The lives and careers of great numbers of people are affected most seriously by defective vision. Among college students it may defeat progress and success.

3. The Problem of Venereal Prophylaxis.—Bachmann describes the various methods used, the so called single method and the double method. The single method usually consists in the use of an ointment of calomel, having lard, lanolin, or cosmolin as a base, and sometimes containing in addition, to calomel, carbolic acid, thymol, argyrol, protargol, lysol, or tricesol, dispensed in a collapsible tube of metal, paper, or celluloid. This is intended to be used as soon after exposure as possible, certainly within eight hours to be effectual. In the double method, the external genitals are washed thoroughly with bichloride solution (1 to 5,000); the urine is then voided and four c. c. argyrol solution (twenty per cent.) is injected into the urethra and held there for one to five minutes; last the entire penis (foreskin, head and shank of penis, especially about the frenum) is smeared with calomel ointment (twenty to fifty per cent.) and allowed to remain undisturbed. Prophylaxis is possible, but requires much care from the medical officers, and the double method must be rigorously applied to be effectual. After ten hours following exposure, prophylaxis is at least uncertain, and generally of no avail.

6. The Physical Signs of Pulmonary Tuberculosis Caused by Nasal Stenosis.—Lapham notes that the relation of nasal obstruction to asthma is admitted. She has found some form of nasal obstruction so frequently in her phthisis cases that she believes that there is an equally intimate connection between nasal obstruction and apical tuberculosis. The mechanism of respiration in the weakest part of the lung (the right apex) is disturbed by nasal obstruction, which causes symptoms and physical signs that are absolutely typical of tuberculosis. It is possible that by removing these nasal obstructions and establishing good, free breathing through the nose, not only may we alter the conditions threatening the physical and mental development of the patient, we may also lessen his chances for tuberculous invasion.

7. **The Ice Bag and Appendicitis.**—Fauntleroy, as a result of observations in a series of seventy cases of appendicitis that have come to operation, warns against the more or less common use of the ice bag as a part of the preoperative treatment. The ice bag is distinctly harmful and should never be used; in its stead the employment of Bier's hypere-mic treatment is more logical and efficient.

BRITISH MEDICAL JOURNAL.

July 27, 1912.

1. JAMES BARR: "What Are We? What Are We Doing Here? Whence Do We Come, and Whither Do We Go?"
2. G. A. GIBSON: Relations of Circulation.
3. F. T. PAUL: Personal Experiences in Surgery of Large Bowel.

1. **What Are We?** Barr, while presenting no observations in themselves new, places an interpretation upon some well known, but too little remembered facts which it will be well to note. He remarks that we medical men are ever more or less successfully adapting the environment to the individual, and affording the weakling an equal chance of survival with the strong; in fact often a much better chance, not only of surviving, but of multiplying, for the strong have to take all the risks both in supporting themselves and in maintaining the decadent. We have successfully interfered with the selective death rate which Nature employed in the elimination of the unfit, but, on the other hand, we have made no attempt to establish a selective birth rate so as to prevent the race being carried on by the least worthy citizens. The race must be renewed from the mentally and physically fit, the moral and physical degenerates should not be allowed to take any part in adding to the race. Above all, we must breed for intelligence. The laws of heredity should be widely taught, so that those with hereditary blemishes may consider their moral responsibility in bringing children into the world. It is a question of quality rather than quantity. In the past fifty years there has been an actual and relative increase in insanity which is becoming more and more noticeable in the decadent stocks. This tends to elimination, and so tends to retain the average level of the population, but much harm is done before this elimination is accomplished. There has been a similar marked increase in the numbers of the feeble minded. This class, although their average longevity is not great, are very prolific, and are not guided by economic considerations; they merely gratify their natural passions without regard for the consequences, and start reproduction at an early age. The same proclivity is noticeable among the wastrels, the unemployables, the paupers, and the ne'er-dowells. The hard worked wage earner does not have a fair chance, for he has not only to support his own family, but is taxed almost out of existence to maintain the extravagance of wasteful governments, and of a sympathetic irrational public. We should not allow our indulgence to degenerate into license, and while we look after the wastrels of the present generation, and thus gratify our sympathies we have no moral right to leave a legacy of mental obliquity and of physical decadence to weigh upon the next generation. The ignorant plan of affording equal opportunities to all, opportunities of which the great majority cannot make use, has cost the country an enormous sum of money—money wasted. The

feeble minded individuals are a growing incubus on the nation, and should be dealt with in the most humane manner by their sterilization or segregation.

3. **Surgery of the Large Bowel.**—Paul considers the surgery of cancer of the large intestine to the exclusion of almost all other conditions. He remarks that, contrary to general beliefs, the colloid is the most malignant type of cancer in this organ, the ring scirrhus next, and the fungating or encephaloid the least. He further expresses the belief that spontaneous cure of cancer of the bowel may occur. This he bases on the following observations: Many cases having the minute structure of cancer have not recurred although the disease was insufficiently removed. Malignant disease of the bowel, though very rarely removed early, yields surprisingly good results after operation. The duration of life after single colotomy for inoperable cancer of the bowel is often prolonged, compared with that of other inoperable cancer cases. A proportion of the cases seen and handled as malignant get well after colotomy and the tumor disappears. Paul believes that in cases of complete obstruction colotomy, either left inguinal or right lumbar, should be the first step. This is to be followed later by short circuiting the bowel, or by resection of the growth. The former has yielded poorer results than the latter.

LANCET.

July 27, 1912.

1. G. A. GIBSON: Relations of Circulation.
2. F. T. PAUL: Personal Experiences in Surgery of Large Bowel.
3. H. C. FRENCH: Syphilitic Lung Affections and Immunity in Native Races.
4. M. VIARSLEY: Causes Leading to Educational Deafness in Children with Special Reference to Prevention (Concluded).
5. G. H. CLARK and DOROTHY LINDSAY: Distribution of Chloroform in Blood.
6. E. B. SMITH and A. W. G. WOODFORD: Unusual Forms of Meningitis in Infancy.
7. R. R. JAMES and W. F. FEDDEN: Pulsating Exophthalmos. Ligation of Carotid Artery.
8. F. W. FORDICE-GREEN: Chimie of Sir Charles Bell's Discovery of Motor and Sensory Nerve Channels.

4. **Educational Deafness.**—Yearsley passes to the consideration of the causes which lead to the acquired form of this affliction. He finds that of the acquired cases 34.4 per cent. were due to infective diseases, and 26.3 per cent. of the whole number to the infectious fevers. Measles caused the deafness in 11.48 per cent.; scarlatina in 9.79 per cent.; diphtheria 2.02; pertussis 1.18; influenza 0.67 per cent.; etc. Occasional instances of the other infectious fevers acting as causative factors were found. Other than the exanthemata, pneumonia was found to have caused the deafness in 2.7 per cent.; tuberculosis in only 0.33 per cent.; and congenital syphilis in 6.5 per cent. These last two figures are probably too low; that for tuberculosis because of the difficulty of proving tubercle as the cause in the presence of secondary pyogenic infection; that for congenital syphilis on account of the extreme difficulty in obtaining a history of the disease in one or the other of the parents. Meningitis, exclusive of epidemic cerebrospinal and tuberculous forms, led to deafness in no less than 10.9 per cent. of acquired cases. All cases of deafness due to meningitis or other disease of the nervous system were due to internal ear, labyrinthine involvement. Primary ear disease, suppurative or catarrhal, was behind the deafness in 29.7 per cent. of cases and

in the vast majority of instances was in turn dependent upon disease in the nasopharynx (adenoids) or the nose. Yearsley believes that the greatest hope of successfully combating educational deafness lies in its prevention. By way of preventing the congenital cases, he believes that the proper application of eugenic principles would accomplish much. Marriages of the congenitally deaf, of blood relations, of alcoholics and syphilitics, and of those having a family taint of insanity, epilepsy, or other neurosis should be prohibited. Further, the sterilization of the unfit would accomplish this end and more in a positive manner. Acquired deafness is far more readily preventable, first, by the proper hygiene of the nose and mouth and the prompt and proper treatment of all affections of these cavities and of the nasopharynx. Prevention of the infectious fevers and other predisposing constitutional diseases is already being sought on other grounds, but far too little attention is paid to the nose and ear in cases of these fevers, and here it is that the field for the prevention of deafness from these causes lies.

5. Chloroform in the Blood.—Clark and Lindsay have carried on a series of experiments on rabbits to determine the relative distribution of chloroform in the red cells and the plasma when given by inhalation and when administered subcutaneously. By inhalation the plasma acquires from 9.2 to 14.8 per cent. of the total amount found in the blood; by injection from 18.4 to 27.6 per cent. is found in the plasma. The authors believe that, inasmuch as the drug is promptly given up by the red cells and long held in the plasma, the presence in the latter of an excess of the chloroform over that usually found is the cause of the development of delayed chloroform poisoning. Their experiments serve to confirm this view, for one animal which died just prior to the cessation of chloroform inhalation was found to have 32.3 per cent. of the drug in the plasma. The delayed elimination of the drug from the plasma allows it to continue to act detrimentally upon the liver and kidneys. These organs were found to be more severely damaged in the animals receiving the drug subcutaneously than in those which were allowed to inhale it.

6. Unusual Forms of Meningitis.—Smith and Woodforde report a case of meningitis presenting no unusual symptoms, save a duration of fourteen weeks, from the spinal fluid of which a leptothrix was repeatedly isolated in pure culture. Subsequently this organism disappeared, the fluid became clear, but fever persisted and after a brief interval tubercle bacilli were found in the spinal fluid. Death soon resulted from tuberculous meningitis and an autopsy confirmed the latter findings and revealed no trace of the previous infection. Their second case is equally rare, being one of pure coli communis infection of the meninges without any discoverable source of the infection. Primary coli bacillus meningitis seems heretofore to have been an almost unknown condition.

AUSTRALASIAN MEDICAL GAZETTE

June 22, 1912.

1. F. W. WEST: Actinomycosis: Clinical Notes on Five Cases.
2. A. P. GILLESPIE: Anaphylaxis.
3. H. F. SHOREY: Snowblindness in Australian Alps.
4. H. J. CLAYTON: Acute Yellow Atrophy of the Liver.

2. Anaphylaxis.—Gillespie reports a case in

which very serious symptoms were caused by the injection of antidiphtheritic serum about eighteen months after a previous injection. The patient collapsed fifteen minutes after the injection, became unconscious, vomited five times in six hours, had very shallow respiration, thirty-five to the minute, a pulse of very poor tension, 120, regular, and a temperature of 101.2° F. He began to recover consciousness at the end of four hours of active treatment, and made an uninterrupted recovery, except that on the sixth day an urticaria developed. Gillespie suggests that the fact of anaphylaxis introduces three questions: The propriety of giving serum, 1, to a person suffering from diphtheria or any other disease treated by a serum, who is known to be the subject of asthma or any similar disease; 2, for a relapse of the disease; 3, as a prophylactic. In respect to 1, the chief consideration is the severity of the attack to be treated. Not every asthmatic is subject to anaphylactic shock, so it should be given if the chance is greater of his dying of the disease than of the results of hypersensitization. With regard to 2, the additional risk of an increase of susceptibility to serum must be taken into account, so a relapse should be very severe to justify a reinjection. As to 3, the immunity produced lasts only a short time and, while its use in this way may be justified in cases of outbreak in institutions, etc., its indiscriminate use as a prophylactic is unjustifiable.

JOURNAL DE MÉDECINE DE PARIS.

July 27, 1912.

1. ROCHON-DUVIGNEAU: Retinitis of Pregnancy.
2. L. DIEULAFÉ: Pathology of Jaws.
3. GILLET, RETEAUD, BRUCHET, MOUSCOURT, CARRA, BRAINE, and MAYREY: Advice to Mothers on Care of Infants.
4. PAUL SOLLAU: Paroxysmal Emotional Bradycardia.

1. Retinitis of Pregnancy.—Rochon-Duvigneau points out that the treatment of this condition is the same as for eclampsia, and the milk régime should be established at the first sign of the lesion discovered by the ophthalmoscope. Sight, life itself may demand the induction of premature labor. Permission for future pregnancies should be withheld.

PARIS MEDICAL.

July 13, 1912.

1. A. GAUTIER: Farewell Address in Medicine.
2. LABORDE: Posology of Sodium Cinnamate.
3. MIRAMOND DE LA ROQUETTE: Absorption and Action of Colored Light.
4. GILBERT: Treatment of Hemoptysis.

July 20, 1912.

5. ROGER: Bradycardia.
6. DEHELLY: Surgery in United States.
7. JUVARA: Hair Tumor in Stomach.

2. Sodium Cinnamate.—Laborde's opinion of this drug is that it is an excellent tonic when administered hypodermically, rapid in action, permanent, and much superior to the cacodylates. He has no hesitation in giving the contents of an ampoule containing five c. c., an equivalent of one centigramme of the salt. Laborde advises personal experiments with drugs and places little reliance on published formulae.

3. Colored Light.—Miramond de la Roquette states that light filtered through colored glass has the effect of light of the same color in the spectrum, i.e., not great. Heat is best transmitted through colorless glass, next best through yellow, then through blue, red, and green. Vegetation is favored

accordingly. To act as a bactericide light in any color must be very intense. The skin and fatty tissues are very permeable to light, muscular and bony tissue much less so. All colored light stimulates the growth of protoplasm, except when intense; it then becomes harmful. White light is best for all purposes, save that colored lights, from their strongly suggestive nature, may be useful in psychotherapeutics.

4. **Hemoptysis.**—Gilbert considers a combination of epinephrine, calcium chloride, and opium to be almost specific; other remedies have been overrated. Locally, ice and mustard are valuable. If these fail, ipecac and tartar emetic may stop the flow.

5. **Bradycardia.**—Roger recalls that this is a symptom only, and the term is used when the heart beat is less than seventy in the hour. As the pulse is not always synchronous with the cardiac impulse, the diagnosis should not be made from the pulse alone. It has long been noted that bradycardias are shortlived. Unless accompanied by the Stokes-Adams syndrome the patient may not notice its presence. Other conditions frequently found with bradycardia are dyspnea, edema, albuminuria, cryesthesia, inequality of pupils, digestive disturbances, angina, nervousness, epilepsy. Death may occur in a convulsion or by gradual asystolia. A nervous bradycardia may be diagnosed by the aid of a hypodermic injection of two milligrammes of atropine, which will increase the beat, sometimes doubling it, if the origin of the disturbance is in the pneumogastric nerve; if atropine produces no effect, the origin of the bradycardia is in the bundle of His. The symptom is often present in convalescence, particularly from the infections. It is also noted in poisoning by nicotine, lead, digitalis, strophanthine, adrenaline, aconitine, muscarine, in infectious icterus, in diseases of the nervous system, in hysteria, neurasthenia, and myocarditis. If bradycardia arises from the pneumogastric, atropine is indicated; if from the myocardium, syphilis should always be looked for. Care should be taken to avoid digitalis.

6. **Surgery in the United States.**—Dehelly found much to astonish him in this country and he has only praise for the equipment and technique he observed in the principal centres.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

June 4, 1912.

1. LANGE: Dislocation of Shoulder Joint.
2. BAEYER: Flatfoot.
3. FLEISCHNER: Pantopon Scopolamine Narcosis.
4. GROSSMANN: New Modification of Residue after Mathieu Reinhold.
5. BRYNDORS: Experience with Diphtheria in One Year.
6. LEDE: Inferior Tracheotomy with Small Transverse Incision in Diphtheria, and After Treatment.
7. WEISS: Urgent Indication for Median Esophagotomy.
8. WEBER: Milk Supply in Country.
9. HILBERT: Cataract Formation through Four Generations of One Family.
10. GALLAND: Simple Method of Phymosis Operation.
11. JUNKER: Unpleasant Occurrences in Tuberculin Treatment.
12. HAPPECH: Interperitoneal Use of Camphor Oil.
13. ROLLY: Reaction of Blood Serum in Normal and Pathological Conditions (Concluded).
14. UFFERHÖRDE: Ocular Muscle Reactions in Irritation of Labyrinth and Reaction in Electrical Irritation in Cerebellum after Experimental Examinations of Monkeys (Concluded).

June 11, 1912.

15. ANDERHILDEIN: Diagnosis of Pregnancy with Assistance of "Optical" and Dialysis Methods.
16. KEHR: Tumors of Duodenum (To be concluded).
17. MASSINI: Importance of Wassermann Reaction in Internal Diseases (To be concluded).
18. LISSMANN: Treatment of Sexual Impotence.
19. TRIDEBRING: Indication for Use of Quartz Lamp in Treatment of Skin Diseases.

20. STARK: Diabetes Mellitus and Pertussis.
21. SPALL: Slight Epidemic of Trichinosis in Cadolzburg.
22. KENIGES: Death during Pregnancy from Heart Failure.
23. GRUTZNER: Two Cases of Puerperal Fever of Interest from Etiological Standpoint.
24. VIDAL: Overcoming the Obstacles in Wet Nursing through Societies for Advising Mothers.
25. MOHR: Enostosis on Upper Surface of Calcaneus.
26. SELL: Release of Phenomena of Hypeosensibility through Albumin from the Body Itself and Its Clinical Importance.
27. VON MÜLLER: Joseph von Baer.

June 18, 1912.

28. QUINCKE: Lymphuria.
29. PLESCH and KARZAG: Effect of Thorium (To be concluded).
30. GRUBER: Experiments with Wassermann Reaction on Cadaver.
31. HELMANN: Chemical, Physiological, and Clinical Studies on cornutum.
32. LEWASCHEW: Specific Therapeutics in Phtisis.
33. SIGLI: Clinical Experience with New Narcotic, Luminal, and Its Sodium Salt.
34. SALINGER: Salvarsan in Chorea Minor.
35. HUFNAGEL: Diseases of Thyroid from Tuberculous Infection.
36. STEINMANN: New Apparatus for High Pressure Narcosis.
37. FLORKEIN: Tendovaginitis on Syphilitic Process of the Radius.
38. TRITMANN: Endotheloma of Nasal Mucous Membrane.
39. BÄMBERGER: Acute Ootemylitis of Thigh in Pregnancy.
40. KIEHR: Tumor of Duodenum (Concluded).
41. MASSINI: Importance of Wassermann Reaction in Internal Diseases (Concluded).

June 25, 1912.

42. SCHMIDT: Rupture of Small Pleural Empyemas into Lungs.
43. LANGE: Paralysis of Infant's Arm at Birth.
44. HARNACK and HILDEBRANDT: Experimental Observations with Toxicity of Rattlesnake Venom.
45. STEIN: Plastique of Nerves.
46. BIRK: Chronic Recurrent Pyelitis in Infancy.
47. JOLLY: Epilepsy after Accident with Electrical Current.
48. IVERSSEN: Neosalvarsan.
49. JOOS: Malignant Brain Tumor Treated with Salvarsan.
50. WAILE: Epidemiology of Perityphilitis.
51. ALTHOFF: Prescribing Hydrogen Peroxide.
52. MAYER: Fatal Abdominal Puncture in Insulation Carcinoma of Parietes after Miliary Carcinoma of Peritoneum.
53. BRUCE: Semmelweis and Lister.
54. RITTLER: German Sanatorium in Davos and Sanatorium Movement in Germany.
55. HAUSSEIN: Releasing Phenomena of Hypeosensibility through Albumin from the Body Itself and Its Clinical Importance.
56. PLESCH and KARZAG: Effect of Thorium (Concluded).
57. KÜSTER: Eduard Strasburger.
58. FISCHER: International Exposition of Social Hygiene in Rome.

3. **Pantopon Scopolamine Narcosis.**—Fleischner concludes from his experiences on the German otorhinological clinic in Prague that pantopon scopolamine narcosis, together with ether chloroform inhalation anesthesia may be used in ear and throat surgery with good success and may therefore be well recommended. There are hardly any contraindications, although the dose must be carefully administered and thoroughly individualized. In alcoholics and in patients in whom the meninges are changed vigilance is necessary.

6. **Inferior Tracheotomy with Small, Transverse Incision in Diphtheria and Its After Treatment.**—Leede is in favor of small, transverse incisions in tracheotomy. The incision is to be made as a transverse cut upon the cricoid cartilage with elevation of a fold of the skin; upon bending the head backward the wound opens so that the lower part gaps more than the upper, allowing a good inspection of the topography of this subcricoid region. In the median line will be seen the linea alba, which is to be used as a guide to cut through the muscles upon the trachea. This operation will thus avoid severe hemorrhages with dangerous ligatures, and the resulting scar is very small.

9. **Cataract Formation through Four Generations of One Family.**—Hilbert reports an interesting case of heredity. In four generations, but affecting only the female members, he could diagnose lamellar cataract, while the male members had absolutely normal eyes. Among the members of the family no intermarriages had occurred; syphilis or rachitis could be positively excluded.

24. **Overcoming the Obstacles in Wet Nurs-**

ing through Societies for Advising Mothers.—Vidal reports the results which he found from systematically carried out advice given by Sisters of Charity to nursing mothers. The statistical table which he appends to this article seems to enforce his statement that if such a plan of advising nursing mothers in reference to their milk, to the nursing, and to the infant is carried through the mortality of infants will be greatly decreased.

28. **Lymphuria.**—Quincke proposes for careful observation the possibility that albuminuria can also be produced from lymph being added to the urine. We know that certain albuminurias do not originate from a diseased kidney, as, for example, the appearance of albumin in the urine after severe muscular exercise, after labor, after a cold bath, etc. The hypothesis of a lymphuria would therefore have much in its favor.

30. **Experiments with the Wassermann Reaction on the Cadaver.**—Gruber also has examined the usefulness of the Wassermann reaction post mortem and he affirms previous observances. His researches do not bring out anything new. He remarks that the test should only be carried through when it retards the hemolysis of the red blood corpuscles very much, and it should only be made in a cadaver in which a diagnosis for syphilis is nearly positive.

31. **Chemical, Physiological, and Clinical Studies on Systogen, a Synthetic Preparation to Take the Place of Secale.**—Heimann says that systogen represents the typical tyrosamin or para-oxypheylethylamin of secale cornutum and is produced synthetically by a method which according to the manufacturers corresponds to the chemical changes which take place through Nature in ergot of rye. This statement seems rather peculiar to us, but whatsoever the synthetic systogen may be, Heimann speaks highly of the preparation, citing 208 cases in which it has been used. He concludes that it is a perfect substitute for secale cornutum, is absolutely nonpoisonous, and gives in easily adapted doses a perfect therapeutical effect. The dose for a subcutaneous injection is 0.5 c. c. in labor, and from 0.25 to 0.5 c. c. for the expulsion of the placenta. He says that the solution contains one c. c. two milligrammes of systogen, which would correspond physiologically to the effect produced by two grammes of secale freshly prepared. The contractions of the uterus took place from one half to five minutes after the injection, and were strong and of quite some duration.

WIENER KLINISCHE WOCHENSCHRIFT.

June 6, 1912.

1. R. KRAUS: Cells and Reactions of Carcinoma.
2. R. MÜLLER: Influence of Salvarsan Treatment upon Wassermann Reaction.
3. THADDAUS KLECZKOWSKI: Eosinophilia in Glaucoma.
4. THEODOR BAUER: Diverticula of Duodenum.
5. EDMUND HOKE: Angina abdominalis.
6. OTTO KAHLER: Laryngology and Rhinology in Their Relation to General Diagnosis.
7. ERICH EBSTEIN: Diabetic Coma.

June 20, 1912.

8. HOCHENEGG: Total Intestinal Extirpation.
9. C. FÖRSTER: Indications and Results of Resection of Posterior Roots of Spinal Cord.
10. A. PULAWSKI: Surgical Treatment of Basedow's Disease.
11. VIKTOR GIELCZYNSKI: Emphysema pleurale, mediastinale et subcutaneum, in Bronchial Pneumonia of Nursing.
12. JOHANNES MÜLLER: Melubrin and Its Therapeutic Effect.
13. S. JELLINEK: First Aid in Electrical Accidents.

June 27, 1912.

14. S. GOLDFLAM: Phenomena of Pupils (To be concluded).
15. EDMUND HOKE: Experimental Investigations on Pulsus paradoxus.

16. KONRAD STEIN: Otaglia Angiosclerotica.
17. ERWIN VON GRAFF: Primary Sarcoma of the Stomach.
18. XAVER WALTER: Effect of Adalin.

1. **Reaction of Carcinoma.**—Kraus observes, in speaking of reaction of carcinoma, that the *conditio sine qua non* of such a reaction must be that a positive test indicates a tumor and is to be followed by an operation. Even if the reaction gives only fifty per cent. positive results it must be taken as practical, if normal persons and all other diseases gave negative results. Naturally, a reaction which gave for other diseases positive results, would lose its practical value. Among the reactions which should be excluded, therefore, he mentions the isolysin and the antitrypsin test; furthermore the cobra venom test. He then takes up the test proposed by several authors, which is based upon the theory of Wassermann's syphilitic reaction, which, he thinks, promises good results, especially the method proposed by von Dungern; similar results might be expected from Weichardt's investigations and those of other scientists.

12. **Observations on Melubrin and Its Therapeutic Effect.**—Müller takes up the action of melubrin, a new antipyretic. His results coincide with those of Loening and Krabbel, whose articles on this subject we have reviewed in these pages.

16. **Otaglia Angiosclerotica.**—Stein comes to the conclusion that arteriosclerotic changes in the vessels supplying the ear produce painful and disagreeable sensations in the aural organ, for which he proposes the name otaglia angiosclerotica. The diagnosis can be made only if angiosclerosis is present and if other reasons for the pain can be excluded; in dubious cases theobromin should be given. The vasodilating effect of theobromin will thus not only be a good adjuvant in the diagnosis but also the treatment *par excellence* in such cases.

18. **The Effect of Adalin.**—Walter speaks about the new preparation adalin, a bromdiethylacetyl carbamide, a white, crystalline, odorless, somewhat bitter powder; poorly soluble in cold water, more soluble in warm, very soluble in fat. He states that it is a good narcotic. About an hour after taking from 0.75 to one gramme of adalin in tablet form, given with hot tea, the patient becomes drowsy and sleeps about ten hours quietly, awakening with a sense of refreshment. The sleep is not deep, but when awakened the patient soon falls asleep again. Disagreeable sequelæ and by effects have not been observed.

ZENTRALBLATT FÜR CHIRURGIE.

July 13, 1912.

1. RIEDEL: Technique and After Treatment of Resection of Tuberculous Knee Joint.
2. W. MERKENS: Treatment after Resection of Knee Joint.
3. R. LEWISOHN: New Esophagoscope.

July 20, 1912.

4. F. FRANKE: Treatment of Echinococcus with Formalin.
5. E. JEGGER and H. LAMPI: Technique of Suturing Vessels.

1. **Resection of the Knee Joint.**—Riedel describes the technique of the manner in which he operates very minutely. The principal points seem to be that in sawing through the femur the joint is at first extended and the cut made to the depth of two cm., exactly parallel to the lower surface of the joint, almost, but not quite vertical to the long axis of the bone; the joint is then bent at a right angle and the section completed. This is so that the bones may unite in their normal position, which is one of

slight genu valgum, more marked in women than in men. The second point is that the dressing is applied while the limb is held upright in a vertical position by two assistants, the surgeon himself applying the dressings. No drainage is provided for. The dressing is left on six weeks, at the end of which time the bones are supposed to have united. For full details, reference is to be made to the original paper.

ZENTRALBLATT FÜR INNERE MEDIZIN

June 29, 1912

E. HERZFELD: Demonstration of Uric Acid in Blood Serum and Synovial Fluids.

Test for Uric Acid in Blood.—Herzfeld describes a simple, qualitative test for uric acid, requiring the use of only two to five c. c. of blood serum. The serum is diluted with an equal volume of 0.9 per cent. sodium chloride solution, shaken with a little bone black, and filtered. The filtrate may be further clarified by centrifugation. To the resulting colorless or slightly yellowish fluid is first added an equal volume of a solution of phosphomolybdic acid (ninety c. c. of ten per cent. phosphomolybdic and ten c. c. of concentrated hydrochloric acid), with which it is thoroughly mixed. The same amount of twenty per cent. potassium hydroxide solution is then added. In the presence of uric acid a pronounced blue coloration appears (a feeble greenish coloration is without significance), which is lost again in a few minutes. With numerous sera from healthy individuals Herzfeld obtained a faint but readily appreciable coloration, which was of almost equal intensity in all cases. With sera from patients suffering from pneumonia, gout, and nephritis the blue color was considerably deeper. In cases where uric acid is not present in sufficient amount to permit of quantitative estimation, this simple qualitative test will serve quickly to reveal any increase above the normal. Peptone was found to be the only substance other than uric acid which gives a positive test, but the coloration with it is very slight and is not augmented with increasing concentrations; no confusion, therefore, can occur. Herzfeld also describes a quantitative method for uric acid estimation which, however, requires the use of forty to 100 c. c. of blood.

ROUSSKY VRATCH.

April 28, 1912.

1. W. W. STROGANOFF: Rising after Confinement.
2. U. U. IVERSEN: Neosalvarsan.
3. U. U. IVERSEN and M. D. FUSHINSKY: Neosalvarsan in Treatment of Tertiary Malaria.
4. G. A. LOBENTZKY: Significance of Absorption as Therapeutic Method. Absorption of Phenol by Animal Charcoal in Vitro and in Vivo. Charcoal as Antidote for Phenol.
5. M. I. NEMENOFF: Treatment of Fibromyoma and Uterine Hemorrhage with X Rays.
6. A. I. BRODSKY: What Has Therapy of the Central Nervous System Gained by Salvarsan?
7. W. E. PAVLOFF: General Chorea Cured by Salvarsan.
8. PH. D. RUMJANTZEFF: Nephritis in Scarlet Fever.
9. L. K. BILIM-KOLOSOVSKY: Treatment of Acquired Elephantiasis of Legs.

1. Rising after Labor.—Stroganoff argues in favor of shortening the lying in period. Drainage, a very important factor in preventing infection and promoting involution, is facilitated by a vertical posture; the bowels and bladder are emptied more readily, and thus the general nutrition is improved. The fear usually entertained that leaving the bed too soon will lead to subinvolution is not supported by either anatomical facts nor observation of this

practice among the common people. In the standing posture the weight of the uterus falls, not on the perineum, but on the pubis, while the friction between the body of the uterus and the solid support favors contraction. The abdominal walls and perineum, put on a stretch, are stimulated to contraction and normal involution. Turning to popular practice, while the peasant woman gets up early, generally the second or third day, she is nevertheless more prolific than any other European woman, indicating a healthy state of the generative organs. In his wards, the author permits the women to turn and sit up in bed on the first, and leave the bed for short periods on the third or fourth day; and yet for a period of sixteen years, with 9,775 deliveries, the results of this practice have been uniformly favorable.

2. Neosalvarsan.—Iversen experimented with neosalvarsan sent him by Ehrlich, and found it superior to the older preparation. It is more readily soluble in water, less toxic, and less irritating, consequently it may be employed in larger doses. For intravenous injection 0.9 gramme neosalvarsan was dissolved in 200 c. c. of sterile, freshly distilled water. For intramuscular injection the same quantity of the drug was dissolved in 20 to 30 c. c. of distilled water and 10 to 15 c. c. injected into the gluteal muscles on each side. The pain is insignificant, but can be prevented by a previous injection of a one or two per cent. solution of novocain. The injections were repeated every day for four days, using from 0.75 to 1.2 gramme of neosalvarsan in man and 0.6 to 0.75 gramme in woman for each dose. The results obtained were splendid, even superior to those following injections of salvarsan. The author sees in this new preparation an advance in the method of rapid sterilization of the organism.

3. Neosalvarsan in Malaria.—Iversen and Fushinsky employed neosalvarsan in the treatment of five cases of tertiary malaria, using from 0.6 to 0.75 gramme for a single intravenous injection. In each case the attack was aborted and the plasmodia disappeared from the peripheral blood. There is, probably, a return of the plasmodia on the tenth day, and a repetition of the injection is suggested ten days later. This treatment is superior to quinine, because of its brief duration, only two injections being required.

4. Absorption of Phenol by Animal Charcoal.—Lubenetzky found that animal charcoal abstracts phenol from a watery solution. Thus, by adding five grammes of animal charcoal to 100 c. c. of a three per cent. watery solution of phenol, seventy-two per cent. of the phenol will be taken up by the charcoal. By the addition of more water, or by washing the charcoal, the phenol may be recovered, showing that the absorption is purely mechanical and bears a definite relation to the quantity. Experimenting on animals, it is found that when phenol is administered simultaneously with charcoal the latter takes up the phenol, but gives it up under the influence of the fluids in the digestive tract. However, this abstraction of the phenol and the cleavage of the phenol from the charcoal takes place so slowly that the organism gets rid of the phenol without any toxic effects. Animal charcoal

should prove, not only an excellent antidote in phenol poisoning, but a detoxicating agent after such poisons as morphine, strychnine, ptomaine, etc.

5. Röntgenotherapy in Fibroids and Metrorrhagia.—Nemenoff presents the following conclusions from his own observations and an exhaustive study of the literature: 1. Röntgenotherapy is absolutely indicated in preclimacteric metrorrhagia, provided malignant disease of the uterus is excluded by a microscopical examination of the scrapings. 2. Women with fibromyoma who suffer from marked anemia, myocarditis, nephritis, or any other complication which renders operation dangerous should be treated with the x ray. Great caution should be observed in women less than forty years of age. 3. In women of forty years and over, röntgenotherapy of fibroids is on a par with an operation. 4. In women less than forty, röntgenotherapy should be undertaken only when the hemorrhages are severe and the patient refuses an operation. 5. Röntgenotherapy is contraindicated in subserous myoma. 6. In dysmenorrhea and menorrhagia in young women, röntgenotherapy is indicated when all other measures fail. 7. Salpingo-oophoritis is a contraindication to the employment of the x rays.

6. Value of Salvarsan in Nervous Diseases.—Brodsky administered salvarsan to 102 patients suffering from various nervous affections. Of these, forty-two were affected with meningomyelitis and myelitis; one with irritation of the cauda; forty-eight with locomotor ataxia; seven with cerebral disease (form not stated); three with diffuse sclerosis; one with epilepsy. Favorable results were obtained only in acute conditions, such as cerebral syphilis, specific arteritis, and gumma. On the other hand, in patients with diseased conditions of long standing, the results were indifferent or negative. In all cases of spinal affections recourse was had to mercury and iodine, the salvarsan alone showing no appreciable effect. At the present time the employment of salvarsan in diseases of the central nervous system cannot be ranked as very important therapeutically, although it does act well in certain isolated cases. The indications for the employment of mercury and iodides are now just as strong as before, although the addition of salvarsan is beneficial.

7. Chorea Cured by Salvarsan.—Pavloff reports a case of general chorea successfully treated with salvarsan. He collected from the literature records of ten similar cases in which this drug was successfully employed.

9. Surgical Treatment of Elephantiasis.—Bilim-Kolosovsky performed Handley's operation on two patients affected with elephantiasis of the lower extremities. The results were excellent. Great care is necessary to bring about, and maintain perfect asepsis as well as prolonged absolute rest. The best results were obtained with the patient whose leg was immobilized for two and a half months.

ANNALS OF SURGERY

July, 1912.

1. STANLEY STILLMAN: Treatment of the Defect Occasioned by Partial Excision of Inferior Maxilla.
2. CHARLES H. MAYO: Surgery of Thymus Gland.

3. FILLSWORTH ELIOT, JR.: Treatment of Subclavian Aneurysm.
4. WILLY MEYER: Drainage after Endothoracic Operations with
5. LUCIUS W. HOTCHKISS: Acute Pancreatitis with Very Extensive Fat Necrosis.
6. ARPAD G. GERSTER: Nephrectomy.
7. WILLIAM J. TAYLOR: End Results in Sixty-three Cases of Operation for Brain Tumor.
8. ROBERT W. JOHNSON: Tomato Joint.
9. A. PRIMROSE: Hemorrhage into Peritoneal Cavity Caused by Accidental Rupture of Ovary.

2. Surgery of the Thymus Gland.—Mayo says a problem of fundamental importance in the science of medicine, the solution of which would radically change some indefinite symptomatology, aimlessly directed therapeutics, and erroneous records of mortality, is that of the so termed internal secretions. He further asserts that it seems probable that some of the reports attributing to status lymphaticus the sudden deaths, especially in children, either during or following operation, have been written with a view of distracting attention from the anesthetic as a factor. Many such instances occur at an age when the thymus should be large normally. In some of the deaths ascribed to status lymphaticus, in which no great enlargement of the gland was evident at autopsy, it has been taken for granted that there must have been a temporary sudden congestion of the thymus which caused the death suddenly, and that the enlargement naturally disappeared with this transitory congestion. In a case operated in in his clinic, only one lobe was removed. The relief was immediate and yet there was an occasional symptom of pressure for a number of days. The cure was complete. A drain should not be used unless indications for drainage are urgent. In case it is, then use a folded strip of rubber tissue for a few hours only.

3. Treatment of Subclavian Aneurysms.—Eliot, Jr., states that the most satisfactory treatment in aneurysms of the third part of the right subclavian (or of either subclavian) is a ligation of the first part of this artery together with its branches, with the possible exception of the vertebral; such simultaneous ligation of the branches diminishes both the risk of secondary hemorrhage and the possibility of subsequent recurrence of the aneurysm; in the event of a recurrence, a cure may be effected by distal ligation of the axillary as close to the aneurysmal sac as possible; should the aneurysm again recur, excision of the aneurysmal sac after the ligation of the main arteries supplying it should be attempted; these various operations are facilitated by a preliminary resection of the clavicle and if necessary of a portion of the manubrium as well. In many cases a cure of the aneurysm is marred by some permanent disturbance of the extremity, either motor, sensory, or trophic; unfortunately these patients are prone to the subsequent development of a fatal aneurysm of the aorta.

5. Acute Pancreatitis with Very Extensive Fat Necrosis.—Hotchkiss asserts that the occurrence of fat necrosis is by no means uncommon in cases of acute pancreatitis. Although it is rarely seen in the acute hemorrhage form of the disease, for the reason perhaps that the patient so rapidly succumbs to the intense primary shock, it is frequently observed in the somewhat milder though still acute types, where the damage to the pancreas is not so extensive, and where repair of the lesion, without much impairment of function,

is still possible. Unfortunately, however, the diagnosis in these acute lesions of the pancreas has not yet reached such a satisfactory stage. In the severer cases, with rapid onset and spread of the fat necrosis, it is obvious that the natural processes are in need of help from the surgeon. Aside from problems of diagnosis which are of the utmost importance, the still difficult problem of appropriate treatment is constantly presenting itself.

6. Nephrectomy.—Gerster states that the larger proportion of mortality in secondary nephrectomy (cases of error of diagnosis excepted) is fully explained by the fact, that here we had to deal with inherently grave conditions, both because of a deep deterioration of the general condition, and because prolonged suppuration had led to the formation of extensive, dense adhesions. It has been asserted that the establishment of drainage was the cause of these close adhesions. This assertion, however, has never been proved, nor is it in accordance with established experience. It is far more likely that effective drainage of a closed pus sac will not only stop fever, but arrest the formation of new adhesions.

8. Tomato Joint.—Johnson says this is not a discovery, but a reminder. His reason for bringing the subject of gout before us is that frequently in the autumn one is called to see cases of joint involvement that have earmarks of surgical trouble. He states that the majority of these joint pains are due to the ingestion of too many tomatoes, pointing out that there are 288,000,000 cans of tomatoes consumed every year in the United States to say nothing of the millions in the natural state.

ARCHIVES OF INTERNAL MEDICINE.

June, 1912.

1. O. C. GRUNER, F. A. C. SCHRAGER, and L. S. FOSTER: Clinical and Histological Study of Case of Paget's Disease of Bones with Multiple Sarcoma Formation.
2. THEODORE B. BARRINGER, JR., and MORTIMER WARREN: Prognosis of Albuminuria with or without Casts.
3. LOUIS EYMANN and C. P. HOWARD: Metabolism of Scurvy in an Adult.
4. M. C. WINTERNITZ: Tuberculosis of Spleen.
5. WALTER V. BREM: Studies of Malaria in Panama: IV, Relation of Malaria to Other Diseases, with Especial Reference to Dysentery.
6. G. N. NEWART: Studies on Circulation in Man: V, Effect on Blood Flow in Hand of Applying Different Pressures to Upper Arm: Contribution to Clinical Measurement of Blood Pressure.
7. FRANK SMITHIES: Method for Microscopical Examination of Gastric Extracts and of Feces.

2. Prognosis of Albuminuria with or without Casts.—Barringer and Warren, from a study of 396 cases, of which seventy were revisited from ten to eleven years after the first examination, conclude that renal albuminuria without casts is most frequently found in young adults. It is exceptional as a symptom of incipient nephritis. It is rather to be regarded as evidence of a generally lowered resistance which predisposes to tuberculous infection. The mortality among these people is higher than among normal subjects. Cases of albuminuria with a few hyaline casts show no particular age incidence; the mortality in this group is also above normal. Persons with albuminuria and granular casts show a much higher mortality than normal and a much greater tendency to renal and arterial disease than either of the preceding groups. Whatever the urinary findings, age is a factor in the prognosis of albuminuria, young people having the most favorable outlook as regards the possibility of an ultimate nephritis.

4. Tuberculosis of Spleen.—Winternitz reports a case of primary tuberculosis of the spleen and tabulates fifty other cases found in the literature. The condition occurs oftenest between the ages of twenty and forty years, though it may occur at any period of life. It is equally distributed between the sexes. The onset is marked by either pain, tumor, or both, in the splenic region, in over seventy per cent. of cases. Occasionally there are associated gastric or respiratory disturbances, loss of weight, weakness, or lassitude. These cases, as a rule, run a chronic course. Another group of cases show symptoms such as collapse, fever, chills, backache, etc., and run an acute course, while a third group of cases present symptoms of onset and run a course intermediate between the two already mentioned. The blood picture is very inconstant. The skin may be normal, pale, cyanotic, or icteric; purpura or ecchymoses may also occur. Death invariably follows if the spleen is not removed. Of the patients in whom splenectomy was performed, fifty-nine per cent. recovered. The spleen may be greatly increased in size and weight. In eighty per cent. of the cases in which the liver was examined it showed tuberculosis. The lungs were involved in forty per cent., the disease process being still active in twenty-four per cent. Only one case showed the tuberculosis to be confined to the spleen. Pulmonary scars, old cervical adenitides, etc., have been found in so many of the cases carefully examined post mortem that it is evident that the process in the spleen is frequently secondary to some old, healed or quiescent focus.

5. Malaria and Other Diseases in Panama.—Brem finds that the so called choleraic and dysenteric types of pernicious malaria do not occur in Panama. In 4,691 malarial infections the number of cases complicated by acute or amebic dysentery, typhoid fever, pneumonia, pulmonary tuberculosis, and chronic nephritis amounted in the case of each disease to one per cent. or less. Malarial infection appeared to bear no etiologic relationship to any of these diseases, though all of them were complicated by a considerable proportion of malarial infections. The coincident occurrence of malaria with nephritis and tuberculosis is probably the result of chance, but its coexistence with acute dysentery, amebic dysentery, typhoid fever, and pneumonia, especially the first two, is chiefly due to a "lighting up" of latent malaria by the other disease.

6. Blood Flow in Hand and Pressure on Upper Arm.—Stewart confirmed, by experiments on two young men, the general, but hitherto unproved, belief that in the clinical measurement of blood pressure the pressure exerted upon the upper arm by a broad cuff and taken as the systolic pressure, is sufficient actually to obliterate completely the lumen of the artery, and not merely to block the passage of the pulse wave, as has been suggested. It was also ascertained that when the pressure in an armlet compressing the upper arm is reduced from the systolic arterial pressure the blood flow in the hand is only slightly increased for a considerable decrement of pressure. The pressure in the armlet must fall somewhat below the "diastolic" pressure, as clinically determined, before any marked increase in the flow through the hand oc-

curs. The first decrements of pressure below this "critical" pressure are accompanied by a much greater increase in the flow through the hand than further decrements. A handicap to the arm circulation of one half the diastolic pressure causes only a slight diminution in the flow through the hand. Handicapping the circulation in the arm or leg by known pressures and observing in what degree the handicap is overcome, may in certain cases constitute a useful supplementary method of clinical investigation.

7. **Microscopical Examination of Gastric Extracts and Feces.**—Smithies describes a procedure recently adopted at the Mayo clinic, intended to increase the value of the routine microscopic examinations of gastric extracts and feces which, as ordinarily made, generally return only partial or unsatisfactory findings. A two per cent. agar jelly is first made by boiling strip agar in distilled water and filtering several times while very hot. The product is sterilized and kept for convenience in test tubes, each containing five c. c. In examining a specimen of gastric extract or feces emulsion, the agar jelly is liquefied by heating, two c. c. of it poured into each of two small test tubes, and fifteen drops of filtered staining agent then added. For staining bacteria, epithelia, etc., Unna's polychrome methylene blue is used; for starch elements and vegetable fibres, Lugol's solution. Thin smears of the gastric extracts or feces are made on cover slips, dried, covered with one drop of the agar stain mixture, and mounted on slides. As the agar cools it solidifies, while the stain mixed with it permeates the smear. The agar gives so firm a mount that the specimens may be examined with high power and the stage of the microscope at any angle. The mount is sufficiently permanent to allow of future study of the specimens. By using the agar without any stain, motile microorganisms may be observed for a long time.

ARCHIVES OF PEDIATRICS.

July, 1912.

1. JOHN LOVETT MORSE: Narrowing of the Esophagus.
2. LOUIS FISCHER: Treatment of Scarlet Fever.
3. SIDNEY V. HAAS: Administration of Bichloride of Mercury to Mother.
4. ROGER H. DENNETT: Common Errors in Diet after First Year.
5. THERON W. KILMER: Administration of Anesthetics to Infants and Children.
6. JOHN SPIESS: Urethral Calculi.
7. HOWARD KENNEDY HILL: Vitiligo.
8. HENRY L. COIT: Miscellaneous.

1. **Narrowing of the Esophagus.**—Morse has seen in the last year, three cases of congenital imperforation of the esophagus. He gives the history of one of them. This baby seemed normal at birth, except for mucus in the nasopharynx. When first put to the breast he sucked and swallowed well, but after a minute or two, strangled and everything came up. This was repeated at each feeding, and with the administration of water. When seen at five days of age, he had lost much weight, the stools were entirely of meconium, and he passed little urine. No. 11 catheter was passed, ten cm. from the gums, when it stopped. It should have passed seventeen cm. An autopsy in one case showed the entire lumen of the esophagus, and it ended sharply in a blind pouch about one third of the distance down from the epiglottis. The outlook in these cases is obviously hopeless. The author then relates in detail four cases in children who were re-

spectively eleven, six, three, and five and one half years of age, who had partial obstruction of the esophagus. The first two were due to congenital narrowing, the third to cardiospasm, the fourth to hysteria. All vomited solid food immediately after swallowing, and had been fed from birth on liquids. X ray plates of the first two showed the lesions, while the plates of the last cases showed no evidence of narrowing. The histories were all very much alike.

3. **Bichloride of Mercury given to Mothers of Nurslings.**—Haas reviews the literature of the excretion of bichloride of mercury in mother's milk. He finds a disagreement among the various authors as to its presence or absence in breast milk. He therefore administered one thirty-second of a grain three times a day to the mothers of nursing syphilitic babies, and found that its effect upon the specific process was slight though positive. He then administered the same dose in more than two hundred cases of noninfected nursing mothers whose infants had vomiting, diarrhea, colic, lack of gain in weight, constipation, or skin manifestations. Between thirty and forty per cent. of these cases were benefited. No harm resulted in those cases which were not improved. Any nurslings not prospering were considered good subjects. The effect upon the noninfected mother was sometimes that of a general tonic, but in most cases no effect was observed. In a number of instances where nursing had been discontinued it was possible to reestablish the function after twelve weeks. The weight improved rapidly in many cases where weight had been stationary. Vomiting stopped within twenty-four hours. It did not seem to matter what the cause of the vomiting was, if not due to organic obstruction or overfeeding. In diarrhea the movements became less numerous, and undigested green, curdy, mucous, foul smelling stools were replaced by those of normal appearance. Constipation in a number of cases was relieved very promptly. Colic was benefited more regularly than any other symptom with the exception of gain in weight. Eczema in a few cases was improved at once. Urticaria seemed also to have been benefited. It was rarely necessary to continue the use of the drug for more than four weeks, although in a few cases it was necessary to continue treatment for months. How the beneficial effect is obtained cannot be positively stated.

JOURNAL OF EXPERIMENTAL MEDICINE.

July, 1912.

1. R. L. CECIL: Effect of Certain Experimental Procedures on Islands of Langerhans.
2. ALEXIS CARREL: Permanent Intubation of Thoracic Aorta.
3. G. RACHMANN: Physiopathological Study of Heart Block in a Dog, Result of Natural Causes.
4. A. B. WADSWORTH: Pneumococcus Infection in Animals. (First Paper.)
5. A. B. WADSWORTH: Pneumococcus Infection in Animals. (Second Paper.) Action of Immune Sera.

1. **Experiments on the Islands of Langerhans.**—Cecil reports various experiments undertaken in relation to the "island theory" of diabetes. Although this theory is held by the majority of those who have studied the subject, yet there are certain investigators who maintain that the islands of Langerhans are not independent structures, but are formed by certain changes in the arrangement and properties of the acinar cells. In the study of these islands the author made use of the following meth-

ods. 1. Inanition experiments; 2, exhaustion of the pancreas with secretin; 3, the production of phloridzin and adrenalin diabetes. He did not employ ligation or partial extirpation of the pancreas. The results of his experiments indicate that neither inanition nor the prolonged injection of secretin has any noteworthy effect upon the number, size, or structure of the islands of Langerhans in the dog pancreas. That the islands of Langerhans in the guinea pig pancreas are in no way altered in phloridzin diabetes, also that the islands of Langerhans are not formed out of exhausted or degenerated acini, but develop from the ducts or acini with which they are often in direct continuity.

2. **Permanent Intubation of the Thoracic Aorta.**—Carrel, in a previous article, showed that a segment of vein could be grafted successfully on the thoracic aorta. Although this procedure might prove to be the ideal treatment of aneurysms on peripheral arteries, the extirpation of the aneurysmal sac and the transplantation of a vascular segment upon the thoracic aorta would be complicated and dangerous. Carrel, therefore, has attempted to determine the proper technique for intubating the aorta, as this operation is simpler and may prove more satisfactory than grafting. He reports one case in which part of the anterior wall of the abdominal aorta of a dog was extirpated, and replaced by a piece of rubber covered with petrolatum. Fifteen months after the operation, the circulation was still normal. In the present series ten dogs were operated on, the thoracic aorta being opened and a glass or metal tube inserted into the lumen of the descending aorta. The results of his work show that under certain conditions aortic blood can flow through a glass tube for more than three months without the occurrence of an obliterative thrombus. If the aortic wall was lacerated, a deposit of fibrin took place, and caused a partial or complete occlusion of the tube or of the vessel. The success of the intubation, therefore, depends upon the presence or absence of laceration of the vascular wall.

3. **Case of Heart Block Occurring in a Dog.**—Bachmann reports in detail what he believes to be the first known case of heart block arising in a dog as a result of an ingenerate pathological lesion.

4. 5. **Pneumococcus Infection in Animals.**—Wadsworth goes into the subject very thoroughly and carefully reviews the general considerations. He ends his article with the statement that since the recovery of animals from pneumococcus infection differs in no essential from that of man, since the unaided protective mechanism of man, compared with that of susceptible animals, is exceptionally efficient, and since it is possible by treatment with sera from animals highly immunized with living cultures of virulent pneumococci to cure pneumococcus infection in the most susceptible animals, it is difficult to conceive of the infection in man failing to yield similarly to the administration of such sera.

MONTHLY CYCLOPEDIA AND MEDICAL BULLETIN.

June, 1912.

1. D. BRADEN KYLE: Relation of Diseases of Upper Respiratory Tract and General Systemic Conditions.
2. ALBERT BERNHEIM: Treatment of Psoriasis.
3. F. S. MASON: Mental and Physical Peculiarities of Human Ascetic.

4. MILTON K. MEYERS: Report of Case in Which Epilepsy in Adult Life Developed after Overuse of Thyroid Gland Extract.
5. J. HERMAN BRANTHE: Amputation of Thigh for Gangrene.

4. **Epilepsy and Use of Thyroid Substance.**—Meyers reports a case in which the ingestion of large doses of thyroid substance was early followed by the development of epilepsy, and which appears to corroborate the author's already expressed contention that anomalies of thyroid secretion may so act upon the nervous system as to determine epileptic attacks, either directly or by a primary action or failure of action on other toxins.

5. **Amputation of Thigh.**—Branth presents a case of successful amputation at the thigh for gangrene following frostbite, in which flushing of the wound surface during the operation with water at a temperature of 120° F. seemed to promote immediate union and obviate suppuration.

NEW YORK STATE JOURNAL OF MEDICINE.

July, 1912.

1. S. S. COHEN: Nonsurgical Treatment of Exophthalmic Goitre.
2. S. A. KNOPE: Primary Sources of Tuberculous Infection.
3. F. M. MEADER: Treatment of Typhoid Carrier.
4. A. JACOB: Arsenic and Digitalis in Pulmonary Tuberculosis.
5. LAWSON BROWN: Fresh Air.
6. H. F. L. ZIEGEL: Clinical Study of Relapses in Typhoid Fever.
7. J. M. SWAN: Treatment of Arteriosclerosis by Physiologic Methods.
8. H. H. CURTIS: Night Camp in Treatment of Tuberculosis.
9. L. P. CLARK: Pathogenesis of Eriofony.
10. C. E. PERKINS: Effect of Salvarsan on Ear.
11. R. G. REESE: Effects of Salvarsan on Eye.
12. HAROLD BARCLAY: Significance of Continuous Gastric Juice in Fasting Stomach.
13. E. C. LITUS: Modern Physical Treatment of Arterial Hypertension.
14. N. A. PASHAYAN: Toxic Deliria.
15. I. F. BLACK: Large Hematothorax.
16. F. J. BOWEN: "Dust Fever"—An Occupation Malady.

2. Primary Sources of Tuberculosis.—See JOURNAL for June 29, 1912.

6. **Relapses in Typhoid Fever.**—Ziegel has studied twenty-five relapses in twenty-one cases and comes to the following conclusions as a result of this study and a review of the literature: A relapse in typhoid fever is to be defined as a characteristic repetition and regular evolution of some of the cardinal signs of the disease after complete defervescence and a distinct apyrexial period. The relapse is a true septicemia as well as a bacterio-toxemia, as has been proved by recovery from the blood of typhoid bacilli. The underlying causes of the repetition or renewal of the characteristic lymphoid changes in the small intestine, which make up the pathological basis of the relapse, are unknown, though several hypotheses are quite plausible as explanations. Relapses are as frequent at the present time as they were prior to the observance of strict precautions in the hospital management of the disease. Relapses are not frequent after ten days of normal temperature and are rare after two weeks. There is no certain way of foretelling the occurrence of a relapse, but persistent enlargement of the spleen after defervescence is presumptive evidence, for it was present in no less than seventy-eight per cent. of the cases in which it was sought. There is nothing characteristic in the features of a relapse, save that it is usually very mild and seldom leads to a fatal outcome except as a result of the development of a complication and complications are rare in relapses. Relapses are more frequent in children than in adults.

7 and 13. **Arteriosclerosis.**—Swan concludes

that rest in bed with daily massage is capable of producing a marked reduction in the blood pressure in this disease. That it is important to reduce the total amount of food and to limit the amounts of protein and of fluid in the dietary. That measures which cause sweating also reduce the pressure. That a neutral full bath of brine or fresh water may be used in thin patients where the severer forms of treatment are not applicable. Nauheim baths should not be given. Electrical treatment by the method of autocondensation may reduce the blood pressure, but this is to be given with great care. The crown breeze, given especially at bedtime, will relieve insomnia in some cases.—Titus agrees with Swan in the use of high frequency autocondensation, and believes that when diet, drugs, and exercise have but moderate or temporary effects this will often cause a further reduction of the pressure, or, at least, will maintain the pressure at a safe point with infrequent applications. He cautions the operator to familiarize himself with the method before trying to use it; and not to attempt the reduction of overtension in cases in which it is a compensatory phenomenon.

9. **Epilepsy.**—Clark analyzes some of the newer conceptions and some of the experimental work upon which they are based, and concludes that genuine epilepsy seems to be dependent upon certain unknown complex hereditary factors which bring about a form of cortical and subcortical instability. Upon this a variety of endogenous toxins may act to cause the disease. The fit is a manifestation of a reflex action of the disease, and as such should not be seriously interfered with by sedatives *per se*. As long as there is hope of bringing the real clinical pathogenesis under control the use of sedatives is to be thoroughly discouraged.

10 and 11. **Effect of Salvarsan on Ear and Eye.**—Perkins finds no evidence that this drug exerts any deleterious effect upon the normal or slightly damaged ear, and if the disease of the ear is luetic its use is distinctly indicated.—Reese finds much the same regarding the effects of the drug upon the eye, with the single exception of simple atrophy of the optic nerve. In this condition the drug seems to make matters worse, and it is of no therapeutic value in the constitutional lesions with which this is associated. The drug is a powerful symptomatic remedy for the treatment of luetic eye lesions.

16. **"Dust Fever."**—Bowen describes under this title an affection occurring among threshers, especially when working in somewhat musty grain. In the evening, or during the night, after the day's work severe or often alarming symptoms develop. There is a well marked chill, sometimes vomiting. The face is flushed, there may be delirium, and the temperature may rise to 104°F. The mucosa of the respiratory tract is markedly congested. During the second and third days the symptoms moderate and there is a copious exudation from the nasal bronchial passages, carrying with it microscopic quantities of the offending dust.

PENNSYLVANIA MEDICAL JOURNAL

July, 1912.

1. S. D. RISLEY: Anomalies of Refraction and Their Relation to Abnormalities of Ocular Balance.
2. C. M. HARRIS: Refraction and Use of Cycloplegics.
3. J. F. KLINEDINST: Recurrent Third Nerve Paralysis.
4. J. THORINGTON: Prescribing of Glasses by Family Physician.

5. M. H. BARR: Asexualization of Unfit.
6. H. M. CHRISTIAN: Social Evil from Rational Viewpoint.
7. T. DILLER: Prophylaxis of Venereal Diseases.
8. J. W. LUTHER: Part of Report of Commission on Prophylaxis of Venereal Diseases.
9. E. MARTIN: Question of Venereal Prophylaxis.
10. J. E. WILLETT: Cataract Operations, Comparison of Technique of Knapp and Smith.
11. A. L. KOTZ: Diphtheria.
12. C. J. CUMMINGS: Need Business Qualities Interfere with Successful Practice of Medicine.
13. F. A. RUFF: Arteriosclerosis.
14. R. T. WALL: Nitrous Oxide and Oxygen Anesthesia.
15. J. M. WAINWRIGHT: Increasing Factors of Safety in Surgical Operations.

3. **Third Nerve Paralysis.**—Klinedinst reports a case of this rare affection which had returned annually in the spring, in a girl of fifteen years. The condition had been present since the age of three. It was associated with migraine on the same side of the head, and was usually preceded by constipation.

5. **Asexualization of the Unfit.**—Barr has made a personal study of 4,050 cases of imbecility, and found that 65.45 per cent. were caused by malignant heredities; of these 25.43 per cent. were due to a direct inheritance of idiocy, and 6.91 per cent. to insanity. He cites the following examples of the influence of heredity in the production of the unfit and criminal members of a community. A man of thirty-eight years is the father of nineteen defective children, all of whom are living; he and his wife are mentally below par. A man has two daughters and one illegitimate grandchild, all feeble minded. A family in seven generations numbers 138 individuals and records ten stillbirths, sixteen insane, seven imbeciles, three epileptics, and thirty-two with noticeable mental peculiarities; eighty are apparently normal, but are hopeless slaves of a neurotic heredity. Of fifteen imbecile girls, three were prostitutes, nine had one illegitimate child each (two being the result of incestuous intercourse with brothers), one had two illegitimate children, two epileptics had three and four idiotic children respectively. Four feeble minded women had forty illegitimate children. Upon these and other observations of a similar nature Barr strongly advocates the compulsory asexualization of the unfit as the only truly effective and logical remedy. He further shows that those thus treated are themselves greatly improved, both mentally and morally.

ST. PAUL MEDICAL JOURNAL

June, 1912.

1. T. W. STUMM: Septic Endocarditis.
2. WALTER R. RAMSAY: Recent Progress in Pediatrics as Related to Digestive Tract.
3. CARL J. HOLMAN: Tetanus—With Special Reference to Use of Magnesium Sulphate. July, 1912.
4. JOHN KNOTT: Asepsis, Antisepsis, and Listerism; Ancient, Medieval, Renaissance, and Modern.
5. J. S. GILFILLAN: Effects of Tobacco Smoking on Cardiovascular System.
6. F. J. SAVAGE: Treatment of Surgical Infections.
7. A. E. COMSTOCK: Etiology of Toxemia, Septicemia, Pyemia.
8. E. MENDELSSOHN JONES: Nature of Infections.
9. FRANKLIN R. WRIGHT: Complications of Seiclic Enlargement of Prostate.

1. **Septic Endocarditis.**—Stumm defines this affection as an infectious process in which the pathogenic germs are general throughout the circulation, the principal pathological changes being in the heart. Although not a rare affection, it is not infrequently first discovered at autopsy. The exciting etiological factor is always bacterial, generally streptococci, often staphylococci, less often pneumococci, and occasionally gonococci, and in every case the exciting organism can probably be found

in the blood. It is, however, not always possible at all stages of the disease to secure cultures, while at other times it is very easy. Differential diagnosis is not always easy. It has been confounded with typhoid (blood cultures differentiate it), and with tuberculosis. The condition is more frequent than has been suspected. The prognosis is grave (mortality over seventy-five per cent.); in recovered cases the heart lesions may heal and leave little or no insufficiency. Autogenous vaccines were used with little success. Cardiac therapy is not applicable, as the condition is a sepsis and not a viscus with impaired musculature.

2. **Recent Progress in Pediatrics as Related to the Digestive Tract.**—Ramsey brings out that the indigestibility of casein, as shown by curdy stool, is fallacious, as practically all so called curds appearing in the stools of a milk fed infant are not curds, but fatty soaps which disappear promptly as soon as the fat is removed from the milk. Concerning carbohydrates, it is now established that even young infants can metabolize quite large quantities of starch and none will appear in the stools. As to the salts, an excess has causative action in certain forms of infantile diarrhea, removal of the salts being followed by constipation with stools of the fatty soap type.

3. **Tetanus, with Special Reference to the Use of Magnesium Sulphate.**—Holman has employed a 12.5 per cent. solution of magnesium sulphate by lumbar puncture between the third and fourth or second and third lumbar vertebrae, with the patient in the sitting position; fifteen to twenty-five c.c. is a single dose, repeated daily or oftener if necessary. By its use he obtains complete muscular reaction and an anesthesia, which may be utilized for endoneural or other injections of tetanus antitoxine and for revising the site of the infection. Prophylactic doses of antitetanic serum should be used in all cases of injury, and used early before the tetanus bacillus multiplies. If, however, tetanus develops, the use of magnesium sulphate will probably control the convulsions, allowing the patient to be nourished, while antitoxines are being formed within the body to overcome the toxins. Other supporting measures should be used.

ARCHIVES DES SCIENCES BIOLOGIQUES, ST. PETERSBURG

No. 1, 1912.

1. A. I. YUCHTCHENKO: Content of Nucleic Acid Splitting Ferment in Various Organs in Man and Animals.
2. D. F. GRINEW: Structure and Functions of Islets of Langerhans.
3. N. N. NAVRINSKY and P. V. BEKINSKY: Proliferation in Islets.
4. V. and A. BOROVITZ: Biological Peculiarities of Cholera Organism in Epidemic of 1908-10.

2. **Islets of Langerhans.**—Grinew performed experiments in various species of animals which showed that the number of islets may undergo marked variations in the individual animals; that their size also varies, without there being any sign of nuclear divisions; that forms of tissue intermediate between the islets and ordinary pancreatic lobules occur; that there is a pronounced degree of parallelism between lesions of the islets and the lobules; and that no capsule surrounding the islets is discernible. Lobular cells were often observed to undergo progressive transformation into islet cells. From these findings and those of other investigators the author concludes that the islets are

not morphologically distinct from the lobules, but represent a part of the same epithelial tissues, occupying a distinct functional condition or even undergoing retrograde metamorphosis. If the pancreas supplies an internal secretion, both lobules and islets are responsible for it.

REVUE DE MÉDECINE.

May, 1912.

1. E. JEANSEUME and PAUL CHEVALLIER: Latent Meningeal Involvement Secondary to Syphilis (*To be continued*).
2. HENRI LAURE: Pancreatic Insufficiency. II. Special Disturbances of Nutrition in Dog Subjected to Partial Pancreatectomy.
3. A. CHAUFFARD and H. RENDU: Syndrome Caused by Acute Dehydration in Diabetic Coma.
4. F. MOUSSET and J. GATÉ: Psychic, Hysteroepileptic Disturbances in Heart Disease.
5. E. JEANSEUME and PAUL CHEVALLIER: Latent Meningeal Involvement Secondary to Syphilis (*To be continued*).
6. CESA-BIANCHI: Toxic Action of Organic Extracts and Tachyphylaxis.

June, 1912.

3. **Acute Dehydration and Diabetic Coma.**—Chauffard and Rendu point out that in certain cases of diabetic coma a condition of acute dehydration of the body tissues is responsible for some of the symptoms. Its existence is shown by the hollow facies, with sunken eyes and drawn features—Jaccoud's "peritonitic form" of diabetic coma,—sometimes associated with hiccough, vomiting, epigastric pain, and a frequent, readily compressible pulse. The skin is flaccid and inelastic. The facies differs from that of cholera merely in its roseate or cyanotic coloration. The blood pressure and the intraocular tension are low, the latter, in one of the authors' cases, being in fact reduced from 25 mm. Hg. to one mm. Examination of the blood shows increased viscosity. While doubtless in part the result of vomiting, diarrhea, and polyuria, the dehydration is believed to be due chiefly to the polypnea (Kussmaul's dyspnea), which frequently occurs in diabetic coma and is likely to cause excessive loss of water through the lungs. From the therapeutic standpoint, the advisability is suggested of avoiding the administration of hypertonic alkaline solutions, which, while counteracting acidosis chemically, tend to increase dehydration of the tissues through osmotic action. Solutions approximately isotonic, e. g. 1.5 to two per cent. sodium bicarbonate, should alone be employed.

6. **Toxicity of Organic Extracts.**—Cesa-Bianchi concludes from experimentation that watery extracts of lung tissue, of lymphatic organs, and of the chief internal secretory glands possess high toxic power, causing prompt death when injected intravenously into animals, even in small doses. Extracts of other organs and tissues have little or no toxic power. The resistance of animals to the toxic action of the extracts of the organs first named can always be artificially increased by preliminary injection of a sublethal dose, by greatly diluting the extract to be injected, or by injecting very slowly. The increased resistance to one poisonous tissue extract brought about by previous injection of it, is exerted likewise against all other extracts,—a fact which suggests that one factor or poison is common to all organs having toxic power. The nature of this poison is unknown, but it can be extracted from the tissues with normal saline solution. Attempts to neutralize the toxicity of the extracts *in vitro* have so far failed.

ARCHIV FÜR OPHTHALMOLOGIE.

LXXXII, No. 2.

1. MARTIN ZADE: Antibodies of Cornea.
2. J. IERSHEIMER: Tuberculosis as Cause of Periphlebitis R. tinalis Adolescentium.
3. W. KAPUSCINSKI: Prognosis of Keratomalacia.
4. SCHMIDT-RIMPLER: Treatment of Detachment of Retina.
5. E. V. L. BROWN: Special Form of Proliferating Chorioiditis.
6. EUGEN RUEBEL: Permeability of Iris to Light in Diastrophic Illumination of Normal and Cataractous Eyes.
7. O. PUTSCHER: Angiopathia Retinae Traumatica. Lymphorrhagia in the Fundus.
8. F. v. HERRSCHWAND: Treatment of Gonorrheal Conjunctivitis with Airoil.

1. **The Antibodies of the Cornea.**—Zade says that the normal corneas of rabbits that have not been immunized contain opsonin, but to a much less degree than the blood serum, and that it plays no important part in the subjugation of corneal infections. It experiences no change in immunization. The amount of complement in the cornea is very small. Heterogenous serum introduced into rabbits passes into the cornea more quickly after intravenous than after subcutaneous injection. The shortest time necessary for its entrance is 2.5 hours after the injection; the smallest quantity necessary corresponds in proportion to the weight of the rabbit to about the usual dose to a human being of ten c. c. Precipitins, agglutinins, hemolysins, antitoxines, and probably bacteriolysins, appear in the normal cornea of previously treated rabbits, and increase materially in number when the eye is irritated, especially when a paracentesis of the anterior chamber is made. The cornea is considerably better fitted for the transition of antibodies than the normal aqueous.

3. **Prognosis of Keratomalacia.**—Kapusinski pronounces the prognosis for life extremely bad in children in whom keratomalacia develops, breaking down of the cornea, in the course of gastrointestinal or other diseases, as it is a disease dependent on the malnutrition of the child.

4. **Detachment of the Retina.**—Schmidt-Rimpler reports the following results in twenty cases of spontaneous detachment of the retina, in which other treatment had proved of no avail, obtained from aspiration of the subretinal fluid and injection into the vitreous. One proved to be a case of sarcoma of the chorioid. Of the remaining nineteen patients, who were under subsequent observation for at least a year, eight were treated with injection of the subretinal fluid, five with injection of a mixture of subretinal fluid and an eight per cent. solution of salt, and six with injection of an eight per cent. solution of salt into the vitreous. In eight cases, four of the first, three of the second, and one of the third group, a material and permanent improvement followed with reattachment of the retina, enlargement of the field, and betterment of vision, in four cases there was a slight improvement, in three no improvement, and in four the condition was made worse. In six cases the operation was followed by a more or less severe inflammatory reaction, but yet the improvement was marked in five of them.

JOURNAL D'UROLOGIE.

April, 1912.

1. HERESCO and CEALIC: Treatment of Articular Complications of Gonorrhea by Injection of Antimeningococcus Serum.
2. LECÈNE and HOVELACQUE: Cancer Developed in Extrophy of Bladder.
3. ROTZEL: Pathology and Surgery of Horseshoe Kidney.
4. DESNOS: Foreign Body from Appendix Simulating Vesical Calculus.
5. MARION: Reconstruction of Ureter by Circular Ureterostomy.

1. **Gonorrheal Arthritis.**—Heresco and Cealic report four cases in which the antimeningococcus serum was used. The first was an acute arthritis of the knees following gonorrhea. There was complete loss of function. Fourteen days after the first injection of serum the patient left the hospital cured. The second case was of acute multiple joint affections, both knees, left shoulder, metacarpophalangeal, etc. Twenty-eight days after the first injection the patient was well. Two other cases are similar. The authors suggest that the injection should be subcutaneous and in the region of the affected joint. They used serum from the Pasteur institute, and also that prepared by Flexner and Wassermann. The quantity injected daily was between fifty and sixty c. c. The nearer the beginning of the joint affection the more efficacious the result.

2. **Cancer in Extrophied Bladder.**—Lecène and Hovelacque report two cases in which a cancer developed in an extrophied bladder. In the first case the patient died and autopsy showed adenocarcinoma of the bladder with visceral metastases. The second patient had epithelioma of the extrophied bladder and also died; no metastasis was found. The authors report eight other cases from the literature. They make one point of value, i. e., the new growth appears to be limited to the extrophied portion of the vesical mucosa. The knowledge of this simplifies operation, as the ureteral orifices are not involved.

4. **Foreign Body Simulating Vesical Calculus.**—Desnos reports a case of enterolith, discharged from the appendix into the bladder and mistaken for stone, and cites two similar cases. His patient, a boy nine years of age, had suffered severe attacks of pain in the right side of the abdomen, accompanied by fever. Some months later urination became painful and the urine purulent. The cystoscope revealed an inflamed and ulcerated bladder and a phosphatic stone as large as a hazel nut. Litholapaxy was successfully performed and showed the stone to be a mass of fecal material incrustated with phosphates.

5. **Constructing a Ureter.**—Marion describes a plastic operation which he has found useful in the treatment of ruptured urethra, traumatic, or rebellious stricture, and stricture complicated by fistula. He makes a median perineal incision, denudes the bulbous urethra, resects first the fistula, then the strictured portion of the urethra, dividing this completely; then he liberates the anterior segment for some distance, pulls this down by means of tension sutures inserted at a distance from its extremity; sutures the cut edges together, and drains by a catheter inserted deeper along the urethra or through a suprapubic opening. He reports forty-two successful cases.

ZEITSCHRIFT FÜR UROLOGIE

Vol. VI, No. 2.

1. E. WOLFF: Morphology and Topography of Kidney.
2. D. GIORDANO: Anuria in Solitary Kidney.
3. B. LOTZY: Remote Complications of Prostatectomy; Psychic Disturbances Preoperative and Postoperative.
4. P. D. SOLOMON: Incised Wounds of Kidney.
5. J. SELLER: Prostatocytotoxins.

2. **Anuria in Solitary Kidney.**—Giordano reports the case of a patient who had complete anuria for six days. The author had done a double nephrotomy some years earlier and because

of hemorrhage had sacrificed the left kidney. The patient remained well for seven years. Following typhoid the urine became cloudy, urination frequent and painful, and there was pain over the remaining kidney. A small calculus was passed, but the pain and cloudy urine continued, and anuria, which resisted all treatment, began. A nephrotomy under local anesthesia was done. On the following day the dressings were saturated with urine. Eight days later 600 c.c. of urine were voided. Six weeks after operation the patient was nearly well. Urine, 1,200 to 1,600 c.c., but slightly cloudy, a trace of albumin, eleven grammes to the litre of urea.

4. Two Cases of Incised Wounds of Kidney.

—Solomon's first case was of a patient who received a stab wound, four to five cm. long in the lumbar region. He was seen one hour after the accident and gave evidence of shock. On operation the kidney was found to be divided completely in halves and the ureter and renal vessels were separated from the kidney. Nephrectomy was necessary and healing followed. In the second case the patient was seen two hours after the accident. In this case the stab wound was two to three cm. long. There was a wound in the kidney, nine to ten cm. long, which was sutured and the patient recovered. The author makes the point that the kidney wound is often out of proportion to the cutaneous wound.

INDIAN MEDICAL GAZETTE

June, 1912.

1. O. ST. JOHN MOSES: Review of Year's Medicolegal Work in Calcutta, *Morgue*, 1911.
2. F. POWELL CONNOR: Intracapsular Operation for Cataract (Smith's Method) from Point of View of Civil Surgeon.
3. J. HAY BURGESS: Ten Months' Work in Military Employ.
4. OWEN BERKELEY HILL: Psychoanalytical Treatment of Neuroses.
5. F. F. SIBTHORP SMITH: Cecum and Appendix in Left Iguinal Hernia.

Proceedings of Societies.

AMERICAN GYNECOLOGICAL SOCIETY.

Thirty-seventh Annual Meeting, Held at Baltimore, Maryland, May 28, 29, and 30, 1912.

The President, Dr. HOWARD A. KELLY, of Baltimore, in the Chair.

(Continued from page 301.)

Dr. HENRY T. BYFORD, of Chicago, stated that the very fact that local treatment did not help would indicate it was medical treatment that was needed. He had had cases that he had treated medically which came from faulty conditions of the urine, but he was not able to help the patients materially in a week or two weeks, but by keeping track of them for six months he had cured them. There was something in the patient's habits and in their method of eating which occasionally caused a variation in the urine which the practitioner did not always correct. There might be hyperacidity crystals, the result of faulty metabolism. Persistent medical treatment was sometimes neglected by gynecologists, as well as by other practitioners who devoted their attention to surgical diseases.

Dr. HOWARD A. KELLY, of Baltimore, said that some of these patients had been the distress of his life, so far as treatment was concerned, while others were gratifying to treat for the reason that they got

well so promptly. As a rule, very little pus was found in the urine or none at all, and he had never found organisms. If he found organisms in the urine, he examined the kidneys. In those cases Doctor Garceau has been speaking of, the irritation might start inside and leave a real trigonitis due to irritability of the trigonum or a hyperemia. He did not find fissures in this group of cases. He had seen polyi in this group. Sometimes the hyperemia was intense. He recalled one case in which absolutely nothing could be seen. He had relieved the patient somewhat, and this was the reason she came back, but he was not able to cure her. He found in a number of cases hyperacidity, and when this was corrected, occasionally the patient got marked relief. After all, the sheet anchor was silver nitrate. Sometimes he tried good, strong treatment first, then followed it with milder ones, using a five per cent. solution at intervals of three to five days or a week.

Dr. GEORGE H. NOBLE, of Atlanta, described a simple method of shortening the uterosacral ligaments. To prevent retroversion the body of the uterus was held forward by shortening the round ligaments. For this purpose he preferred an extra-peritoneal operation, imbedding the ligaments between the layers of the aponeurosis anterior to the recti muscles.

Use of the Continuous Fixed Laparotomy Sponge.—Dr. W. FRANCIS B. WAKEFIELD, of San Francisco, stated that as the matter of sponges was usually handled in the average operating room, it was quite remarkable that loose sponges were not closed up in the abdominal cavity oftener than they were. A sufficient number of surgeons throughout the country had used the continuous laparotomy sponge a sufficient length of time to prove conclusively that abdominal operations could be efficiently performed without the use of the dangerous loose sponge. This being so, it followed logically that as time went on, and the knowledge of this fact became more widespread, surgeons would find it increasingly difficult to obtain, in courts of law, extenuation for having left a sponge in the abdominal cavity.

Dr. GEORGE GRAY WARD, of New York, said that for the past five years he had abandoned the use of separate sponges and had been using a continuous sponge in the form of a roller bandage, about three yards long and six inches wide, folded in four or five thicknesses of gauze. In his service no loose sponges were used in the abdomen. This roller bandage was unrolled as it was required, and the ends of it were tucked underneath the flanks, held back by the intestines, and clamped to the laparotomy sheet.

Dr. I. S. STONE, of Washington, stated that there were quite a number of cases on record where foreign bodies had been left in the abdominal cavity after operation, and why it was not proper for an individual, who trusted the surgeon to operate upon him or her, to grant the surgeon *carte blanche* to do what was best and the patient accept the responsibility. It was about time for surgeons to take a stand with regard to operating upon free patients and doing free work in hospitals, and then possibly be sued for twenty or fifty thousand dol-

lars, if they were worth that much, as a result. The profession had done very little to protect itself against suits of this character. It seemed to him that surgeons were at the mercy of the public, especially of that class anxious to make the surgeon pay who had a good income.

Dr. JOHN F. THOMSON, of Portland, Maine, said the essential thing was the counting of whatever was used in the form of sponges. This was applied at his private hospital in Portland to everything practically which possibly went through the abdominal incision in the operating room, the sponges being counted by two nurses, both before and after operation. Sponges might by accident be left, and he insisted on the count being essential.

Dr. J. WESLEY BOVEE, of Washington, said the plan he followed was to have a tape attached to each sponge that went into the abdominal cavity. If one used five or six sponges in the abdomen with a tape on each, he knew how many were put in and he knew when they came out. He would rather trust his own count than be responsible for the count of one or two nurses.

Dr. BROOKS H. WELLS, of New York, stated that even the tape might go astray. In the only case he recalled in which a sponge was left inside the abdomen, the sponges were carefully counted before and after operation by a nurse, and they were all supposed to have tapes sewed on them, with a weight on the end of the tapes. The patient, however, made a very good convalescence, but about eight or ten days thereafter she was brought into the clinic room and a sponge was removed from the cul-de-sac.

Dr. GEORGE H. NOBLE, of Atlanta, said that sometimes in appendicitis cases he used a long strip of gauze, but when it came to the sponges he used one at a time, taking it out as soon as used. There was a string attached to the sponge. This was the safest plan to follow in using sponges in the abdominal cavity.

Dr. BENJAMIN R. SCHENCK, of Detroit, stated that the method they had followed at the Harper Hospital was to use large abdominal towels, using no sponges at all in abdominal operations. Some operators used gauze strips that were introduced into the abdomen, and these were numbered from one to eight, and the nurse must find every number.

Dr. CHARLES E. THOMSON, of Scranton, mentioned a case in which, according to the records, no sponge had been used. There was no occasion to use one, as it was a simple exploration, and yet a sponge was found later in the abdomen.

Dr. FRANK T. ANDREWS, of Chicago, said he used small sponges which were carefully counted and labeled with red marks. Sometimes he used a six foot strip with a nickel ring attached to the end of a two foot tape.

Dr. BROOKE M. ANSPACH, of Philadelphia, had followed Dr. Clark's custom in the University hospital, that is, to do all isolating by means of gauze taken from a long roll, using two or three thicknesses. The roll was probably four or five feet long, so that there was only one piece used to pack off the intestines and isolate the operative area. Twelve sponges were used for exposed bleeding points, and these were carefully counted, but as soon as the bleeding ceased they were removed.

Gymnastic and Other Mechanical Means in the Treatment of Visceral Prolapse and Its Complications.—Dr. FRANKLIN H. MARTIN, of Chicago, said that the treatment was based on the systematic reversal of the processes which caused or aggravated ptosis, including: (a) The placing of the patient regularly and at short intervals, in the Trendelenburg position; (b) systematic active or passive exercise, of the muscles of the abdomen, back, and chest, which were at fault as a result of ptosis, while the patient occupied the Trendelenburg position; (c) prescribing and adjusting properly designed temporary abdominal supports or corsets while the patient was in the vertical position; (d) proper instruction to the patient as to how to overcome the vicious habit of incorrect body attitudes often found in this condition, including exercise in the open air, diet, etc.

Dr. W. FRANCIS B. WAKEFIELD, of San Francisco, said he had been using a course of treatment for the last few years almost identical with that described by the essayist, and the results had been extremely satisfactory. Surgeons were shortsighted if they allowed some of these women, who advertised physical culture treatment in the popular lay journals, to treat this class of cases. One could take an intelligent nurse and train her to understand the principles of the application of such treatment and to make use of it intelligently, and it was better to take the necessary pains to do this and take these cases out of the hands of those outside of the profession and resort to a means of cure that would be very useful in the profession.

Dr. CHARLES P. NOBLE, of Philadelphia, said that these enteroptotic patients were partly dead when they were going around. Their vitality was low. The treatment recommended by Doctor Martin gave them exercise and enabled them to eat more, and therefore more energy developed and they were better. What they needed was rest. They should be fed abundant and wholesome food.

Dr. CLEMENT CLEVELAND, of New York, said the posture the essayist spoke about was not the Trendelenburg, but merely an inclined posture with the head downward. The Trendelenburg posture required relaxation, not only of the abdominal muscles, but of the psoas muscles. In order to get this it was necessary to flex the thighs upon the pelvis with easy lifting, and the only table which did this was named after the speaker, having been in existence for years.

Dr. RICHARD R. SMITH, of Grand Rapids, Michigan, said that when these women came to the gynecologist they came, in a great majority of cases, in a state of fatigue. A woman who was enteroptotic, but in a state of equilibrium, who was leading a life within her strength, did not suffer at all, but went about and did her work, and took her part in society with other women. She had a certain amount of vitality, but she gave out more easily. Then she consulted a gynecologist. The keynote was that she needed rest, both physical and mental. She needed to improve her nutrition, which meant better food, fresh air, or whatever other means might be employed.

Dr. WILLIAM S. STONE, of New York, said there were two specific details that had given him great satisfaction in connection with the treatment of

these cases. He had found walking was one of the best forms of exercise. If the principles were carried out, it meant exercise and rest. A specific way of doing this was to tell the patient to take a walk, and walk a little farther than they wanted to, and they should take the walk at such time so that when they reached home, without doing any physical or mental work, they were to lie down on the bed or sofa for the same length of time that was consumed in taking the walk. They should be trained to carry out regular exercises, which should be immediately followed, after they got home, by rest. In addition, he relied in helping the circulation upon a good, brisk, careful rub.

Doctor MARTIN, in closing, said the treatment he had outlined was developed in connection with the treatment of surgical cases, in the treatment of kinks of the ileum, in the transverse colon, and in conditions that were operated for by Lane and for which he gained a considerable reputation. The treatment would relieve the Lane kink that was produced by ptosis. There was no question about this.

Torsion of Tubal Enlargements with Reference Especially to Pyosalpinx.—Dr. BROOKE M. ANSPACH, of Philadelphia, reported the case of a woman, twenty-six years of age, who entered the hospital with the clinical symptoms of acute appendicitis. Operation revealed torsion of the right tube and ovary. The tube was distended and filled with pus. The ovary was closely applied to the tube. The mass was purplish black in color, and almost entirely free of adhesions. Tuberculosis was suspected as the underlying cause of the pyosalpinx, but the histological examination did not confirm the opinion. Two years later the patient returned for another operation, and the left tube was found to be tuberculous. It was considerably enlarged and evidently represented the condition of the right tube before torsion had occurred. Histological examination showed typical miliary tubercles.

The author then took up the subject of torsion of tubal enlargement in general, and analyzed ninety-five cases which he collected from the literature. The variety of tuberculous enlargement which most frequently underwent torsion was a hydrosalpinx. Ectopic pregnancy and cysts originating in the tube itself, and malignant tumors were other causes. There were twelve cases of twisted pyosalpinx reported in the literature. A considerable portion of these were proved to be tuberculous, and it was likely that tuberculosis was the cause of at least half of the reported cases.

Dr. FRANKLIN H. MARTIN, of Chicago, said that within the past two years he had written and published an article on congenital pelvic defects, the principal defect being the vertical pelvis, and the other defect being the loose mesentery. In this paper he dwelt particularly upon the proneness to displacement of the appendages and of the uterus in these particular cases. As was known, there were two reasons why this should occur. In the normal, fully developed individual the broad ligament blended forward of the middle line of the pelvis, so that the uterus and the appendages naturally were drawn forward of the middle line, and hence naturally fell anteriorly rather than posteriorly in case their mesenteries were blended in front

of the middle line. In the normal individual the pelvis was rotated to nearly a right angle to the vertical pelvis, and beside that the broad ligaments were blended well forward so that the uterus was drawn in that direction and also its appendages. In the well developed woman the mesosalpinx was extremely short. One could not get torsion in the normally developed woman. It was in those that were defective that we had the unblending of the mesenteries in which the ureter stood out, as in the dog, and in lower animals we were liable to get this condition of displacement of the appendages and torsion.

(To be continued.)

Letters to the Editor.

CRUELTY TO THE TUBERCULOUS POOR.

NEW YORK, July 29, 1912.

To the Editor:

In an editorial article in the last issue of your valuable JOURNAL, under the heading of Cruelty to Indigent Consumptives you speak against sending indigent patients with advanced pulmonary tuberculosis on a long and costly journey to the Southwest. There is no doubt that you are correct and that every right minded physician must subscribe to your views. This question of cruelty to consumptives brings up another point that is of great importance, hence these lines of protest. Almost all our sanatoria refuse to accept advanced cases of tuberculosis, although this accords neither with the teachings of medicine, nor with those of humane principles. We receive into our sanatoria incipient and dubious cases—indeed too many of the latter class. In other words, we give all the benefits of a modern equipped hospital to such who are not in dire need of same, while we refuse admission to those poor, helpless creatures that require our help most. Do we refuse a patient with typhoid fever or pneumonia with a bad prognosis? Why should we apply such a rule to our tuberculous sufferers?

Woe to the patient if there should be a little laryngeal complication! The writer has quite some years of experience in that direction and he has found it always a hard task to get these poor sufferers into a sanatorium. One reason is that most colleagues do not consider that the larynx is more amenable to treatment than the lungs. Another is that not infrequently the staff does not care nor understand how to treat laryngeal tuberculosis.

Read those glowing reports of cures effected in the sanatoria! I hate those statistics, as they are a lie against our better knowledge. An enormous proportion of incipient cases—not to mention the dubious ones—get better without any treatment or with the help of good food and rest. It has not been proved satisfactorily that this percentage has been increased materially by the present mode of sanatorium treatment. There is nothing more discouraging to a physician than to treat exclusively a lot of dying consumptives, but there is a wide range between those and incipient cases. Admit consumptives of every stage to public and private sanatoria, and there will be more glory in curing a dozen advanced cases than a hundred incipient or dubious

ones. Besides, it will be more in accord with medical traditions and humane principles.

WOLFF FREUDENTHAL, M. D.

"AUTOTHERAPY."

NEW YORK, August 6, 1912.

To the Editor:

I wish to congratulate Doctor Browning and Doctor Lintz upon the originality of their method of curing diseases, and especially upon the name they so happily have used to designate it. It seems to me, however, that there is something extremely familiar about the method, and especially the name "autotherapy." This name I coined to designate the therapy employed by me for the last four years. It may be, and I am sufficiently charitable to assume in the absence of any definite information to the contrary, that Doctor Browning and Doctor Lintz are not familiar with the method of therapy I am developing. I respectfully call their attention to my articles in the *Lancet Clinic* for November 4, 1911, and in the *Medical Record* for March 30, 1912.

CHARLES H. DUNCAN, M. D.

New Inventions.

AN IMPROVED BREATHING TUBE.

BY RAYMOND C. COBURN, M. A., M. D.

New York.

One of the most important principles to be observed in the administration of all anesthetics is the constant maintenance of free and unobstructed respiration. By far the largest proportion of difficulties which the anesthetist encounters are of respiratory origin or effect, and, after anesthesia is secured, the chief source of respiratory obstruction lies externally to the glottis, unless the anesthesia becomes too light.

Having thus located the chief source of respiratory embarrassment after the induction stage, it is a very easy matter to furnish a free breathing space by means that are readily available, whether the

tion which the tube must assume, I use a specially designed and moulded tube, shown in the illustration. The curve facilitates its introduction and keeps it patulous. The metal fitting at the outer end prevents the tube not only from becoming displaced, but also from being closed by the teeth in contraction of the muscles of the jaw. Being specially moulded there are no sharp edges to injure the tissues of the throat when it is inserted.

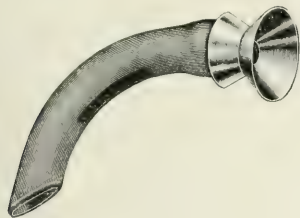
Nitrous oxide causes more swelling of the tongue and of the other tissues of the upper respiratory tract than do other anesthetics, consequently when this agent is used there is more than an ordinary amount of respiratory obstruction of the character mentioned. Besides, in the administration of nitrous oxide, one hand is used to hold the mask tightly against the patient's face, while the other is needed to supply the requisite gases, to take the pulse, and to attend to the other matters incident to the administration, consequently there is little opportunity for the anesthetist to hold the jaw forward. This tube can be inserted and the face mask reapplied so quickly that the patient makes no recovery, even from this evanescent anesthetic.

The novice in the administration of nitrous oxide usually increases the amount of oxygen, and thereby maintains a proper oxygenation of the blood, even in the face of a partial respiratory obstruction, not recognizing that the increased demand for oxygen is due to a restricted respiration, and not to the normal amount of cyanosis that accompanies the proper administration of this agent. For the sake of safety it is absolutely essential that the respiratory movement be free and unobstructed at all times. The extra amount of strain and work thrown upon the heart in partial respiratory obstruction is greatly underestimated.

While the breathing tube herein described and illustrated was designed primarily for use in conjunction with the administration of nitrous oxide, it is very useful in the administration of ether. When it is used it is surprising how smooth and quiet the respiratory movement becomes, equalling in this respect that which accompanies the insufflation method of administration.

After mature reflection the writer prefers to call the method of administration described in the *NEW YORK MEDICAL JOURNAL* for June 8, 1912, the "insufflation" method instead of the Politzer vaporizing method, inasmuch as the word insufflation is completely descriptive, and at the same time much more accurate and definite than "vapor" method—the name previously employed.

HOTEL BRETTON HALL, EIGHTY-SIXTH STREET, BROADWAY.



Coburn Breathing Tube.

cause be collapsed *alae nasi*, adenoids, valvelike lips, recedent jaw, enlarged tonsils, swollen tongue, and other turgescient tissues. A half inch rubber tube, about five inches in length, with a large safety pin through the outer end to prevent its slipping beyond control, is passed over the base of the tongue, and through this comparatively large tube, the respiratory movement is freely and normally maintained. On account of the large size of the tube necessary to eliminate all restriction to free respiratory movement, and on account of the curved posi-

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

A Manual of Surgical Treatment. By Sir W. WATSON CHEYNE, Bart., C.B., D.Sc., LL.D., F.R.C.S., F.R.S., Honorary Surgeon in Ordinary to His Majesty the King, Senior Surgeon to King's College Hospital, and F. F. BURCHARD, M.S., F.R.C.S., Surgeon to King's College Hospital, and Senior Surgeon to the Children's Hospital. New Edition. Entire Revised and Largely Rewritten with the Assistance of T. P. LEGG, M.S., F.R.C.S., Surgeon to the Royal Free Hospital, Assistant Surgeon

to King's College Hospital, etc., and ARTHUR EDMUNDS, M.S., F.R.C.S., Surgeon to the Great Northern Central Hospital, etc. In Five Volumes. Volume I. The Treatment of General Surgical Diseases, Including Inflammation, Suppuration, Ulceration, Gangrene, Wounds and Their Complications, Infective Diseases, Tumors, and Deformities. With an Appendix upon the Administration of Anesthetics by Doctor Silk, and the Examination of the Blood, by Dr. W. D'Este Emery. Volume II. The Treatment of Surgical Affections of the Skin and Subcutaneous Tissues, the Nails, the Lymphatic Glands and Vessels, the Muscles, the Tendons and Tendon Sheaths, the Nerves, the Veins, the Arteries, and the Bones; Amputations. Philadelphia and New York: Lea & Febiger, 1912.

Twelve years have gone by since the appearance of the first edition of this work. These years have seen the introduction of many new methods of surgical treatment, and much that is obsolete has been discarded. It is not strange then that a book on surgical treatment twelve years old, should require practically to be rewritten. This the authors of this well known work have done and the result (as shown by the first two volumes) is a thoroughly up to date treatise on the subject. It is an extremely valuable addition to our modern surgical works, and will be received with eagerness, particularly by the general surgeon, the general medical practitioner who occasionally practises surgery, and the teacher of surgery in the classroom. Like the best surgical treatises, notably of German authors, which have preceded it, this book is divided into two main parts, general and special. The former is contained in volume one, the latter in volumes two, three, four, and five. This arrangement is particularly happy, as each volume takes up a certain topic or region.

The first volume is devoted entirely to the subject of general surgical diseases with special reference to their treatment. The essential facts in pathology are given in concise form and the symptoms are reviewed in a few words. The treatment is gone into in detail, and the results of the author's own experience are incorporated for the benefit of the reader who may be entirely unfamiliar with the topic under discussion. A complete summary of the various methods of treatment is not attempted, but rather it has been the aim of the authors to make very clear that method of treatment which has served them the best. The text is a model of good English and it is most clear and concise. The illustrations are not numerous, but are very well chosen and executed. The convenient size of the volumes will commend itself to the reader. Throughout one is impressed that the book is written by practising surgeons who have wished to give only what is essential for a physician undertaking surgery to know.

The second volume of this important work is devoted chiefly to the surgical affections of the skin and subcutaneous tissues, lymphatic vessels, and glands, tendons, nerves, bloodvessels and bones, including amputations. The chapters on suture of divided tendons and nerves, suture of bloodvessels, and treatment of aneurysms are particularly full and well illustrated. In the subject of fractures, there are some methods of treatment to which exception can be taken. A lengthy description, for example, is given of wiring the patella by means of a drill and silver wire. In the light of the much simpler and safer technique, now generally employed in this country, of suture with an absorbable material, of the divided capsule and aponeurosis without drilling the bone, it seems strange to find discussed in a modern textbook such an antiquated method. The whole subject of fractures is not as satisfactorily treated as the other subjects. The illustrations are in many cases old fashioned in appearance and the retention apparatus shown appear clumsy and out of date. This does not apply to the fixation method of treatment by means of Lane's plates. This is given in detail and the illustrations are good. The section on diseases of the bones is excellent. The description of acute osteomyelitis and necrosis is very clear and makes this difficult subject easy for the student to grasp. The last ten chapters of the volume are devoted to amputations and disarticulations. These are described in systematic manner, and emphasis is laid upon the best method of procedure. The volume maintains the claim of the authors that the work is essentially practical, and furnishes a practitioner with the necessary details to treat

a case intelligently for the first time. This is true of the treatment from the commencement to the termination of the illness.

Surgery of Deformities of the Face, Including Cleft Palate. By JOHN B. ROBERTS, A.M., M.D., Professor of Surgery in the Philadelphia Polyclinic, Surgeon to the Methodist Hospital, etc. Illustrated with 273 Figures. New York: William Wood & Co., 1612 1st p. vii-273 (Price, \$3.)

In this publication the author has assembled material which has hitherto been widely scattered and difficult of access. It will serve a useful purpose with those who are called on to treat surgically the various skin diseases, as well as deformities of this region, either congenital or traumatic in origin. Many suggestions and procedures derived from the author's own work will be found of value.

The book opens with an interesting review of the development of plastic surgery, followed by a brief survey of the anatomy of the face, the characteristics of facial surgery, and the principles of plastic surgery of the face. The author then takes up in succession for detailed description, gunpowder and local discolorations and tattooing, fistulas, fissures, encephalocele, atrophy, and hypertrophy, the surgery of skin diseases, various special deformities of the several parts of the face. The section on rhinoplasty may be particularly mentioned.

Altogether the work will be a valuable addition to the library of the operating surgeon. The illustrations are clear and the press work is admirable.

The Mechanical Factors of Digestion. By WALTER B. CANNON, A.M., M.D., George Higginson Professor of Physiology, Harvard University. Illustrated. London: Edward Arnold; New York: Longmans, Green, & Co., 1911. Pp. xi-227. (Price, \$3.)

The present volume is the first of a series of monographs on physiological subjects. The idea of this series is undoubtedly good; the physician will be able to keep up to date his knowledge on any part of the physiology of the human body in which he is particularly interested, without being at the same time compelled to buy complete and expensive textbooks at frequent intervals. This plan is not new, for a few years ago another publishing house started the same method, and strangely the first volume in that series also dealt with the digestive tract; but we are not aware that the idea was kept up, for we saw only the one volume. It is to be hoped that the present venture will have a better fate, and that the subsequent volumes will be up to the standard set by Cannon's book. For several years all the best textbooks on physiology have made use of Cannon's classical experiments on the movements of the stomach; and the editors of this series have done well in issuing this volume as the first of this new series. It is handy and convenient in size, well printed, and (above all) it is authoritative.

Clinical Disorders of the Heart Beat. A Handbook for Practitioners and Students. By THOMAS LEWIS, M.D., D.Sc., M.R.C.P., Lecturer in Cardiac Pathology, University College Hospital Medical School; Physician to Out Patients, City of London Hospital for Diseases of the Chest. With 48 illustrations. London: Shaw & Sons, 1912. Pp. xii-104.

In this little work are presented those of the recently learned facts in cardiac physiology and pathology that are likely to be of interest and service to the practitioner. The author has not included the evidence upon which the newer methods of exact cardiac diagnosis are founded, but has limited the discussion to the clinical aspect of the subject.

In the first chapter, the various disturbances of the cardiac rhythm, as now recognized, are enumerated and defined. They are six in number, viz., sinus arrhythmia, heart block, premature contractions, paroxysmal tachycardia, auricular fibrillation, and alteration of the pulse. Each of these is taken up in turn and discussed at length in the succeeding chapters. The nature, etiological and pathological relations, recognition, symptomatology, prognosis, and treatment of each disturbance is described in clear and concise terms. The sections on heart block and auricular fibrillation are particularly illuminating. The importance of the latter phenomenon, which occurs at some time in sixty to seventy per cent of all cases terminating in cardiac failure, is duly emphasized.

No direct reference is made in this book to complicated instruments, such as the polygraph, the aim of the author being to furnish a system of diagnosis of the disorders described which requires no apparatus more elaborate than a Dudgeon sphygmograph. The work is freely illustrated with diagrams and tracings. It is well calculated to serve as an introduction to the "newer cardiac pathology."

Miscellany.

Our Glass House Is Damaged.—To the proposed sending by Congress to Cuba of a committee to investigate the sanitary condition of that island. Dr. Juan Guiteras, its director of sanitation, replies with statements which are the more unpleasant for us to hear, remarks the *New York Times* for August 8th, because we cannot question either his competency or their accuracy. Our investigators, he says, could find more and better causes for criticism in the United States than in Cuba, since here the policy, at once imbecile and criminal, of concealing the plague was long followed and with reluctance abandoned, while there no concealment of the few imported cases was attempted and the infection did not spread at all. For this cruel blow to our pride we must blame the health authorities of California and San Francisco. For fear of "hurting business" they disgraced us all and brought upon us all no small amount of peril in addition to giving the Cuban sanitarian the text for his sermon. It is at least with colorable excuse that he declares Cuba endangered by the United States, not the United States by Cuba, and, while there may be something of exaggeration in that assertion, disproof of its essential truth would be difficult.

The trouble is that we know much more about the prevention of epidemic diseases than we practise, while petty jealousies and local interests still deprive us of the coordinated, systematized, and nationwide guardianship of the public health that even little Cuba now enjoys. We let our charlatans and the dupes of faith cure swindlers successfully oppose the establishment with proper authority of a Federal bureau or department to manage our quarantines and guard our lives. It's no wonder that the islanders to whom not so long ago we taught the most valuable lesson ever given in preventive medicine now tell us to learn it ourselves before assuming again the rôles of critic and instructor. We humiliated as well as benefited these Latin neighbors of ours, and now they are taking their revenge. To do that is not quite nice of them, but it is very human-natural.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, yellow fever, plague, and smallpox were reported to the surgeon general of the United States Public Health and Marine Hospital Service during the week ending August 9, 1912:

CHOLERA—FOREIGN: Dutch East Indies, June 27-July 1, present; Indo June 10-20, 23 cases, 12 deaths; Indo China, June 18-24, 26 cases, 67 deaths; Japan (Formosa), June 10-20, 31 cases, 11 deaths; Siam (Bangkok), May 10-June 15, 281 deaths; Straits Settlements, June 9-15, 3 cases, 2 deaths; Turkey (Aleppo), May 11-July 14, 263 cases, 231 deaths.

YELLOW FEVER—Brazil (Manaos), June 30-July 6, 3 deaths; Peru (Quitos), May 1-11, 3 deaths.

PLAGUE—INSULAR: Porto Rico, July 30-August 20, 2 cases.

PLAGUE—FOREIGN: Arabia, June 1-22, 1 case; Brazil (Rio de Janeiro), June 23-29, 1 case; China, present; Great Britain (Liverpool), July 20, 1 case; India (Bombay), June 23-29, 23 cases, 23 deaths; Indo China, June 18-24, 1 case, 1 death; Japan (Formosa), June 10-20, 14 cases, 12 deaths; Persia, June 1-15, 23 cases, 16 deaths; Straits Settlements, June 9-15, 1 case, 1 death; Turkey (Adalia), present.

SMALLPOX—UNITED STATES: California, June 1-30, 111 cases; New York, June 1-30, 23 cases; South Dakota, June 1-30, 27 cases.

SMALLPOX—FOREIGN: Australia (Townsville), May 24, 1 case; Austria-Hungary, May 10-July 6, 20 cases; Brazil (Rio de Janeiro), May 20-July 22, 8 cases, 4 deaths; Canada, July 21-27, 4 cases; China, present; France (Nantes), July 1-6, 3 cases; Germany, July 7-13, 4 cases; Hawaii (Honolulu), July 9-13, 1 case; Honduras (interior), July 19, present; India, June 23-29, 18 cases, 16 deaths; Indo China, June 1-17, 20 cases; Mexico, July 8-20, 70 cases, 18 deaths; Portugal (Lisbon), July 7-13, 3 cases; Russia, June 1-July 6, 2 cases, 0 deaths; Siam, May 10-July 15, 21 cases; Spain, June 1-July 13, 0 cases, 3 deaths; Straits Settlements, June 9-15, 1 death; Turkey (Istanbul), July 7-13, 10 cases.

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending August 7, 1912:

Bell, J. M., Pharmacist. Granted two days' leave of absence from July 27, 1912, under paragraph 210, Service Regulations. **Branham, H. M.**, Acting Assistant Surgeon. Leave of absence, without pay, for five days from June 3, 1912, revoked. **Chapin, C. W.**, Passed Assistant Surgeon. Relieved from temporary duty at the Hygienic Laboratory and directed to proceed to San Juan, P. R., and report to Passed Assistant Surgeon R. H. Creel for special temporary duty in plague suppressive measures. **Cofer, L. E.**, Assistant Surgeon General. Directed to proceed to Boston, Mass., and make an inspection of the medical examining of arriving aliens and for conference with the local authorities relative to maritime quarantine. **Creel, R. H.**, Passed Assistant Surgeon. Leave of absence granted under paragraph 191, Service Regulations, for four days in May, amended to read "two days' leave, May 17 and 18, 1912." **Duke, B. F.**, Acting Assistant Surgeon. Granted eight days' extension of annual leave on account of sickness, from July 17, 1912. **Earl, F. D.**, Acting Assistant Surgeon. Granted ten days' leave of absence, without pay, from July 28, 1912. **Ebert, H. G.**, Passed Assistant Surgeon. Granted twenty days' leave of absence from August 14, 1912. **Francis, E.**, Passed Assistant Surgeon. Directed to proceed to New Orleans, La., and report to Surgeon J. H. White for cooperation with the State and local health authorities in the bacteriological examination of rats. **Herring, R. A.**, Passed Assistant Surgeon. Leave of absence for fifteen days from July 18, 1912, amended to read "five days' leave from July 18, 1912." **Heterick, R. H.**, Assistant Surgeon. Relieved from duty at the San Francisco, Cal., quarantine station and directed to proceed to Manila, P. I., and report to the Chief Quarantine Officer for duty. **James, W. F.**, Acting Assistant Surgeon. Granted seven days' leave of absence from July 15, 1912, under paragraph 210, Service Regulations. **Kerr, J. W.**, Assistant Surgeon General. Directed to proceed to New York, N. Y., to attend the conference of the Advisory Board of the Hygienic Laboratory, on August 3, 1912. **Mullan, E. H.**, Passed Assistant Surgeon. Granted three days' leave of absence from July 17, 1912, under paragraph 191, Service Regulations. **Pettus, W. J.**, Assistant Surgeon General. Granted twenty days' leave of absence from August 12, 1912. **Preble, Paul**, Assistant Surgeon. Granted one month's leave of absence from August 1, 1912. **Ramus, Carl**, Passed Assistant Surgeon. Granted one day's leave of absence on account of sickness, July 11, 1912. **Rucker, W. C.**, Assistant Surgeon General. Directed to proceed to New York, N. Y., and confer with the Commissioner of Health of the City of New York relative to the collection of rodents for laboratory examination and de-ratization methods to be put in force. **Sicherman, H.**, Acting Assistant Surgeon. Granted seven days' leave of absence from July 31, 1912, under paragraph 210, Service Regulations. **Stump, F. A.**, Pharmacist. Granted four days' leave of absence from July 10, 1912, under paragraph 210, Service Regulations. **Watson, H. J.**, Acting Assistant Surgeon. Granted five days' extension of annual leave, on account of sickness, from July

17, 1912. **Williams, L. L.**, Surgeon. Relieved from duty at the Marine Hospital, Boston, Mass., and directed to proceed to Wilmington, N. C., and assume command of the Service at that port.

Boards Continued.

Board of medical officers convened to meet at the Bureau, August 2, 1912, for the physical examination of a cadet in the Revenue Cutter Service, to determine his fitness to be commissioned as a third lieutenant. Detail for the board: Assistant Surgeon General W. J. Pettus, chairman; Assistant Surgeon R. A. Kearny, recorder.

Passed Assistant Surgeons B. S. Warren and W. H. Frost designated by the Secretary of the Treasury as members of a retiring board to meet at the Division of Revenue Cutter Service, August 12, 1912.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the two weeks ending August 10, 1912:

Ames, H. E., Medical Director. Detached from duty and ordered home. **Benton, F. L.**, Surgeon. Detached from the *Maine* and ordered to the *New Hampshire*. **Bertolette, D. N.**, Medical Director. Detached from Washington Hospital, and ordered to duty as president of the Naval Medical Examining Board. **Gardner, J. E.**, Medical Director. Detached from duty and ordered home. **Giltner, H. A.**, Passed Assistant Surgeon. Ordered to the Navy Yard, Norfolk, Va. **Harlan, Tharos**, Passed Assistant Surgeon. Commissioned a passed assistant surgeon in the United States Navy from April 14, 1912. **Healey, J. E.**, Acting Assistant Surgeon. Appointed an acting assistant surgeon in the United States Army from August 5, 1912. **Hermesch, H. R.**, Passed Assistant Surgeon. Detached from the Minneapolis Recruiting Station and ordered to the Asiatic Station. **Lane, H. H.**, Passed Assistant Surgeon. Ordered to Annapolis Hospital. **Rhoades, G. C.**, Passed Assistant Surgeon. Detached from the *Ohio* and ordered to the *South Carolina*. **Riker, G. A.**, Passed Assistant Surgeon. Commissioned a passed assistant surgeon in the United States Navy from April 14, 1912. **Smith, C. W.**, Passed Assistant Surgeon. Commissioned a passed assistant surgeon in the United States Navy for October 3, 1911. **Sutton, D. G.**, Passed Assistant Surgeon. Detached from the Annapolis Hospital and ordered to the Naval Academy. **Taylor, E. C.**, Acting Assistant Surgeon. Ordered to the Minneapolis Recruiting Station. **Toulon, A. J.**, Passed Assistant Surgeon. Commissioned a passed assistant surgeon in the United States Navy from April 11, 1911.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending August 10, 1912:

Ashford, Bailey K., Major, Medical Corps. Ordered to go to Washington, D. C., on official business. **Church, James R.**, Major, Medical Corps. Granted ten days' leave of absence. **Clayton, Jere B.**, Major, Medical Corps. Ordered to proceed to Fort McDowell, California, for temporary duty. **Davis, William B.**, Colonel, Medical Corps. Retired from active service on August 5th. **Davis, William R.**, Captain, Medical Corps. Granted leave of absence for one month. **Eastman, William K.**, Major, Medical Corps. Granted two months' leave of absence. **Ford, Joseph H.**, Major, Medical Corps. Sick leave of absence for ten days extended twenty days, with permission to apply for an extension of one month; sick leave extended thirty days. **Garcia, Leon C.**, Captain, Medical Corps. Relieved from duty in the Philippines Division, and detailed in the Army Transport Service with station in San Francisco, Cal. **Munson, Edward L.**, Major, Medical Corps. Granted two months' leave of absence. **Purviance, William E.**, Major, Medical Corps. Retired from active service as a lieutenant colonel, by reason of disability incident to the service. **Reasoner, N. A.**, Captain, Medical Corps. Granted two months' and five days' leave of absence. **Richards, Robert L.**, Captain, Medical Corps. Granted one month's leave of absence. **Tuttle, Arnold D.**, Captain, Medical Corps.

Granted leave of absence for four months, with permission to go beyond the seas. **Tuttle, George B.**, First Lieutenant, Medical Reserve Corps. Leave of absence extended two months and fifteen days, and will stand relieved from active duty in the Medical Reserve Corps of the United States Army upon expiration of this leave.

Births, Marriages, and Deaths.

Born.

Chambliss.—In Americus, Ga., on Friday, July 26th, to Dr. John Wade Chambliss and Mrs. Chambliss, a son. **Cooper.**—In Manila, P. I., on Sunday, June 23d, to Lieutenant Webb E. Cooper, Medical Corps, United States Army, and Mrs. Cooper, a son. **Straub.**—In Dubuque, Iowa, on Thursday, August 1st, to Major Paul F. Straub, Medical Corps, United States Army, and Mrs. Straub, a son.

Married.

Austen-Bass.—In Niagara Falls, N. Y., on Friday, August 2d, Dr. Frederick Austen, of Lacona, and Miss Alice Bass. **Bennett-Newkirk.**—In Indianola, Ill., on Tuesday, July 23d, Dr. Corna L. Bennett and Miss Nellie Carolyn Newkirk. **Carrow-Withington.**—In Jackson, Mich., on Wednesday, July 31st, Dr. Fleming Carrow, of Traverse City, and Miss Kate W. Withington. **Curtin-O'Malley.**—In Syracuse, N. Y., on Thursday, July 25th, Dr. William A. Curtin and Miss Elizabeth O'Malley. **Grosvenor-Swickard.**—In Columbus, Ohio, on Wednesday, July 31st, Dr. Fred Browne Grosvenor, of Cincinnati, and Miss Olive Swickard. **King-Tiernan.**—In San Francisco, Cal., on Thursday, July 18th, Lieutenant Charles T. King, Medical Corps, United States Army, and Miss Pamela Frances Tiernan. **Lofland-Evans.**—In Philadelphia, on Saturday, July 27th, Dr. James P. Lofland, of Dover, Del., and Miss Mary Rodney Evans. **Rohr-McLean.**—In Milwaukee, Wis., on Saturday, August 3d, Dr. John H. Rohr and Miss Marie McLean. **Wiles-Beattie.**—In Warwick, N. Y., on Wednesday, July 31st, Dr. Leslie L. Wiles, of Amsterdam, and Miss Helen Beattie. **Wilson-Lewis.**—In Somerton, Pa., on Saturday, July 27th, Dr. C. P. Wilson, of Fort Smith, Ark., and Miss Lucy Evelyn Lewis.

Died.

Allard.—In Fond du Lac, Wis., on Thursday, August 1st, Dr. Edmund C. Allard, aged fifty-four years. **Aronsohn.**—In St. Paul, Minn., on Thursday, August 1st, Dr. David M. Aronsohn, aged thirty-four years. **Barron.**—In Baltimore, Md., on Friday, August 2d, Dr. John Barron, aged seventy years. **Beal.**—In New York, on Thursday, August 8th, Dr. Frederick Earl Beal, aged forty-four years. **Belden.**—In Goshen, Mass., on Monday, August 5th, Dr. Albert Matson Belden, of Northampton, aged forty-six years. **Burlingame.**—In Elgin, Ill., on Sunday, August 4th, Dr. Dwight Edward Burlingame, aged seventy years. **Campbell.**—In North Liberty, Ind., on Tuesday, July 30th, Dr. A. S. Campbell, aged eighty-four years. **Cowie.**—In Bangor, Me., on Sunday, August 4th, Dr. William I. Cowie, of Guilford, aged forty-three years. **Graham.**—In Stahlstown, Pa., on Wednesday, July 31st, Dr. Edmund H. Graham, aged forty-seven years. **Hatch.**—In Victoria, Texas, on Saturday, August 3d, Dr. Jethro A. Hatch. **Hilton.**—In Phillips, Me., on Thursday, August 1st, Dr. John F. Hilton, aged forty-five years. **Kimball.**—In Brookline, Mass., on Sunday, August 4th, Dr. Leonard M. Kimball. **Norris.**—In Rochester, Minn., on Tuesday, August 6th, Dr. Herbert Norris, of Philadelphia. **Roberts.**—In Oxford, Md., on Tuesday, August 6th, Dr. S. P. Roberts, aged sixty-six years. **Rue.**—In Lexington, Ill., on Monday, August 5th, Dr. George H. Rue. **Russell.**—In Leslie, Ark., on Monday, July 29th, Dr. R. L. Russell. **Trumbauer.**—In Coopersburg, Pa., on Thursday, August 1st, Dr. Henry Light Trumbauer, aged thirty-three years. **Walrath.**—In Saint Johnsville, N. Y., on Wednesday, August 7th, Dr. Adam Walrath, aged sixty years. **Walton.**—In Annapolis, Md., on Friday, August 9th, Dr. Henry Roland Walton, aged eighty-four years. **Yount.**—In Chicago, on Tuesday, August 6th, Dr. Wilas T. Yount, aged fifty-six years.

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THE INHERITANCE OF ACQUIRED CHARACTERS.

A Study of the Recent Literature.

By JONATHAN WRIGHT, M. D.,

New York,

Director, Department of Laboratories, New York Postgraduate Medical School and Hospital.

I.

THE DRIFT OF GENERAL BIOLOGICAL OPINION.*

There can be no doubt of the truth of the statement which is made from time to time that the most fruitful fields of scientific endeavor lie in those border territories which stretch in irregular outlines between the conventionally recognized domains of the different arbitrary divisions of biological science. There are two reasons why this should be: first, the only thing that separates one arbitrary division from another is ignorance; second, the admonition to work along the boundary lines is for the most part unheeded. While there are signs that the exaggerated tendency toward specialization in science has received a check in the last few years, it is nevertheless still overwhelmingly strong. A scarcely concealed attitude of mind can still be traced, especially in young scientific men, which intimates that in some way it is rather disgraceful to know much outside of one's immediate sphere of life work. This doubtless is an atavistic trait traceable to former decades. It is one of the numerous instances of conservatism, observable much more frequently in the young than in the old. Perhaps here are still other reasons why there is a hesitation on the part of the average man in science to encroach on the domains of his neighbor. These should class as secondary in importance. Modesty is perhaps the most creditable of them. The fear of ridicule is another,—less respectable and observable chiefly in those ever ready to pour out from their internal caldrons torrents of scorn on the unucky invaders of their own kingdoms. The most common, but the most trivial of all excuses urged why this broadening of one's thought cannot be accomplished, is lack of time.

So far as one has not followed that most trite of maxims in science—know something of all things and all of some one thing—so far is he a weak brother.

Everyone has his own method of work. No one in this can be a safe guide for another. Industry

and the power for work are the indispensable attributes of success in all human endeavor, the one fundamental basis for all, but beyond this there are no rules. Everyone works most successfully by methods he has himself evolved. So far as I myself am concerned, I turn to account a natural bent toward literary browsing by keeping at the back of my mind the query, How can I best apply any of this to those things with which I am immediately concerned? Manifestly, I should make a sorry failure were I to attempt to epitomize my reading for the benefit of those experts in the fields from which the original information flows in the ever moving streams of scientific literature. I am afraid I should be a little presumptuous were I to seek the excuse that I am conferring any benefit even upon the workers in my own field by placing before them, second hand, that information which they, as well as I, can obtain at first hand. I doubt, therefore, if this is a tenable excuse for the desultory sort of a résumé I am here making of various trends of biological thought. The most excusable motive I can urge is that it is always profitable for scientific workers to observe how scientific facts of extraneous origin ferment in the undigested mass of pabulum which is the daily food of another toiler in the same vineyard.

I may allow myself to pick up the thread of discourse at a point in one of my previous papers¹ where, with an intrepidity born of incomplete knowledge of my subject, I am afraid my critics will say, I find I have made an amateur's onslaught on the serried host of the ultraadherents of Weismann's theory of the inviolability of the germ plasm. Even in the three years only which have elapsed since the publication of the essay to which I refer, the aspect of the conflict has changed materially. We are looking at the problem at a little different angle. The tide of feeling in favor of ultraDarwinism has changed very essentially. The insufficiency of Darwin's theory of natural selection, long evident to many, is becoming daily more apparent to all. It has only been within a few years that even those who believe this have dared to proclaim openly their skepticism of what the English biologists are pleased to regard as orthodox doctrine in evolution. Jennings, in a recent presidential address² before the American Society of Naturalists has expressed himself as follows, referring to Mendelian observations:

There was a time, not distant, when the biologist hardly dared speak of the possibility of the inheritance of acquired characters in any sense, because experimentation

*Read at the Seminar of the Staff of the Laboratories, April 1, 1912.

¹Theories and Problems of Heredity, NEW YORK MEDICAL JOURNAL, January 6, February 13, 1909, et sequentes.

²Science, December 26, 1911.

was unable to demonstrate its occurrence. But after learning the rules for the interweaving and transfer of characteristics in successive generations, we find as much difficulty in showing experimentally that selection modifies hereditary characters as we do in showing the inheritance of acquired developmental habits, so that the two ideas now stand once more on the same footing. If we are reduced once more to judging the two ideas by their relative value for explaining what we find to exist, habit formation in development does not suffer by comparison with selection.

Still more recently, Przibram³ has recorded the conviction of many continental workers in problems of heredity and has systematically outlined a set of experimental observations, somewhat too ambitious in design, I am afraid, by which he hopes to trace the path of the environmental influence on the germ plasm.

The question of the heredity of acquired characters has entered a new stage. There is no longer any question of characters, which have become visible through the influence of the environment of their parents, being again visible in the offspring after they have been returned to former surroundings. This has been answered in the affirmative in all the larger groups of animals and plants. The question which remains is chiefly as to how the change in the descendants has been brought about.

The methods by which this may be brought about are to be discussed as follows:

1. Direct influence on the germ plasm.
2. On the soma and through it on the germ plasm.
3. On both, practically simultaneously.

So far as the ingenious experiments of his fellow workers on these problems have gone, it seems possible that at least a fractional part of the sunlight may reach the ovaries through the stroma—1/173 part according to Secerov. The influence of heat is a matter of more doubt, according to Congdon.

Another quotation from the English journal, *Nature*, which hitherto has been the stronghold of the ultraDarwinists, will show how the tide is drifting in Great Britain in the matter. It is a review of the third edition of Semon's *The Mnemic Theory of Heredity*⁴:

The mnemic theory, which is based upon a belief in the inheritance of acquired characters, naturally does not appeal to those who deny the possibility of such inheritance. The position taken up with regard to this question by Professor Weismann and his followers, however, can scarcely be maintained much longer in face of the rapidly accumulating evidence which, it must be confessed, their unbelief has been perhaps the chief agent in eliciting.

Professor Semon cites several instances of this evidence in the work before us, the most convincing of which appears to be that obtained by M. E. Bodge in the case of peach trees. It has long been known that European trees, when grown in tropical or semitropical countries, tend to lose their deciduous character and become evergreen. This is the case in the island of Réunion, where M. Bodge conducted his experiments. He found that in the course of twenty years peach trees imported from Europe become almost completely evergreen. This, of course, is an individual *somatogenic*, or so called *acquired* character; but when seeds of these modified trees are sown in certain mountain districts where they are exposed to a considerable amount of frost, they produce young peach trees which are also evergreen, although seed imported from Europe and sown in similar situations produces normal deciduous trees.

It is true that an attempt has been made with regard to such cases to uphold the Weismannian position by suggesting that the stimulus of changed environment affects both the somatic cells and the germ cells of the parent simultaneously, by what is called "parallel induction," so that the germ cells are modified in a corresponding fashion to the somatic cells, and will therefore give rise to similarly modified offspring; but this certainly looks very like a last attempt to maintain an untenable position, and, in any case, as Sumner and Semon have pointed out, it makes no difference as regards the importance of the action of the environment as a factor in organic evolution whether we suppose the effect upon the germ cells to be produced by "parallel" or by "somatic" induction.

This criticism of Dendy⁵ coincides exactly with remarks which I myself have made in regard to the same begging of the question in the article to which I have referred above.

This setback of ultraWeismannian views is thus seen to be quite as decided as the impeachment of the ultraDarwinian view of natural selection. All this would be still more apparent were it not for the reserve excited by the thought that Mendelian lines of investigation may in the future totally change the validity of any views expressed at present. There seems, however, no reason why the arguments and observations, valid against the ultradocctrines of the germ plasm theory of Weismann as a whole, should not be valid against those units of it, apparently transmitted undivided according to the law of Mendel.

The advent of Mendelian experimentation has compelled us to look at the matter at a little different angle, as I said, yet essentially the question is not altered. Darwin concluded that variability of every sort is due to changed conditions of life and as Conklin⁶ remarks: "It is not yet certain that the unit characters, or rather their determiners in the germ, are beyond the reach of environmental influence; it is not certain that in their mixture with others they never combine or influence each other in such manner as to form new unit characters. Indeed, it is difficult to understand how new characters could ever appear except under one or the other of these conditions."

Despite their skepticism, the weight of neoLamarckian evidence has had its influence upon the most advanced of Mendelians, and Davenport⁷ admits "that the experiments of Standfuss, Tower and Kammerer on animals, and MacDougal on plants, apparently indicate that under the influence of various conditions of moisture, temperature and chemical action the germ plasm may be changed. These results, probable as they are, await confirmation. If fully confirmed they will afford a picture of one way in which new determiners may originate. On the whole, I think it may be fairly said that experimental work supports the principle of selective elimination but finds many characters that are wholly neutral."

Blaringhem, who had previously⁸ done such valuable work in the experimental production of mutations and heritable variations in maize, has been engaged since in similar work on other organisms. A short time ago the French academy awarded him a fund for the purpose of continuing this work. I presume his book, *Les Transformations brusques de*

³Die Umwelt des Keimplasmas von Hans Przibram, Abh. f. die Entwicklungsgeschichte der Organismen, xxxiii, 1 and 2, February 20, 1912.

⁴Die Mneme als erhaltendes Prinzip im Wechsel des organischen Geschehens, Von R. Semon, Dritte Auflage, Pp. xxvii + 10 (Leipzig: W. Engelmann, 1911.)

⁵Nature, January 18, 1912.

⁶American Naturalist, March, 1912.

⁷Ibidem.

⁸Mutations et Transformations, Paris, Meunier, 1907.

êtres vivants (1911) is partly the result of this encouragement. He is a follower of De Vries up to a certain point, but while De Vries has emphasized the importance of sudden large variations, which he terms mutations, he has not as yet presented evidence that these occur in sufficient numbers to cover the whole field of evolutionary change in living beings.

As to the work which Blaringhem has pursued since the publication of his work upon mutations and traumatism influencing variation and heredity, he says that since 1907 he has continued to make attempts in the same direction, sometimes with maize, which was the principal object of his researches at first, sometimes with cultivated plants, and sometimes with wild ones. In all cases he succeeded in causing the appearance of a great number of monstrosities, many of which have as yet not been described, and in some cases he obtained new and stable forms. Important as are this work and that of De Vries, they do not promise to precipitate again a conflict like that which raged in scientific France nearly a hundred years ago between those partisans of sudden, and those of gradual change in geological and other cosmic fields of evolution. It has not excited the amount of interest which its importance promised, and this is due chiefly to the fact that De Vries, unlike Darwin, has not been able to collect the enormous store of facts necessary to establish his evolutionary doctrine as the chief theory of scientific thought. Indeed, De Vries and Blaringhem and many others also have been able to adduce from Darwin's own works more support for De Vries's contentions than it is possible to find in those of De Vries himself. It is true that there are very serious objections to the acceptance of the view that Darwin's natural selection from slow variations is an efficient agent of evolution. We may at least conclude that it is not a *sufficient* explanation.

While it is very evident that though there are serious objections to the efficiency of the part of the theory of evolutionary change for which in an etiological way Darwin expressed preference, that is, the method of slow variation, the extent of it can be neither proved nor disproved. No experimenter can hope to live long enough to keep a record of the stage of evolution of any given plant or animal, and finally, when an appreciable change has occurred, make a second record. Now this difficulty does not obtain in the case of the large variations, the sports of Darwin, the mutations of De Vries; because Darwin and De Vries and Blaringhem and others have collected from contemporary, or only slightly antiquated records evidence of the existence of such phenomena, in undoubted, yet after all, in such few instances that it is entirely insufficient to establish the view that it is the chief method of evolutionary change. Owing to this apparent infrequency in the occurrence of sudden wide variations, owing also to the fact that the efficiency of slow variations cannot be tested by the simple observation of Nature, the chief method of her changes is uncertain.

It is probably owing to the doubt engendered by this feeling of the insufficiency of Darwin's theories to explain the course of evolution that neovitalism

has taken such a hold on scientific as well as on philosophical thought. Driesch's criticisms have shaken belief in the security of selectionist doctrine as applied to the specific instances he has cited. On the other hand he has failed to secure much consideration for his entelechies, which for the ordinary scientific worker stand for nothing but a confession of ignorance to which he himself is quite ready to subscribe. Bergson, far more metaphysical, and drawing from biology only secondary information, is nevertheless much more of a constructive and less of a destructive neovitalist.

Fascinating and suggestive as is the thought of Bergson⁹ it is difficult to see how even his most appreciative reader can fail to acknowledge that for the most part he cuts himself loose from reality and builds in the realms of fancy. At least the beauty of his edifice is marred by our consciousness of the slender basis on which it rests.

One of the repellent things about such theories of life for the scientific man is that as soon as we adopt a tutelary genius—a directive impulse for it—there is an abandonment of incentive to scientific labor. If we are thus to turn to metaphysics in the face of difficulty, we are like children who agree to cheat at their games of skill, like those who in playing at checkers invert the game into a "give away." This is obviously no reason, one must hasten to say, why Bergson's theories or those of any other theorist are not correct. The witchery of his style carries us along, while the keenness of his criticism, the very essence of all that is delightful and unique in the Gallic spirit, is incomparable among modern essayists. He accepts the fact of evolution. He declares:

That adaptation to environment is the necessary condition of evolution we do not question for a moment. It is quite evident that a species would disappear, should it fail to bend to the conditions of existence which are imposed on it. But it is one thing to recognize that outer circumstances are forces evolution must reckon with, another to claim that they are the directing causes of evolution. This latter theory is that of mechanism. It excludes absolutely the hypothesis of an original impetus, I mean an internal push that has carried life, by more and more complex forms, to higher and higher destinies.

He who perceives successive events one by one will allow himself to be led by them; he who grasps them as a whole will dominate them.

The mechanistic explanations hold good for the systems that our thought artificially detaches from the whole. But of the whole itself and of the systems which, within this whole, seem to take after it, we cannot admit *a priori* that they are mechanically explicable, for then time would be useless, and even unreal.

Bergson's idea is that life is guided to its goal by the influence of something which begins to be operative by adopting the mechanical and physical causes of phenomena and eventually controls it by supersensual means. Our difficulty in finding a definition for life indeed suggests that it insinuates itself, steals into the organization of matter unperceived.

The strongest argument against Darwinian evolution, he declares, is the phenomenon of living things, whose phylogeny is all but unconnected, exhibiting organs evolved in practically the same way, for instance the eye of the bird or of the frog, and that of the ox. Having traversed such different

⁹Bergson's *Creative Evolution*, Mitchell's translation.

phylogenetic paths in evolution, having been subjected to such diverse environment, why are such similar results attained? His criticism, however, is applicable better to natural selection doctrine than to adaptations and their inheritance. He chooses as an example of inexplicable similarity the generative cellular processes of animals and plants. How similar the coadaptation of chromosomes of each in fecundation! How dissimilar the phylogeny! He exclaims: Where is the adaptation? Where is the pressure of external circumstances?

The constant repetition of the same variations, as instanced for mutations, tends to help in "waiting for complementary" variations, but in the eye there is force in his reasoning that such numerous and widely variant correlations are necessary that it is difficult to see how the eye was improved without the intervention of a "tutelary genius."

The force of the criticism, which indeed was urged first many years ago against Darwinism, receives only a fresh addition in his citation of the analogy of the chromosomes of plants and animals.

In the attempt to preserve an unbiased and judicial state of mind, in considering the question which is being so actively discussed by the vitalists and by the mechanists, as to whether there is anything metaphysical about life, I am afraid some of us, though of materialistic leanings at bottom, have been a little too conservative. I think Loeb is quite right to insist that he has demonstrated more than people are disposed to give him credit for. In his recent article in the *Revue scientifique* (March 9, 1912) he remarks: "Nevertheless, it appears to me that things have been cleared up and vitalistic and mystic notions have been cut short when it has been demonstrated that it is possible to replace the mysterious and specially endowed agents of life, the 'animalcule of the sperma' by a physical and chemical agent: The elevation of the concentration of sea water."

On the whole, the modern cult of Bergson's philosophy the scientific man is justified in looking on, not as supplementary to science, but as a symptom that science, ever on the trail of truth, has for the moment lost the scent. While it seems, in its ingenuity, a constructive philosophy, it is only for the moment. As one reads, it rapidly degenerates into mere mysticism.

Bergson suggests that instinct, that life itself is bound up with consciousness, and that throughout all living things consciousness, and therefore life and instinct or intuition, are interpenetrating. This reveals a mystic sympathy between living things, which, he thinks, helps to explain a number of otherwise inexplicable phenomena, for instance those of instinct. But how have we advanced any distance by thus displacing a mystery by a mysticism?

Perhaps a more careful examination of the animal and plant world in the light of the interest aroused by De Vries's work will prove his mutations, which are looked upon as exceptions, to be more frequent than is now apparent. Blaringhem, in his recent publication, has collected a considerable, but not an imposing number of instances. Though a large number were known to him, the infrequency of saltations was Darwin's reason for coming to the conclusion that on the whole, in the

general scheme of things, the occurrence of sports in nature is a negligible quantity in the process of evolution. One of the things that has emerged from the discussion of saltations and sports is the fact that there is a tendency, allied to the phenomena of orthogenesis, by virtue of which certain saltations or sports or wide variations tend to repetition time and again in the phylogeny of the race, like the mutations of the primrose of De Vries.

Some time ago I dwelt upon the analogy which could be traced between the phenomenon of mutation in biology and various indications pointing to the same process in the genesis of cancer.¹⁰ In following out this analogy, I pointed out that it was quite possible to look upon the cancer cell as an atavistic mutation or reversion to the embryonic type of cell in so far as what is called its immortality is concerned, but differing from it absolutely in the loss of that altruistic control of growth which is far more characteristic of the embryonic cells than any other one attribute. Much of this conception has been discussed by others since the publication of my paper. In a recent reference,¹¹ the work of Wilson, in the *Journal of Experimental Zoology* for October, 1911, is abstracted under the title of The Regressive Differentiation of Cells:

Recent researches have shown that when one dissects very minutely a sponge in such a manner that the cells are isolated, they are able to gather together again in a mass and give birth to a new sponge perfectly formed. These masses, of course, are formed of all sorts of cells, certain ones of which are more or less sharply differentiated, while others belong to the category of nonspecialized cells or indifferent amebalike cells.

One might ask, what is the fate of the differentiated cells? Do they undergo a regression, transforming themselves into indifferent cells, or are they rather destroyed by the amebocytes? The question is quite difficult to answer, for in the sponges the amebocytes which enter into the formation of the median layer of the wall of the body are very abundant elements.

Owing to these difficulties in settling the question, Wilson turned to experiments upon two of the hydroids. These being better adapted to the solution of the question, as the result of careful observation and experimentation, he came to the conclusion that there is, as a matter of fact, a true regressor of cells which have been specialized in the normal animal. This return of more highly differentiated cells to the embryonal state, he is right in regarding as of interest in the study of the etiology of tumors. It not only has its interest for this problem, but it has a bearing perhaps still more direct upon the question of the specificity of the germ plasm. We see in this comparatively low organism the tendency more marked than in higher organisms, it is true, to revert to the embryonal type of cell, but once the possibility of the process is established, it forms a marked support for many other phenomena of regeneration in higher animals.

It is difficult to see how Mendelianism can find its application in the explanation of such a phenomenon as this, but one must be cautious, for the ingenuity of many of the Mendelians is beyond understanding. What I wish to emphasize in this connection is the tendency of disturbance in the e

¹⁰IV. The Affiliation of the Specific Problems of Cancer with Specific Problems of Heredity, NEW YORK MEDICAL JOURNAL, 21: 241, 1909.

¹¹*Revue scientifique*, December 9, 1911.

vironment to produce atavism in all living beings.

Now in the strike back, or atavistic change, we have in the hydroids a reversion to the embryonic form of cell. That is, a somatic cell becomes a germ cell—a direct hint that the differentiation between body plasma and germ plasma is not an essential one. The laws governing one should govern the other. I shall take up this point in discussing bacterial mutations where it is supposed no differentiation has occurred. Another point, in regard to cancer, is a corollary of the foregoing. We see that the external environment of inflammation or other stimulus has wrought a change in the somatic cell and it has rolled back on the atavistic facet usual in mutations. Numerous biological facts may be cited in support of this view. It seems to be a universal law.

As to mutations, it is the experimental side of the question which seems likely to be the most fruitful source from which we are to draw in the future our real knowledge of the method of evolutionary change. Experimental biology is still very much in its infancy. There have been many disappointments already because results have not been obtained. We are still compelled to take account of the possibility, nay the probability, that after we have shown how Nature *may* change, we are still very far from showing how she really *does* change. We are familiar in medicine with the havoc which this error of ratiocination has wrought in conclusions arrived at by deduction. In the numerous infectious diseases it has been, and is still being amply shown that the disease *may* be carried, that the infection *may* occur, without the shadow of doubt, in many ways. The ubiquitous fly, the succulent oyster, the water of the country spring, we know *may* carry typhoid germs. We know that infection *may* thus occur occasionally in Nature, but whether to these sources of infection we are warranted in ascribing the vast number of cases of typhoid which ravage the population, whether these ways are *really* the ways in which Nature takes her stealthy revenge, we are entirely ignorant. To follow the evasive fly, to cut from our dietary the toothsome oyster, to boil all our water, may well be regarded as silly and ridiculous proceedings. Were we to base our practical efforts in the eradication of communicable disease, upon what we can learn alone from experimental methods or alone from casual observation of isolated cases, we should soon have the layman adjured to take up a course of life which would render life not worth living. So in evolutionary science, so in the conflict between the mutationist and the ancient Darwinian school, we may well beware in experimental biology of this fallacy.

Blaringhem has shown that by certain mutilations of the maize stalk; MacDougal has shown that by the injection of the ovaries of a plant with extraneous fluid; many others have shown in various ways that the heredity of the plant *may* be changed, that the germ plasma is not inviolable, yet, though experimental biology is thus weaving a tissue of evidence in support of doctrines which many of us hold in a tentative theoretical way, we must not be blind to the fragility of the material out of which it is constructed. The extreme Weismannians may, on this or other grounds, ignore the evidence which

is accumulating as much as they wish, the ultra-Darwinians may proclaim, as they persist in doing, that anything that can be affected by the environment is *ipso facto* a somatic entity, but still the evidence accumulates that this is a mere example of verbal acrobatics. I believe that this is the present state of feeling among biologists in general, especially among those outside of a narrow circle in England.

Considerable work is being done by MacDougal, Blaringhem, Kammerer, and others in experimental biology to establish the validity of the assertion that it is the environmental impact on the soma which causes the saltations. As I have said, the consideration must be taken into account, whether or not this is Nature's way of doing it. Yet, notwithstanding this ever valid criticism, if in the future by the accumulation of evidence brought out in experimental biology, we can once firmly establish the point that the germ plasma is subject to the ordinary laws of cosmic force—and theoretically, if we deny it we simply drift into vitalism—the presumption would be very strong that this *is* the way, that it *is* by the impact of the environment that evolutionary change, whether the slow one of Darwin's variations, or the rapid one of De Vries's mutations, is brought about. How any one, who does not proclaim himself a vitalist, can believe anything else from an *à priori* point of view, I have never been able to see. I have often insisted on the essential vitalistic nature of the ultra-Weismannian view of heredity. That those who hold to the theory of the inviolability and continuity of the germ plasma have placed themselves in such a category is amply illustrated by the following quotation from Bergson, who after referring to the Weismann conception of the continuity of the germ plasma, says: "At a certain moment in certain points of space a visible current has taken rise; this current of life, traversing the bodies it has organized, one after another, passing from generation to generation, has become divided among species and distributed among individuals without losing anything of its force, rather intensifying in proportion to its advance."

There is very slender theoretical support for the house fly or for the oyster as an important factor in typhoid etiology, though its occasional participation cannot be denied from *à priori* considerations. The case is much stronger for the experimental biological proof of the heredity of acquired characters, because we know of no other substance in Nature than germ plasma of which it is asserted that it suffers from no environmental influence. That places it in a metaphysical category. Therefore it is the weight of the experimental evidence, plus something else, which gives force to the arguments I am citing as to the hereditability of acquired characters. That "something else" is common sense—is the obvious. Weismann himself has long since seen the point and has denied that he ever announced that the germ plasma has metaphysical attributes, that it is something dwelling outside the laws which govern other matter. Such I insist is the inevitable deduction, which we must take from the avowals of those at least who out-Weismann Weismann himself. He declared he meant only to insist that the germ plasma is very rarely and with extreme difficulty affected

phylogenetic paths in evolution, having been subjected to such diverse environment, why are such similar results attained? His criticism, however, is applicable better to natural selection doctrine than to adaptations and their inheritance. He chooses as an example of inexplicable similarity the generative cellular processes of animals and plants. How similar the coaptation of chromosomes of each in fecundation! How dissimilar the phylogeny! He exclaims: Where is the adaptation? Where is the pressure of external circumstances?

The constant repetition of the same variations, as instanced for mutations, tends to help in "waiting for complementary" variations, but in the eye there is force in his reasoning that such numerous and widely variant correlations are necessary that it is difficult to see how the eye was improved without the intervention of a "tutelary genius."

The force of the criticism, which indeed was urged first many years ago against Darwinism, receives only a fresh addition in his citation of the analogy of the chromosomes of plants and animals.

In the attempt to preserve an unbiased and judicial state of mind, in considering the question which is being so actively discussed by the vitalists and by the mechanists, as to whether there is anything metaphysical about life, I am afraid some of us, though of materialistic leanings at bottom, have been a little too conservative. I think Loeb is quite right to insist that he has demonstrated more than people are disposed to give him credit for. In his recent article in the *Revue scientifique* (March 9, 1912) he remarks: "Nevertheless, it appears to me that things have been cleared up and vitalistic and mystic notions have been cut short when it has been demonstrated that it is possible to replace the mysterious and specially endowed agents of life, the 'animalcule of the sperma' by a physical and chemical agent: The elevation of the concentration of sea water."

On the whole, the modern cult of Bergson's philosophy the scientific man is justified in looking on, not as supplementary to science, but as a symptom that science, ever on the trail of truth, has for the moment lost the scent. While it seems, in its ingenuity, a constructive philosophy, it is only for the moment. As one reads, it rapidly degenerates into mere mysticism.

Bergson suggests that instinct, that life itself is bound up with consciousness, and that throughout all living things consciousness, and therefore life and instinct or intuition, are interpenetrating. This reveals a mystic sympathy between living things, which, he thinks, helps to explain a number of otherwise inexplicable phenomena, for instance those of instinct. But how have we advanced any distance by thus displacing a mystery by a mysticism?

Perhaps a more careful examination of the animal and plant world in the light of the interest aroused by De Vries's work will prove his mutations, which are looked upon as exceptions, to be more frequent than is now apparent. Blaringhem, in his recent publication, has collected a considerable, but not an imposing number of instances. Though a large number were known to him, the infrequency of saltations was Darwin's reason for coming to the conclusion that on the whole, in the

general scheme of things, the occurrence of sports in nature is a negligible quantity in the process of evolution. One of the things that has emerged from the discussion of saltations and sports is the fact that there is a tendency, allied to the phenomena of orthogenesis, by virtue of which certain saltations or sports or wide variations tend to repetition time and again in the phylogeny of the race, like the mutations of the primrose of De Vries.

Some time ago I dwelt upon the analogy which could be traced between the phenomenon of mutation in biology and various indications pointing to the same process in the genesis of cancer.¹⁰ In following out this analogy, I pointed out that it was quite possible to look upon the cancer cell as an atavistic mutation or reversion to the embryonic type of cell in so far as what is called its immortality is concerned, but differing from it absolutely in the loss of that altruistic control of growth which is far more characteristic of the embryonic cells than any other one attribute. Much of this conception has been discussed by others since the publication of my paper. In a recent reference,¹¹ the work of Wilson, in the *Journal of Experimental Zoology* for October, 1911, is abstracted under the title of *The Regressive Differentiation of Cells*:

Recent researches have shown that when one dissects very minutely a sponge in such a manner that the cells are isolated, they are able to gather together again in a mass and give birth to a new sponge perfectly formed. These masses, of course, are formed of all sorts of cells, certain ones of which are more or less sharply differentiated, while others belong to the category of nonspecialized cells or indifferent amebalike cells.

One might ask, what is the fate of the differentiated cells? Do they undergo a regression, transforming themselves into indifferent cells, or are they rather destroyed by the amebocytes? The question is quite difficult to answer, for in the sponges the amebocytes which enter into the formation of the median layer of the wall of the body are very abundant elements.

Owing to these difficulties in settling the question, Wilson turned to experiments upon two of the hydroids. These being better adapted to the solution of the question, as the result of careful observation and experimentation, he came to the conclusion that there is, as a matter of fact, a true regression of cells which have been specialized in the normal animal. This return of more highly differentiated cells to the embryonal state, he is right in regarding as of interest in the study of the etiology of tumors. It not only has its interest for this problem, but it has a bearing perhaps still more direct upon the question of the specificity of the germ plasm. We see in this comparatively low organism the tendency more marked than in higher organisms, it is true, to revert to the embryonal type of cell, but once the possibility of the process is established, it forms a marked support for many other phenomena of regeneration in higher animals.

It is difficult to see how Mendelianism can find its application in the explanation of such a phenomenon as this, but one must be cautious, for the ingenuity of many of the Mendelians is beyond understanding. What I wish to emphasize in this connection is the tendency of disturbance in the en-

¹⁰IV. The Affiliation of the Specific Problems of Cancer with the Specific Problems of Heredity, NEW YORK MEDICAL JOURNAL, April 24, 1910.

¹¹*Revue scientifique*, December 9, 1911.

vironment to produce atavism in all living beings.

Now in the strike back, or atavistic change, we have in the hydroids a reversion to the embryonic form of cell. That is, a somatic cell becomes a germ cell—a direct hint that the differentiation between body plasm and germ plasm is not an essential one. The laws governing one should govern the other. I shall take up this point in discussing bacterial mutations where it is supposed no differentiation has occurred. Another point, in regard to cancer, is a corollary of the foregoing. We see that the external environment of inflammation or other stimulus has wrought a change in the somatic cell and it has rolled back on the atavistic facet usual in mutations. Numerous biological facts may be cited in support of this view. It seems to be a universal law.

As to mutations, it is the experimental side of the question which seems likely to be the most fruitful source from which we are to draw in the future our real knowledge of the method of evolutionary change. Experimental biology is still very much in its infancy. There have been many disappointments already because results have not been obtained. We are still compelled to take account of the possibility, nay the probability, that after we have shown how Nature *may* change, we are still very far from showing how she really *does* change. We are familiar in medicine with the havoc which this error of ratiocination has wrought in conclusions arrived at by deduction. In the numerous infectious diseases it has been, and is still being amply shown that the disease *may* be carried, that the infection *may* occur, without the shadow of doubt, in many ways. The ubiquitous fly, the succulent oyster, the water of the country spring, we know *may* carry typhoid germs. We know that infection *may* thus occur occasionally in Nature, but whether to these sources of infection we are warranted in ascribing the vast number of cases of typhoid which ravage the population, whether these ways are *really* the ways in which Nature takes her stealthy revenge, we are entirely ignorant. To follow the evasive fly, to cut from our dietary the toothsome oyster, to boil all our water, may well be regarded as silly and ridiculous proceedings. Were we to base our practical efforts in the eradication of communicable disease, upon what we can learn alone from experimental methods or alone from casual observation of isolated cases, we should soon have the layman adjured to take up a course of life which would render life not worth living. So in evolutionary science, so in the conflict between the mutationist and the ancient Darwinian school, we may well beware in experimental biology of this fallacy.

Blaringhem has shown that by certain mutilations of the maize stalk; MacDougal has shown that by the injection of the ovaries of a plant with extraneous fluid; many others have shown in various ways that the heredity of the plant *may* be changed, that the germ plasm is not inviolable, yet, though experimental biology is thus weaving a tissue of evidence in support of doctrines which many of us hold in a tentative theoretical way, we must not be blind to the fragility of the material out of which it is constructed. The extreme Weismannians may, on this or other grounds, ignore the evidence which

is accumulating as much as they wish, the ultra-Darwinians may proclaim, as they persist in doing, that anything that can be affected by the environment is *ipso facto* a somatic entity, but still the evidence accumulates that this is a mere example of verbal acrobatics. I believe that this is the present state of feeling among biologists in general, especially among those outside of a narrow circle in England.

Considerable work is being done by MacDougal, Blaringhem, Kammerer, and others in experimental biology to establish the validity of the assertion that it is the environmental impact on the soma which causes the saltations. As I have said, the consideration must be taken into account, whether or not this is Nature's way of doing it. Yet, notwithstanding this ever valid criticism, if in the future by the accumulation of evidence brought out in experimental biology, we can once firmly establish the point that the germ plasm is subject to the ordinary laws of cosmic force—and theoretically, if we deny it we simply drift into vitalism—the presumption would be very strong that this is the way, that it is by the impact of the environment that evolutionary change, whether the slow one of Darwin's variations, or the rapid one of De Vries's mutations, is brought about. How any one, who does not proclaim himself a vitalist, can believe anything else from an *à priori* point of view, I have never been able to see. I have often insisted on the essential vitalistic nature of the ultra-Weismannian view of heredity. That those who hold to the theory of the inviolability and continuity of the germ plasm have placed themselves in such a category is amply illustrated by the following quotation from Bergson, who after referring to the Weismann conception of the continuity of the germ plasm, says: "At a certain moment in certain points of space a visible current has taken rise; this current of life, traversing the bodies it has organized, one after another, passing from generation to generation, has become divided among species and distributed among individuals without losing anything of its force, rather intensifying in proportion to its advance."

There is very slender theoretical support for the house fly or for the oyster as an important factor in typhoid etiology, though its occasional participation cannot be denied from *à priori* considerations. The case is much stronger for the experimental biological proof of the heredity of acquired characters, because we know of no other substance in Nature than germ plasm of which it is asserted that it suffers from no environmental influence. That places it in a metaphysical category. Therefore it is the weight of the experimental evidence, plus something else, which gives force to the arguments I am citing as to the hereditability of acquired characters. That "something else" is common sense—is the obvious. Weismann himself has long since seen the point and has denied that he ever announced that the germ plasm has metaphysical attributes, that it is something dwelling outside the laws which govern other matter. Such I insist is the inevitable deduction, which we must take from the avowals of those at least who out-Weismann Weismann himself. He declared he meant only to insist that the germ plasm is very rarely and with extreme difficulty affected

by its environment, while until recently some of his followers have declared it is inviolable. Weismann then has explicitly placed himself upon debatable ground while his ultra followers have flown to regions where the pinions of science cannot bear its disciples. How much it is affected by its environment, how often it is affected by its environment, are entirely rational queries, and we in medicine have a right to bear out our testimony as to human germ plasm. It is a remarkable fact, somewhat discouraging I must confess, that students of men, vastly more numerous than all the students of all other living beings put together, with few exceptions rarely venture to take any part in such biological discussions, and those who do are usually those who have no claim to medical eminence. With the exception of Brown-Séquard, I can think of scarcely a man of medical eminence who has contributed anything original to the discussion of this most burning question of general biology, either in argument or in fact. We must turn to students of other forms of animal life, without stopping to wonder at this anomaly. It is to students of animals less commonly under observation, and therefore, one would think, less likely to yield reliable data, that we must turn for evidence bearing on the question.

HEALTH CONDITIONS IN THE CANAL ZONE.

BY SAMUEL HORTON BROWN, M. D.,
Philadelphia.

The recent criticisms of the expense and methods of sanitation in the Canal Zone have prompted Colonel Gorgas, the chief sanitary officer of the Isthmian Canal Commission to make reply in an article published in the *Journal of the A. M. A.* for March 30, 1912, in which he analyzes the work accomplished and the cost thereof, thereby putting the writers of these criticisms to rout and causing confusion in their ranks. Colonel Gorgas's statements are not only interesting but also have that novel feature of truth, which is not exactly prominent in the remarks of his critics.

The entire medical profession is interested in the progress of the sanitary and medical work in Panama because, as in Cuba, it is a part of the opening of a new era, an era in which the medical man is to occupy the position of counsellor, and to rank high in all political and economic problems involving large communities.

It seems strange but none the less true, that a very large proportion of the citizens of the United States are still unaware that the sanitary features of the isthmus constitute the keynote of the problem of building the Panama canal. This was very forcibly impressed upon me during a recent visit to the Canal Zone (April, 1912), by the remarks of a large body of tourists inspecting the work of the commission with more or less critical eyes. The various details of the engineering were more or less familiar to them, but of the name of the chief sanitary officer, or the methods he employed, they had not the slightest idea, and they deduced from the profusion of mosquito netting that surely there

must be mosquitoes thereabouts. As a class, and they represented a fairly typical group of Americans, they appreciated the fact that the isthmus had been a most unhealthy region, but that under the American occupation it had become fairly healthy, as it was to be expected it would be. Just the presence of the Americans alone ought to make it that. Such deplorable indifference to a really great accomplishment is pitiful.

This "fairly healthy" state of affairs is worthy of further investigation. The report of the Department of Sanitation for 1911 aids us materially in such a quest for information. Thus we find in 1911 there were 48,876 employees at work on the canal, of whom 539 died, giving a death rate of 11.02 in a thousand; contrast this if you will with 1904, when the number of workers was 6,213, with eighty-two deaths, a rate of 13.26; and with 1905, when out of 16,512 there were 427 deaths, a rate of 25.86; and again with 1906, when out of 26,547, there were 1,105 deaths, a rate of 41.73. Since May, 1906 yellow fever has been entirely banished. For the month of January, 1912, the death rate was 8.10, and for February 10.57. For March, 1912, it was 8.45. For April, 1912, it was 11.38. For May, 1912, it was 8.01.

The Canal Zone by reason of the centralization of its government is kept in condition much better than the cities of the Republic of Panama, namely Colon and Panama, although the sanitary department exercises its authority over these two ports. Conditions of life are different there than on the Canal Zone, especially in the city of Panama and it is miraculous that anything is accomplished there.

In looking over the annual average death rate for the entire population of the isthmus, including the civil population of Colon and Panama together with the employees of the canal commission, we find that in 1911 it was 21.46, which contrasts strongly with that of 1905 which was 49.94. For the month of January, 1912, covering the same population it was 17.67; and in February, 1912, it was 16.33. For March, 1912, it was 14.67. For April, 1912, it was 17.21. For May, 1912, it was 19.01. This is more than remarkable when it is taken into consideration that Colon has a population of 19,947, of whom 3,000 are Chinese and about 500 native Panamanians, while the population of the City of Panama is estimated at about 46,555, made up of all nationalities, creeds, and colors.

The death rate for 1911 from disease among the white employees from the United States was 2.82 per mille, while the total death rate from all causes was 5.14 per mille. If the American women and children are included, the death rate of Americans from disease is raised to 4.48 per mille. Including the army and marines in the above, the death rate from disease is lowered to 2.36 per mille.

In analyzing the special causes of death among the employees of the canal commission during 1911, they are found to be in the order of their frequency, pneumonia, 94, malaria 47, dysentery 13, typhoid fever 10. Pneumonia seems to have predominated since 1904. Thus in 1905, there were ninety-five fatal cases; in 1906, 413 fatal cases; in 1907, 328 fatal cases; in 1908, ninety-three fatal cases; 1909, seventy fatal cases; 1910, seventy-three fatal cases.

At no time during this period did malaria cause more than 233 deaths, nor typhoid fever more than ninety-eight. Dysentery at its worst during this period, never caused more than sixty-nine deaths among the canal employees. Tuberculosis caused fifty-four deaths, nephritis thirty-nine, and abscess of the liver eight deaths. For the month of January, 1912, lobar pneumonia, chronic nephritis, tuberculosis of the lungs, each caused three deaths, while for February, 1912, we find nephritis causing five deaths, lobar pneumonia five deaths, and tuberculosis four deaths. In March, 1912, tuberculosis caused six deaths, chronic nephritis three and lobar pneumonia three. In April, 1912, tuberculosis caused nine deaths, chronic nephritis two deaths, and lobar pneumonia four deaths. In May, 1912, tuberculosis caused four deaths, chronic nephritis five deaths, and lobar pneumonia five deaths.

It will be readily appreciated from these figures that pneumonia, tuberculosis, and nephritis are the most prevalent diseases on the isthmus since the American occupation. In this respect it bears a close resemblance to the large cities of the United States. The increase in the deaths from pneumonia in 1911 compared with 1910, was due to its almost exclusive occurrence among the colored laborers brought to the zone from the West Indies during the year. This was the case in 1906 when an epidemic of the disease prevailed.

During the entire year of 1911, there were no cases of yellow fever, smallpox, or bubonic plague on the isthmus, although one patient with bubonic plague of the septicemic variety arrived from Guayaquil, Ecuador, and died in the Ancon Hospital, October 17, 1911. In January, 1912, the same could be said, although one case of yellow fever was removed from a vessel coming from Guayaquil, Ecuador, and isolated at Culebra Island quarantine station. In February, 1912, no cases of yellow fever, smallpox, or plague originated or were brought to the Isthmus. In March, 1912, a patient with yellow fever was brought from Guayaquil on the steamship *Chile* and died two days later at Culebra Island quarantine station. In April and May, 1912, there were no cases of yellow fever, smallpox, or plague originated or brought to the Isthmus.

The importance of these cases from Ecuador is readily appreciated when it is recalled that Ecuador furnishes most of the Panama hats and the chocolate beans (cacao) in commerce, and that dirty, unsanitary Guayaquil is the lone seaport of that country.

In segregating according to race, the *annual average* death rate per mille from disease for January, 1912, among employees was, for whites 7.57, and for blacks 3.98, giving a general average for disease of 4.86. These figures should not be confounded with those already given. In January, 1910, the annual average death rate per mille from disease among the whites was 1.95, and blacks 8.91, giving a general average of 7.21; in 1911 from disease among whites 1.89, and blacks 6.23, giving a general average of 5.07. For February, 1912, the death rate for whites was 4.61 and for blacks 7.43, giving a general average for disease of 6.66. In February, 1910, the annual average death rate per mille from disease among the whites was 5.20, and

blacks 4.59, giving a general average of 4.73; and in 1911, from disease among whites 5.67, and blacks 6.47, giving a general average of 6.27. The rate for January and February, 1912, has already been given. For March, 1912, the annual average death rate from disease among whites was 2.75, and for blacks 7.90, giving a general average of 6.57. For April, 1912, the annual average death rate from disease among whites was 3.74, and for blacks 10.48, giving a general average of 8.77. For May, 1912, for whites the death rate was 1.95, and for blacks 5.50, giving a general average for disease of 4.61.

External violence causes a great many of the deaths along the canal; thus in 1911 there were 165 deaths from this cause out of 539 deaths from all causes, about 30.3 per cent.; in January, 1912, there were fourteen deaths from violence out of a total of thirty-five deaths, or forty per cent.; and in February, 1912, seventeen deaths out of a total of forty-six, 39.1 per cent. In March, 1912, there were eight deaths out of a total of thirty-six, or 22.2 per cent. In April, 1912, there were eleven deaths out of a total of forty-eight or 22.91 per cent. In May, 1912, there were fourteen deaths out of a total of thirty-three or 42.42 per cent. Going over our same figures again we find in January, 1912, the annual average death rate per mille for disease was 4.86, and for external violence 3.24; while in February, 1912, the annual average death rate for disease was 6.66, and for external violence 3.91. In March, 1912, the annual average death rate from disease was 6.57, from external violence 1.88. In April, 1912, from disease the death rate was 8.77, and from external violence 2.61. In May, 1912, from disease it was 4.61, and from external violence 3.40. The death rate from external violence is influenced by direct avoidable causes, and there is no excuse for its periodic increase, although the several other departments of the canal commission call no attention to this when criticising the cost of maintenance of the sanitary department.

Pursuing this feature of the vital statistics a little further we find that among the employees of the Isthmian Canal Commission and Panama Railroad Company (both U. S. possessions), while the actual number of deaths from violence among the colored was greater than the white, the death rate per mille was 4.16 from external violence among the whites, contrasted with 3.11 among the blacks. Despite this, the argument is still used that the West Indian negroes stand the climate and the local diseases better than the whites, whereas it would appear that they stand injuries much better there as elsewhere.

Contrasting the cities of the Panama Republic with the Canal Zone we find other interesting facts. The population of Panama city is 46,555, and the annual average death rate is 31.27; the population of Colon 19,947, and the death rate 26.42; while the Canal Zone has 90,434 persons with an annual average death rate of 15.32. It is expected that the Canal Zone would surpass the cities in this respect, but it is a disappointment to find that Colon is so high in its mortality, especially since its streets are straight and wide and the town itself is comparatively recent.

The great bulk of the deaths on the entire Isth-

mus were in individuals under one year of age in 1911, something like 1,005 out of the total of 3,368. During January, 1912, the proportion was seventy-eight out of a total of 238, and during February, 1912, it was sixty-five out of a total of 219, in each event heading the list as the most common period for death. In March, 1912, the proportion was forty-nine out of a total of 195, and was the most common period for deaths. In April, 1912, the proportion was sixty-six out of a total of 288. In May, 1912, the proportion was eighty-eight out of a total of 251. Next in frequency, during 1911, was the period between twenty-one and thirty years, for which there were 684 deaths out of a total of 3,368. In January, 1912, the same period was second in frequency, with forty-six deaths out of a total of 238, while in February, 1912, it still held second place with fifty-five deaths out of a total of 219. In March, 1912, this period also held second place with forty-five deaths out of a total of 195. In April and May, 1912, this period held first place. Except in the case of the infants most of these deaths were among males, although the greatest mortality among females occurred at the same period.

The greatest number of deaths occurred among the native Panamanians, something like 1,369 out of a total of 3,368, and only eighteen of these occurred among the employees of the United States Government's industries. The Jamaica negroes rank second in frequency, numbering 699 out of a total of 3,368, of which only three were canal employees. The Barbados negroes rank third, with 405 deaths of whom 140 were canal employees. The natives of Colombia, practically Panamanians who are not loyal to the government, rank fourth, with 144 deaths of which only sixteen are canal employees. Spain is fifth, with 123 deaths of which only sixty are canal employees. Martinique is sixth, with eighty-four deaths, with twenty-eight among canal employees. The United States ranks seventh, with seventy-seven deaths of which only thirty-two were canal employees. If we rate the countries according to their death rate among the canal employees, they fall in the following order: Barbados, Jamaica, Spain, United States, Martinique, Panama, Colombia. This further serves to illustrate that the white man is better off in this country than the colored, if under sanitary conditions.

It is surprising to learn that there were only thirty-seven deaths from alcoholism in 1911 among the employees and civil population of which only four occurred on the Zone. Twenty-six of these deaths occurred in the city of Panama, and five in Ancon Hospital, close by. Among the employees we find ninety-three cases of alcoholism of which ninety-two were discharged, with one fatal. This seems rather meagre when the population is 156,936, and Colon and Panama have innumerable grog shops. Either the population stands it well or it is some temperance drink that is sold in these shops. The statistics on the alcoholic imports would be very interesting in this particular.

In going over the principal causes of death on the Isthmus, it was remarked that lobar pneumonia, nephritis, tuberculosis, and malaria were the most

common and occupied that order in frequency. It was not noted at that time, however, that the colored races were the victims in most of these cases; the most common disease causing death among the whites was malaria.

In deaths due to external violence, the colored races predominate again, although in railroad accidents the whites show their greatest mortality, although it is but twenty-three compared with fifty-three among the blacks. It seems scarcely worth while to save these men from the mosquito if they are to be mutilated for the sake of a few extra cars of dirt. Among the employees of the Canal Zone treated in the hospital of the Isthmian Canal Commission, there were 4,288 cases that might be attributed to violence received in the performance of work, of which patients 4,231 were discharged and fifty-seven died.

It is well worth noting in passing that the great bulk of disease occurred in 1911, toward the Panama side of the Isthmus. The death rate of the city has already been shown to be the greatest of any point along the isthmus, but we also find among the employees a greater amount of illness toward the Pacific end of the canal. This may be because the larger hospital is situated here, but is more likely the cause of the hospital being located here.

The diseases occurring among the employees are very interesting. There were sixty-eight cases of typhoid fever of which ten patients died. This is not necessarily a tropical disease, and it is strange that any should be found here with the great care that is exercised regarding the water supply.

Despite the infinite care that is taken to eradicate the mosquito, malaria still occurs in sufficiently large numbers as to render it a problem. For instance, there were 8,987 cases among the employees, of which number forty-one patients died.

Veneral diseases of all kinds amounted to 1,236 cases among the 48,876 employees, of which cases 440 were syphilis, with one death, 236 chancroid, and 560 gonorrheal affections. When the Isthmian Canal Commission hospital service is regarded as a clinic of 22,969 cases yearly, this is a very small proportion.

From the general appearance of the cities of Colon and Panama, especially the latter, the prevalence of these diseases must be greater than these figures would seem to indicate. There must be a great number of these cases that never come under the observation of the surgeons of the sanitary department. The same may be said of the cases of alcoholism, the statistics concerning which have already been given.

Diseases of the respiratory tract are extremely common and are responsible for a great many deaths, especially among the colored races. Among the employees of the commission there were 313 cases of acute bronchitis and eighty-two cases of chronic bronchitis. There were fifteen cases of bronchopneumonia with two deaths, and 359 cases of acute lobar pneumonia with eighty-eight deaths. Pleurisy occurred in 118 cases with three deaths. There were fifty-eight cases of other pulmonary affection (tuberculosis excluded) with five deaths.

Bright's disease (chronic nephritis) occurred in 129 cases with twenty-eight deaths, while acute

nephritis was observed in twelve cases with four deaths among the employees. There were also 202 cases of tuberculosis with fifty-six deaths in this portion of the canal population.

Regarding insanity, these patients are taken care of in the Ancon Hospital. There were thirty-one white patients and 267 blacks remaining from 1910, and the new admissions numbered twenty-one whites and 241 blacks. Of these, two whites and twenty-eight blacks died, thirteen whites and 146 blacks were discharged, and seven whites and seventy-two blacks were transferred. The remainder were still under observation January 1, 1912.

From the report it would seem that no cases of beriberi were observed among employees, although eighty-three cases of neuritis were seen in the hospitals. There were, however, forty-one deaths from beriberi among the civil population. This is extremely interesting. In 1907, one of the physicians (Ira A. Shimer, assistant surgeon, United States Army; *Journal of the American Medical Association*, March 2, 1907) noted that this disease was unknown on the Isthmus prior to 1887, which statement is corroborated by the records of the practicing physicians and the death records of the municipalities. In 1887, Chinese and African contract laborers were imported, and with them came this disease. Gradually the poorer classes, especially the laborers and colored people, became infected. From the beginning of the American occupation until 1907, the Isthmian Canal Commission had received 112 patients with the disease, of whom fourteen died. A local practitioner in Panama alone, up to this period, had treated 450 severe cases. The disease is an important one to the medical men in this country since it not only simulates, but often complicates malaria. In January, 1912, there were three deaths from this cause at Panama among the civil population.

It is the proud boast of the sanitary department of the commission that not a single case of yellow fever has occurred since May, 1906. While this is most creditable to the sanitary department, Colonel Gorgas (*Journal of the American Medical Association* for September 7, 1907) informs us that yellow fever was not always present, at least in a fatal form, on the Isthmus during the French régime. Thus in 1890, 1894, 1895, 1896, and 1898 no deaths were reported; in 1892 and 1893 only one death each year, and in the five consecutive years, 1892 to 1896, only two deaths (the same two, 1892, 1893). Previous to this period, 1881 to 1889, here were a great number of deaths among the employees of the French companies, due to an increase in the imported labor. Whenever a fresh batch of laborers was brought into the country the disease increased until the susceptible ones had succumbed or been rendered immune, when the percentage of the disease would drop to negligible proportions. For instance, in 1884 the French increased their laboring force to 19,000. In 1886 the deaths from this cause alone numbered 308.

The Isthmus of Panama has been a locality noted for the disease that thrived there ever since Balboa discovered the Pacific Ocean, and from the same period the possibility of a canal, natural or artificial, as been the dream of all nations. Consequently

all kinds of people, carrying all kinds of disease with them, have journeyed there to acquire the affections indigenous to that locality. But they never went back home with their newly acquired diseases; the Mt. Hope Cemetery bears mute testimony to that fact.

It was not until after the Panama railway was completed that there were any records kept of the mortality of this region. The history of this venture is well worth reading. It was begun in 1850 and finished in 1855, and at times the mortality was so great that it interfered with the construction work. Trains that could have been used in the work had to be used to transport the dead. One construction company, after the work had been given out by contract, imported 1,000 negroes, and within six months they had succumbed to disease. On another occasion it was necessary to import 1,000 Chinamen, and these likewise perished within six months. Many of the Chinamen committed suicide.

The French, perhaps, had the greatest difficulties on account of the larger number of unacclimated persons they brought to the Isthmus. During the period, 1881 to 1889, about 5,618 employees died in the hospitals, according to the hospital records. According to Colonel Gorgas, the French lost 22,189 laborers by death from 1881 to 1889, giving a death rate of something over 240 per mille in a year. Contrast this with the rate for the calendar year 1911 of 11.02 among 48,876 employees. The average force of the French company during the period 1881 to 1889 was about 10,200 men, and they lost 22,189; the Americans, on the other hand, have had an average force of 33,000 men since 1904, and have lost less than 4,000 men.

While these remarkable results constitute an everlasting monument to the technical skill and ability of the medical side of the War Department, they also laud the business ability of Colonel Gorgas and his staff, as these changes have been brought about, and these good conditions maintained, at an average annual expenditure of \$365,000 (according to Colonel Gorgas), covering a population of about 150,000. There should be no criticism of this feature of the canal work, although there seems to be a tendency to regard this as extravagant. Comparison with the health budgets of the larger American cities will show it to be in the line of real economy, as the money brings the results for which it was intended.

For the year 1911 (1912 report, p. 31), the net cost of operating the hospitals was \$578,164.33, and of the sick camp \$22,144.79, making a total of \$600,309.12, somewhat higher than the figures given recently by Colonel Gorgas in a recent article (*Journal of the A. M. A.*, March 30, 1912) already cited. He stated that the expenses of sanitation have amounted to \$365,000 per annum, but did not state whether that included hospital service. Doubtless they are kept as separate expense accounts. However, the higher figures are not too high, since the gross cost per capita in the hospitals was \$1.21 per diem, and in the sick camps \$0.44 per diem. Some patients paid and some were paid for by the Panama Republic, so that the net cost per capita was \$0.97 per diem in the hospitals. It would be very

difficult to conduct such a large clinical service (51,679 cases) anywhere at such a moderate cost.

An echo of the large number of saloons in Panama and Colon is doubtless to be found in the statistics, covering the employees sick in their quarters. There were 16,680 days scored up against the whites, compared with 2,384 days against the blacks. The consolidated hospital report showed 18,594 white patients sick, compared with 15,602 colored patients. The consolidated sick camp report showed 6,205 whites compared with 12,091 blacks, while the consolidated dispensary report showed 244,059 white patients compared with 269,960 colored patients. Among the nonemployees, 72,672 whites and 56,394 colored patients were seen at the several dispensaries. The days lost in the quarters for illness not sufficient to consult dispensaries or hospitals and be properly classified certainly seem to point to a very obvious cause.

One of the greatest features of Colonel Gorgas's work is shown in the fact that the average number of employees constantly sick, per mille, is 45.88 for the white and 17.30 for the colored population.

The surgery performed in the several hospitals is quite extensive, numbering 7,701, and in only seventy-nine instances did the patient fail to recover. These operations ranged from the simplest minor procedure to excision of the tongue, thyroidectomy, and major abdominal operations. In the eye, ear, nose, and throat clinic, 2,407 additional operations were performed without a single death.

From the foregoing statistics it may be readily seen that the health conditions of the isthmus compare favorably with almost any other industrial section of a like population; indeed it is vastly superior to many. When it is considered that the sanitary department covers so many fields the expense is trivial. No other health department exercises such rigid or conscientious surveillance over the people in its charge. Possibly when the canal is completed and the sanitary department has assumed an automatic character, its several heads could be placed in charge of our larger American cities with the same authority vested in them as on the Canal Zone. Perhaps we may then persuade our own people that flies and mosquitos are not necessities and that their removal is not an interference with any one's constitutional prerogatives.

1601 MOUNT VERNON STREET.

THE FEE BOOK OF AN IRISH PHYSICIAN OF THE SEVENTEENTH CENTURY.*

By JAMES J. WALSH, M. D., LITT. D.,
New York,

Dean, Professor of the History of Medicine and of Functional Nervous Diseases, Fordham University School of Medicine.

Nearly fifty years ago a paper was published in *The Proceedings and Papers of The Kilkenny and South-East of Ireland Archaeological Society* (Note Vol. V, New Series, No. 55, January, 1867) with the title *The Fee Book of A Physician of the Seventeenth Century*. The article was written by Mau-

rice Lenihan, author of *The History of Limerick* and other books on Irish history and rather well known as a careful student of Irish archaeology. I know of no document that brings us so close to the actual practice of the early seventeenth century as this. The first entries in the fee book are for the year 1610. Harvey was doing his work at this time and had already made the discovery of the circulation of the blood, but did not publish it until nearly ten years after. His discovery did not influence medical practice for half a century after his time and we might be apt to think that the physician of those days would keep a very different diary from one of the more modern time. It is surprising, however, how closely the practice of those days assimilates that of our own and how much even the onomatology and modes of expression with regard to the diagnosis of disease are like those that would be employed at the present time.

The author of the fee book was Dr. Thomas Arthur, of the family of FitzWilliams, though he seems to have been known by his name of Arthur, who, as he notes himself, was born on the eve of St. Catherine the Martyr, November 25, 1593. After his preliminary studies at home he could not continue with any professional studies in Ireland because the penal laws so regulated admission to the universities that he would have had to take an oath falsifying his conscience if he wanted to remain a Roman Catholic. His family had been Roman Catholics prominent in Limerick for nearly five centuries before this time for we have the record of the Arthurs in Ireland a little before the middle of the twelfth century and they became established in Limerick about the middle of the thirteenth century when one of the house came there. They continued to fill high positions in the church and in the corporation of Limerick for the six centuries since.

While young Arthur might not study in Ireland or England because of the penal laws he could, owing to the condition of his family, obtain his education abroad, and many of the sons of the better classes of this time were educated in France and Spain, at Paris, Bordeaux, and Salamanca. At home in Ireland he would not be allowed to practise law, nor to enter the army or navy because of the penal laws, but the practice of medicine was not barred to him. As a consequence many of the ambitious young Irishmen of this time took up medicine and occasionally did not return to their native country to practise, but reached distinction on the continent. There are Irish names of professors of medicine at Paris and Salamanca during the seventeenth and eighteenth centuries and some of them obtained the most lucrative posts of the time. O'Higgin in the sixteenth century was royal physician in Spain in the time of Charles V. Quinlan, a Carrick-on-Suir man, was physician to the emperor of Russia later, and according to tradition realized a great fortune. Dr. Thomas Hearn at Waterford was physician to Godoy, the Duke of Alcudia, at the end of the eighteenth century. There is a tradition that he resigned his post when asked to perpetrate a crime that might have been cloaked under his professional practice.

Doctor Arthur studied at Bordeaux, but after re-

*Read before the Celtic Medical Society of New York, April 21, 1912.

ceiving his mastership there he went to Paris and was admitted to the roll of the masters of the medical faculty of that university. The academic custom with regard to the nations is illustrated by the fact that he became a member of the "most constant German nation" at the university, for it was the custom to group among the Germans not only those from what we now call Germany but also from Great Britain and Ireland.

In one thing the old Irish physician differed quite markedly from his modern colleague for he kept his case books in Latin. The Latin is rather good as modern Latin goes. It is naturally professional in character and smacks of the medieval rather than the classic language, but it is clear, concise, and definite. Probably the reason for the use of Latin was in order to prevent his fee records and his accounts of cases from being read by any curious person who might by chance get hold of them. They were thus safe from the intrusion of any but a professional man. The problem of such becoming secrecy is rather interesting in the modern time where many physicians have a secretary who knows much about their affairs. The English common law is rather strict about any possible leakage of information that has been confided by patients to their physician, and perhaps there has been some lessening of professional care in this matter in recent years. It must not be forgotten that a few years ago the highest British court mulcted a distinguished physician who was at the same time a Peer, in heavy damages amounting to about fifty thousand dollars for a violation of professional secrecy though only to his wife and with the best of intentions so as to prevent possible syphilitic contagion during social relations.

The very first entry in the book on the 20th of May, 1619, is with regard to one Charles Burke who was freed from a simple gonorrhea for which he paid a fee of two pounds. The fee for the whole treatment was apparently collected in advance. Occasionally one hears it said in our time that this fee method simplifies the relations of physician and patient in such cases. It is usually said that in Shakespeare's time money was worth about seven or eight times as much as it is at the present time. This date is within three years of Shakespeare's death, so that the same ratio should hold except that it is usually considered that in Ireland the purchasing power of money was even a little higher than it was in England. Fifty dollars or more is not bad pay for the treatment of a simple gonorrhea. As I pointed out in an article in *The International Clinics of Physicians' Fees Down the Ages* (*International Clinics*, IV, Series 20), the fees of physicians, even from the time of Hammurabi, in whose code the regulation fee for a capital operation as performed upon a nobleman was about the equivalent of a workman's wages for a year, have always been worthy, whenever the standard of professional dignity and of medical education has been maintained.

The beginning of his list of patients and their payments will be interesting because of the terms he uses for our familiar diseases. After the Mr. Scharolus Bourk who was treated and freed from simple gonorrhea for two pounds on the twentieth

of May there comes one Anasthasia (*sic*) Ronan, a widow who was freed from orthopnea and paid six shillings eight pence therefor. Then there was one Gualterus (Walter) Meroney who *escaping* a putrid sore throat paid eight shillings. (They were evidently threatened with diseases even in that early day.) Then there is the cure of a boy from a febrile disturbance of the liver with obstructions; then a pleurisy, then a bradypepsia, a sluggish digestion.

Then there is the story of a patient in detail with the account of the autopsy in order to show that he was right and the other physicians in the case were wrong. According to this rather interesting story, "Anna Gould in her fiftieth year of age and nineteenth of marriage to a second husband, though sterile, at length conceived and I told her from the evident signs of conception that she was pregnant. Some of my seniors in medicine, however, in whom she had greater faith than in me treated her for ascites with hydragogue drugs and killed her in the eighth month of her pregnancy. At the autopsy which I succeeded in obtaining I took from her uterus a baby girl, dead but perfectly developed and proved my diagnosis. For this I obtained not a little praise."

Then he treats diarrhea and dysentery and a warm dyscrasia of the liver and then another rather warm dyscrasia of the liver with hectic which had almost brought the patient into marasmus. Then there was a miliary abscess in which the mouth contracted caries. Then there was a stillborn child for which he uses the Greek term *ateknos*. Then there is an entry not so easy to understand with regard to a sufferer from blindness due to suffusion. Next comes a febrile sore throat, then a stomachic cardialgia which had been brought on by torrid bile, whatever that may mean. Then there was a palpitation of the heart and a woman freed from hysterical hydrops, and a stomachic cardialgia, then a cephalalgia. Then there was a young girl from the country whose name evidently he did not get, but whose fees amounted to one pound, who fell into a scirrhus of the liver from metastasis of her monthlies. Then there was an hysterical wife. Then the woman who had suffered from headache a few days before, came back with a slight fever. Then there was another case of fever and a boy freed from round worms. Then another stillbirth, and lientery, then ophthalmia, pleurisy, and then a girl with a boil on her arm which almost took away her life and only with the greatest difficulty was saved. Then there was a sufferer from scotoma, one from elephantiasis, one from hypochondriacal melancholy, and then a fisherman caught by an anchor.

Then there is another case to which he devotes a paragraph instead of the usual single line of entry. The patient was one William Greatrikes, whose abdomen for twenty years had been so distended daily by hypochondriacal flatus (there's an expression worth noting) that for an hour every day he remained immobile and without being able to talk whenever the paroxysm took him, "until by the help of nature diffusing his flatus he uttered innumerable breakings of wind before and behind and at length his abdomen reducing its swelling he was able to go on with the ordinary duties of life, until another

paroxysm on some other day at an uncertain hour would come to him. On the persuasion of Sir Donatus O'Bryen, the Count of Thomond, I undertook his cure and happily brought it to a successful result at the end of two years. As his preliminary fee he gave me on the 20th of November, 1619, two pounds." This William Greatrikes was the grandfather of the famous Valentine Greatreakes (differences of spelling meant little at this time) "the Stroker" who went around England at the end of the seventeenth century curing nearly everything under the sun and a few other things beside, by stroking with his hands over the affected part. He owed something of his success to the fact that during the Parliamentary period between 1650 and 1680 there was no king in England to carry on the custom of touching for various ills, and Greatreakes declared himself divinely commissioned in a dream to take up this work. This light on the family shows it to have been both nervous and nervy.

Some of the diagnoses entered here are interesting because we would like to be sure just what was meant by the terms. *Phrenitis* probably means some form of meningitis, but just what *nephriticus* (suffering from kidney disease) two centuries before Bright's paper was written meant, is hard to say. Then there is a curious word *bradypspheticus*, probably some form of shortness of breath. *Peripneumonia* is the *peripneumony* of the English writers of a century ago and was probably pleuropneumonia though more than likely it was usually one of the multiform symptom complexes associated with tuberculosis. Occasionally there is some disease the subject of deep modern study, as pregnancy complicated by icterus from which the doctor is proud to say that both mother and child were saved. There is the account of an emetic effusion of antimony followed by the dejection of a tape-worm thirty feet long, from which a male patient had suffered dire torments for a long while. There is the case of a boy (suffering apparently from Pott's disease, but Percival Pott did not live to give his name to the disease until well on into the eighteenth century) one of whose spinal vertebrae slipped backward and brought about paraplegia. The little fellow died. As the good doctor gets busier we get less and less account of what was the matter with his patients, and the entries refer only to the date, the name, or the patient for whom some one has paid money. All the entries continue always to be in Latin.

There is another way beside the use of Latin in which it seems likely that Dr. Thomas Arthur's fee book differs from that of the modern physician. The young man who was about twenty-six years old when he began his practice, who had received his education at the University of Bordeaux, and been admitted to the roll of the masters of the medical faculty of Paris, opens his account book with a devout prayer before which he places a cross and the names of the Holy and Undivided Trinity, Father, Son, and Holy Ghost. The initial paragraph is in English, almost the only piece of English in the book. It runs as follows in the quaint spelling of the original which is commended to the attention of those who resist spelling reform be-

cause it would separate us from the language and the spelling of our forefathers:

"Thomas Arthur Fitz-William, Doctor of Physick, came from Paris to Lymerick, on the 14th day of May, in anno Dei 1619. Since then God blessed him in his practice, by which he gott what feese hereafter enseweth, for which, and the rest of God's bountifull benefitts conferred upon him, he always rendereth most humble and hartie thanckes to the Euerfloweing Offspring of all goodnes, God."

The amount of money collected each year is carefully added up and entered in his journal. He always takes the occasion of the annual edition to return special thanks to God for all his benefitts. The journal begins on the 20th of May, 1619, and the first annual summation is made on the 24th of March of the same year, 1619. This would seem surely to be a mistake for 1620, but if so he would appear to have been very persistent in his mistake for all during January and February as well as March he makes the date 1619. The puzzle is easy of explanation to anyone who recalls that until well on in the eighteenth century it was the custom throughout Europe to begin the year, not as we do now on January 1st, but on March 25th the day on which is celebrated the Annunciation of the Blessed Virgin and therefore the conception or beginning of the human life of Christ. On the eve of the Annunciation then, Doctor Arthur says:

"The sum of the honoraria of the past year is seventy-four pounds, one shilling and eight pence, for which and for the other immense gifts conferred on me though unworthy by the omnipotent God I return thanks because he has deigned to bless the beginnings of my medical practice and I ask Him that he may deign to rule and sanctify all my other actions to the glory of His name through Christ Our Lord Amen."

In about ten months he had made the equivalent of about \$375 in our money, though in buying power this was probably the equivalent of some \$2,000, probably more in our time. In his second full year for which he gives thanks in like manner, he received seventy-five pounds, eighteen shillings. One would expect somewhat more than this in his second year. In his third year, 1622, though he gives thanks to the Divine munificence as before for all his benefitts, the sum amounted to only a little over forty-six pounds. In 1623 it rose to fifty-eight pounds; in 1624 it was seventy-one pounds; in 1625 it had reached over eighty-six pounds; in 1627 it was one hundred and five pounds. This was the year after he had effected the cure of Archbishop Ussher. In 1628 the amount rose to one hundred and forty pounds. The following year it fell again to about one hundred and ten pounds and then below ninety pounds. In 1632 it rose to nearly three hundred pounds, to sink again the following year to somewhat less than two hundred and fifty pounds. His best years after this ran nearly up to three hundred pounds and the average was about two hundred and fifty pounds. For many years he must have made the equivalent of some \$6,000 to \$7,000 a year, comparing the buying power of money in both periods.

Doctor Arthur seems to have been rather proud of his catholicity, though he felt that it somewhat

interfered with his practice. The wealth of the country was largely in the hands of Protestants and as a rule they would not employ a Catholic physician so that he had to do the best he could among his own people, taking moderate fees and working ever so much harder than would have been necessary had he been of the faith of the wealthier. He was rather proud, however, of an opportunity to show his skill on a prominent Protestant prelate when some of the best known physicians of his own church had failed to relieve him. It is one of the few long stories, entries of which we have in the book and probably the longest of them all. It came when he was about thirty-three years of age and added greatly to his reputation. The entry in translation runs as follows:

Then there came to me dominus James Ussher, doctor and pseudo-primate of Armagh, lately returned from England where he had suffered for a long time from a serious illness to which in spite of the fact that the royal physicians had given him every attention and charged him high fees they had been unable to bring him any relief and therefore he sent for me to come to see him. I reached him at his house at Drogheda on the 22d of March. Then having heard the history of his illness and having looked over the prescriptions of his very distinguished physicians and given due consideration to the symptoms and their development throughout the whole course of his disease, it seemed to me that I could recognize the cause of the dubious yet constantly worsening disease which had been hidden from many of my distinguished colleagues. Following out my conclusions I found after a short trial of remedies that I could bring about improvement and I confidently took up his cure. My hopes were not disappointed. The grave and obstinate malady which had eluded all the efforts of my distinguished colleagues in England in a man so eminent and conspicuous for his erudition and which now yielded to my efforts made me celebrated and welcome among the English though before this because of my catholicity I had been thoroughly detested.

Things medical were not nearly so different from what they are at present as we might readily presume them to have been nearly three centuries ago, and human nature was just the same. It is this that makes the dry bones of the old fee book live again and gives us a vivid picture of the physician who kept it.

110 WEST SEVENTY-FOURTH STREET.

A HISTORY OF SURGICAL HEMOSTASIS.*

By W. C. BORDEN, M. D.,

Washington, D. C.,

Professor of Surgery, George Washington University; Surgeon in Chief, George Washington University Hospital.

In reviewing the history of human progress, the first impulse is of wonder at the slowness of the human mind in grasping that which later appears to be the simplest of matters. In nothing is this more evident than in the development of our knowledge of what is now the simple procedure of closing a soft, easily compressed tube by tying a thread about it, i. e., the ligation of a bloodvessel.

Yet for uncounted hundreds of years this simple operative procedure was not known, and, after being known, other hundreds of years passed before its use was accepted by the surgical mind and practised by the surgical hand.

In going over the history of hemostasis, one is impressed by the fact of how closely the development of the simple idea of ligation is in accord, not only with the growth of medical, surgical, and general scientific knowledge, but with the whole history of mankind.

In all human affairs knowledge has been slow in coming, and the application of that knowledge—wisdom—has almost, if not always, been much slower. But that attitude of mind which criticises the failure of our predecessors to grasp that which is obvious to us, is seen, when analyzed, to be based upon a concept of present knowledge, and does not take into account the limitations under which our forbears worked.

We think with minds alive to facts of which our fathers never dreamed, and it is difficult for us to separate our conclusions from the things we know and ideate matters as they appeared to minds destitute of facts evident to us. Therefore, to understand the development of hemostasis we must comprehend the outlook of the forefathers of medicine and surgery. "We must pick up the round bowed spectacles of our forbears and see things as they saw them." Indeed, to overlook the history of hemostasis from the time of the first faint conception of how the outflow of blood may be checked, up to our present complete knowledge, we must go far back to those long years when we cannot look even metaphorically through our forbears' spectacles, but must try to see the human body as they did through untrained eyes, unassisted by any one of our present day multitudinous aids to vision.

We must first look back of the days of Aesculapius and Hippocrates to those prehistory times, during which man struggled in his upward way through the earlier unknown ages of primate development and thereafter through his ages of stone and bronze.

Long after those earlier ages, man had no knowledge of the circulation of the blood, no concept of an artery as a blood carrier, but believed rather as the Greek origin of the word artery implies, that the arteries were air ducts, probably ramifications of the trachea, and this belief was confirmed by what was considered accurate observation upon cadavers of men and animals in which these channels were found empty of blood and apparently containing air; while the large root branch (aorta), as then roughly dissected, was seen to be closely related to the lungs and in fact connected with them through the heart and pulmonary artery. Naturally, the earlier observers dissociated the arteries entirely from the blood and its escape, and supposed that inspired air after entering the lungs was disseminated through the body by the air tubes or arteries.

In those early days there remained for consideration as blood carriers the veins, many of which are superficial, and the escape of blood from these was readily seen. Moderate pressure easily controls such hemorrhage, and this fact being evident and easily comprehended gave logical rise to what was undoubtedly the first comparatively recent (for in considering the development of mankind we must consider the Greeks and Hindus as recent) ideation of the fact that pressure can control hemorrhage at least to some extent.

*Read before the Medical History Club of Washington, D. C., January 6, 1912.

tion of the limb, the whole procedure had the mechanical essentials of the most approved modern methods of hemostasis in amputation.

Further, Archigenes did not limit the indications for amputation to gangrene alone, as had been previously universally done, but extended them to such shattering of the limb as would result in gangrene, extensive wounds, cancer, and ulcers (Wernher). In other matters he showed remarkable acumen, especially in his analysis of the varieties of the pulse and pain.

Heliodorus (about A. D. 100), a famous surgeon, left some fragmentary writings upon amputation without ligation of the vessels. In amputations of the leg, he recommended division of the skin in front and sawing of the bones before division of the vascular soft parts at the back; the hemorrhage was then arrested by a firm bandage.

We now come to Claudius Galen (A. D. 131-201 or 210), who was born at Pergamus in Mysia, only 155 miles north of Cos, where was located the family medical school of Hippocrates; but who, after study at Smyrna, Corinth, and Alexandria, spent the productive years of his life at Rome, doing most of his work during the reign of the philosophic emperor, Marcus Aurelius. Galen distinguished himself by advancing a complete Eclectic System of his own, which for more than a thousand years held undisputed sway in medicine and surgery. In the twenty-sixth chapter of his fifth book is the remarkable passage in which he advises that the bleeding from a wounded vessel, if it cannot be otherwise restrained, be controlled by two ligatures, placed one above and the other below the bleeding point. As Galen was a gifted savant rather than a practitioner, it may probably be well assumed that this statement of his is a record of a procedure already known, as is shown by the ligation in amputation of Archigenes.

But, although Galen was an unquestioned authority for nearly 1,500 years, his advice as to the control of hemorrhage was overlooked and not followed; the actual cautery, styptics, and bandages held sway until the time of Paré and even after his time.

From time to time during the centuries, from Galen to Vesalius and Paré, that period which may be called the era of Galenic ascendancy, practitioners and writers record some advance or improvement in medicine and surgery. The most notable among these is Antyllus, in the third century, famous for his operation for aneurysm, the first recorded operation for that condition and which is still described in surgical textbooks and occasionally practised in a modified form. Antyllus operated by ligating the vessel above and below the aneurysm, incising and packing the sac, which then healed by granulation. The modern antylic operation differs only in that the sac is excised under aseptic precaution, the wound closed and allowed to heal by first intention.

Antyllus also recommended for certain diseases of the eye placing two ligatures about one of the veins of the eye, division of the vein between the ligatures, and finally tightening the ligatures after sufficient blood had escaped.

Philagrius, in the fourth century, describes an operation for aneurysm resulting from unskillful phlebotomy. He exposed the artery, placed two ligatures above the sac, divided the artery between them, opened the sac, removed the coagulated blood, applied two ligatures below the sac, divided the artery between these, and left the sac to suppurate. The enlightened and progressive mind of this surgeon is shown, not only by devising this operation, but by the fact that he protested against the use of magic words in the preparation of medicines, a superstition prevalent before and after his time.

In the encircling band of Archigenes for amputations, and the ligating of Antyllus for aneurysms, we see the beginning of the idea of hemostatic control as a *preventive* of hemorrhage by closure of the vessels before they are severed, which method was to displace the ancient idea that hemorrhage could be or was to be checked only after the vessel was cut.

But, following the time of Galen, all through the middle ages, while there were glimmers of light the main service rendered to medicine and surgery was the preservation of the works of the ancients. In this respect the Byzantine Greeks, the monasteries scattered throughout Europe, and the Arabians rendered particular service.

During the first half of the middle ages, science was chiefly fostered by its founders, the Greco-Romans, and by the Semites. Contemporaneous with the vast achievements and conquests of the followers of Mohammed, Arabian science and civilization rose like a meteor in the seventh century, lighted for five hundred years the long darkened Orient, and in its westward course illuminated the Occident before its final extinction. Notwithstanding its meteoric brilliancy, Arabian medicine shed little additional light upon the problem of the control of hemorrhage. Of the Arabian surgeons, two, Rhazes and Albucasis, deserve particular mention.

Rhazes (Mohammed ebu za Karisah abu Bekr er Razi, A. D. 850 to about 923) was a philosopher and medical writer of great reputation, whose *Aphorisms* were used for an extremely long period as a *vade mecum*. Like the Arabian school generally, he was largely a follower of Galen. Like Galen, or possibly quoting him, Rhazes recommended ligation of arteries above and below the bleeding point, but, what is apparently more original, he recommended complete severance of a wounded vessel, so that its cut extremities might contract.

Albucasis (Chalaf ben Abbas Abul Casim el-Zahrewi, 936-1013 A. D.), the most important to surgery of the Arabian celebrities, and whose writings translated by Channing, of Oxford, contain the most complete view there is of the knowledge of surgery as it then existed, although he enthusiastically extols the surgical virtues of fire and used the cautery and styptics to suppress hemorrhage, it appears that he also practised complete division of the vessel, and even the ligation. Also, he is apparently the first to remark the occlusion of a divided artery by a coagulum.

After its meteoric rise and ascendancy, Arabian intellectual supremacy declined and there gradually rose on the ruins of Greco-Roman civilization the

foundations of the edifice of our modern civilization, in whose temples of science the altar of knowledge has for its cornerstone investigation and experiment.

In the early middle ages the flame on the altar of knowledge was kept alive mainly in the monasteries scattered throughout Europe.

Everything in the Christian West which could be called medicine fell into the hands of the ministers of the Church, especially the monks. The monks, from their contact with the East during the Crusades, brought back something of Arabian learning and to this were added the tradition and writings preserved in the monasteries north of the Mediterranean.

During the first thousand years after Christ the monks practised both medicine and surgery. In fact to a bishop, Paulus of Merida (530-560), is due the honor of having performed the first Cæsarean section upon a living woman. Later the practice of medicine and surgery was first forbidden the higher clergy by various edicts published from 1131 to 1215, and afterward the lower clergy were especially forbidden to practise surgery by the Council of Le Mans in 1247.

Through the preservation and practice of medicine by the ministers of the church naturally arose the early schools of medicine associated with the monastic schools or universities. Of these the medical schools of Salerno, Bologna, and Padua in Italy, and of Montpellier and Paris, in France, had far reaching influence upon the progress of medicine and surgery.

In the thirteenth century the writers of professors in these schools show, for the first time in the twelve hundred years following Galen, indication of a revival of medical and surgical advancement.

Bruno of Longoburgo in Calabria (about 1252), professor at Padua, compiled a *Chirurgia magna* and a *Chirurgia parva* from writings of the Greeks and Arabians. He notices amputation in gangrene of the limbs, in which he follows Abucasem and Paul of Aegina. He is acquainted with a hook for aid in the ligation of bleeding vessels and states that it is difficult to stop hemorrhage from pulsating vessels (arteries) but easy to stop it from nonpulsating vessels (veins).

William of Salicet (1201-1280), a professor at Bologna and Verona, recognized arterial bleeding by the spurting stream of blood (Albert).

The creator of surgery in France was Lanfranchi, of Milan, a pupil of William of Salicet, who migrated first to Lyons, then to Paris (1295), where he joined the College of Surgeons founded eighteen years before by Pitard, who had accompanied St. Louis to Palestine as his surgeon.

This college was under the protection of St. Cosmos and St. Damian, two practitioners of medicine who suffered martyrdom during the reign of Diocletian, and was the alma mater of the regular surgeons, or "surgeons of the long robe," who were the strict disciples of Galen and bitterly resented the encroachment of the barber surgeons, or "surgeons of the short robe." It was known as the College of St. Côme. From the time Lanfranchi joined it, it attracted many pupils and it maintained its inde-

pendent existence for several centuries, alongside the medical faculty of the university.

Lanfranchi was the first surgical writer of this school and a surgeon and teacher of distinction as well. He delivered lectures and took his pupils to the bedside of the sick and to operations. It is worthy of note that Lanfranchi is the first writer to describe healing by "first intention." From his "major" and "minor" surgery, it appears that he was acquainted with the difference between arterial and venous hemorrhage (the former steady, the latter by spurts), and that he employed styptics, compression with the finger for hours, and also ligation.

Guy de Chauliac, physician to Pope Urban V, one of the earliest heralds of modern surgery, wrote in 1363 his pioneer work, *Chirurgia tractus septem, cum antidotario*, a treatise which held exclusive sway in France for many decennia. In this he divides hemorrhage into arterial and venous. To arrest arterial bleeding, he recommends styptics, stitching together the edges of the wound, division of half severed vessels, the actual cautery, and ligation.

Thus up to the sixteenth century, while there were flashes of true light upon the problem of hemostasis, the light flared but intermittently, and was neither great enough nor lasted long enough to dissipate the darkness of tradition. It remained for Ambroise Paré, born near Laval, France, about 1517, and apprenticed to a barber surgeon, and who became the surgeon and counsellor to four kings and the father of modern surgery, to light the torch which dissipated the darkness which for centuries had obscured the problem of hemostasis.

(To be concluded.)

SOME EXPERIENCES WITH THE LESSILUR-PIREY TEST.

By E. G. R. WILLIAMS, M. D.,
Paris, Illinois.

The tuberculous albumin reaction, or the Lessilur-Pirey test, should, if my observations are duplicated, prove one of our priceless additions to the ever increasing wealth of practical sputum methods. Its simplicity appeals at once to the general practitioner, especially if he has met difficulty in attempting to identify the tubercle bacillus in his sputum specimens. This new test being essentially a chemical reaction, does not require the use of a microscope or of other apparatus than a test tube, some physiological salt solution, funnel, filter paper, and a few drops of nitric acid.

During the past six months, I have applied this test as a routine procedure to all sputums examined, provided a sufficient amount of the sample was available. Of these, the results of fifty-one could be checked with clinical as well as microscopical findings. In other words, some knowledge of the symptoms and signs were held in each case; and a diligent search was made for the bacillus of Koch and other suspicious microscopic elements.

I have concluded that while the positive test does not signify that every sputum is tuberculous, such

would seem to be the case if the clinical data put the patient into the chronic class. In other words, the test is sometimes positive in acute bronchitis, and usually positive in croupous pneumonia. Parenthetically, I might add that albumin may also be found in the sputum in pulmonary edema, but the cardiac or renal conditions underlying have usually been suspected before the sputum is noticed.

On the other hand, I have been unable to find albumin in chronic bronchitis, bronchial asthma, and emphysema. In this series of cases, I met no sputums of bronchiectasis, gangrene, or nontuberculous abscess; and am, therefore, unprepared to give advice concerning the possible presence of the reaction in such cases. However, the differentiation between chronic bronchitis and pulmonary tuberculosis being the usual one, I am inclined to predict for the albumin reaction an important future.

The next question which, perhaps, comes to the mind of the practitioner is, How early in the course of the disease does the positive Lessliur-Priley test appear? I am inclined to believe the reaction is not an extremely early one so far as the disease itself is concerned, but it is probably present just as early as symptoms are noted. It is fairly clear that it appears before the tubercle bacillus is loosed into the sputum or at least before it may be easily found by the average laboratory worker, perhaps invariably precluding pulmonary ulceration. These are all important points in the diagnosis of early or uncomplicated, if not incipient tuberculosis and speak for the possibilities of the test.

TECHNIQUE OF THE TEST.

I am inclined to modify the original test by substituting sulphosalicylic acid for the heat and nitric acid when testing for albumin. This is important if the amount of albumin is small, as the sulphosalicylic acid is a more delicate reagent. In a large test tube, five drachms of physiological salt solution, five c. c. of sputum, and five drops of acetic acid are well shaken for five minutes. It is easy to commit to memory this technique when the quantities are thus remembered in fives. It is not necessary that these measurements be accurate. The mixture when homogeneous, is filtered through paper and the filtrate is tested for serum albumin by any of the methods used in the identification of albumin in urine. As has been stated, I believe the sulphosalicylic acid test to be more delicate than the heat and nitric acid method and, therefore, more valuable.

It is well to keep in mind that the test ignores the possible presence of the tubercle bacillus; and that neither the application of the technique nor the interpretation of the reaction takes into account the presence or absence of this germ. I have deemed it advisable to sterilize in boiling water, all of my glassware—a funnel and two test tubes—after each operation, and to burn the filter paper. It is also best for the operator to wash his hands thoroughly after the test and to wash off the laboratory table with one to 500 mercury bichloride solution. In other words, the test, though a strictly chemical one, implies from its very nature, bacteriological cautions and technique.

REPORT OF EXAMINATIONS.

I am giving below the tabulated results of my findings. Of the fifty-one cases where the clinical and microscopical data were obtained, the symptoms in forty-three were of a chronic nature:

Reaction.	Number.	Diagnosis.
Positive to albumin test alone.....	7	Probably all tuberculous.
Showing <i>Bacillus tuberculosis</i> alone.	0	
Positive to both.....	27	Tuberculosis
Negative to both.....	9	Probably none of tuberculous origin.

CONCLUSIONS.

1. The positive albumin reaction in a sputum where the disease is not acute, points very strongly to the presence of pulmonary tuberculosis.
2. The test is of little or no value when attempting to differentiate acute bronchitis or pneumonia from galloping consumption.
3. A sputum from pulmonary edema secondary to renal or cardiac difficulties, may show albumin but the differentiation from phthisis should have preceded the positive test by many months.
4. Even though albumin be found in gangrene and bronchiectasis, these conditions are not usually mistaken for early tubercu'osis.
5. A positive reaction invariably rules out chronic bronchitis, and as this condition is likely to be mistaken for tuberculosis, the test should prove valuable.
6. The reaction, though not an extremely early one, seems to be present as early as tubercle bacilli are loosed into the sputum and in some cases precludes the latter.
7. It is my belief that sulphosalicylic acid is a more delicate reagent and promises to be of more service than heat and nitric acid.
8. The test, though a chemical one, is subject to bacteriological precautions.
9. This test will doubtless find future favor with the general practitioner.

109 EAST COURT STREET.

A POISONED BLOOD STREAM.

By L. A. MERRIAM, M. D.,
Omaha, Nebr.

That some of the views herein expressed are contrary to those of the general medical profession, and are subversive of the vital and essential superstitions of many of the great teachers in our medical schools, I am well aware; that they will bear the closest scientific scrutiny and, in the future demonstrate their truthfulness, I fully believe. We must remember that the truths of Nature do not constitute a sealed book. Our modern monistic scientific philosophy teaches us that in Nature there is not anything static, fixed, or final, but that mutation and process characterize all that is, for it belongs to the very nature of the absolute to develop and grow. Hence truth is an unfolding thought, and what appears as truth to-day, may be laid aside as a superstition in the next century, just as what was called truth a hundred years ago, is now termed a superstition, though still believed by many who do not

possess the facts, or who for personal gain or willing ignorance do not know, and do not want to know the facts on which these truths are based, or by which these truths are proved. Man can see and understand just as much as he has the capacity to see and understand, and no more. Humanity, as a part of Nature, and like Nature everywhere, is ever progressing. Under the air the mountains are wasting away, under the sea the world is building anew, so in social, ethical, and other fields, as in material, eternal change is taking place. We have left the days of exclamation and authority, for the new days of interrogation and experience. So we shall endeavor to give a few hints, first, as to what constitutes disease, second, as to the principal causes of disease.

What is disease? This question has been asked and answered in many ways during the ages past. It was thought to be an evil spirit sent by the devil, and was to be driven out by the prayers of the clergy, by the laying on of hands, and by a direct appeal to the gods. It was held to be an entity which had gained an entrance to the body, and must be eliminated by emetics, purgatives, blisters, and bleeding. It was held to be a punishment, sent direct by the Almighty, and to be endured or atoned for by sacrifices and burnt offerings, to appease an angry God. Many other fanciful ideas, too numerous to be mentioned, have been held, and though long since proved to be untrue, yet we often meet with people who still cherish false opinions, for the errors of the past, in all departments of the world's progress, linger still in the minds of the people. The same has been seen in other departments of Nature, for Kepler had a guiding angel for the planets, but Newton discovered a physical law, and the metaphysical one was abandoned.

Parallel instances are found in studying the social, philosophical, and religious history of the world, which no doubt will readily be recalled. In endeavoring to answer the questions that may arise in the study of the phenomena of Nature, there is a law which constitutes the only logical barrier between science and superstition, and this law was named by Sir William Hamilton "the law of parsimony," or the law which forbids us to assume the operation of supernatural or higher causes, when natural or lower ones are found sufficient. For it is manifest that it is always possible to give a hypothetical explanation of any phenomenon whatever, by referring it immediately to the intelligence of some supernatural agent; so that the only difference between the logic of science and the logic of superstition consists in science recognizing a validity in the law of parsimony which superstition disregards.

Bearing in mind, then, this law of parsimony, we proceed to study the phenomena of the universe, and we conclude that the great generalization known as the law of evolution, so masterly set forth by the great philosopher, Herbert Spencer, explains more of the phenomena of Nature than any other, and hence becomes a very probable hypothesis, almost ceasing to be hypothetical; and its higher probability has caused it to be regarded as a law, and it is now held by all leading scientists. Now, since the phenomena of Nature are best explained by the law of evolution, and the phenomena of disease consti-

tute a part of the phenomena of Nature, it is logical and right for us to look to the law of evolution for an explanation of these same pathological processes.

In accordance with this general law of evolution, which is an exposition of Nature's method of work, disease is always a *change in cellular structure*, or function from a higher or more developed type, from a less organized type, to a lower, more simple and more organized type of structure or function, or, it may correctly be said to be a reversion, in which structure and function retrace the steps they came through in their processes of elaboration. (See Degeneration the Law of Disease, by Dr. L. A. Merriam, *St. Louis Courier of Medicine*, November, 1884.) In the study of the principal causes of disease, and their treatment, more important than any known medicine or drug (except, perhaps, in some cases of emergency), is the removal of conditions that were the principal factors in the causation of this reversion or its continuance as disease.

Chief among all the known causes of all diseases, is chemical, or electrical change in the constituents of the blood stream, either by influences of environment, or of internal influences of poisons, from foods and waste matters, thereby causing further changes somewhere in the cellular structure of the body.

The defensive power of the pure blood stream has been impaired, hence tissue resistance to noxious agents has been lessened. Overfeeding, faulty methods of eating, and improper combinations of foods, with imperfect elimination of waste substances, are the essential factors in a poisoned blood stream. Overfeeding, even if there are perfect insalivation and perfect digestion of starch foods and proteids, with perfect assimilation, may cause constipation, overburdening of the liver with carbon compounds, and the overloading of the blood stream with nutrition that is not needed in the cellular structure, is not used anywhere, hence undergoes chemical changes in the intestines or blood, and with the waste products of repair is changed into purin bases and other chemical substances. These, not being changed into the usually harmless end products known as urea and uric acid for elimination, render the blood stream impure, alter the internal secretions, as Sажous has shown, and the blood becomes a suitable and ready medium for the development of germs, that in a normal state of the blood would have been opposed and successfully resisted by the inherent protective power of this selfsame blood stream.

There have been thousands of people, young and old, who, when vaccinated for the first time, were immune, that is to say, the vaccine would not develop vaccinia, or, as people often say "It would not take," and, because the person's life energy was normal, or high class, and because the blood stream had a sufficient resistive power to protect the person from the evil effects of the vaccine poison. There have been very many instances of persons who had never been vaccinated, and who had been thoroughly exposed to smallpox, yes, even were with the smallpox patients for days and weeks in the capacity of nurses, attending to all their needs, and yet they did not get smallpox. There have been those, who in a malarial district have been exposed to all the un-

sanitary conditions, even including the bites of numerous mosquitos, yet the persons have been immune to malarial fever, and to yellow fever, because of the strong resistive power of their blood in a normal blood stream. There have been those who have nursed cases of Asiatic cholera, the bubonic plague, typhus fever, diphtheria, measles, scarlet fever, epidemic cerebrospinal meningitis, poliomyelitis, and many other forms of so called communicable disease, and yet who, by their power of resistance with a normal blood stream, have demonstrated themselves invulnerable to any evil influence the germs of these disease could exert. Corn, wheat, tobacco, and in short all plants must have a soil adapted to their nature, or they will not produce a crop. Germs will not develop in an unsuitable medium, nor will a person contract so called infectious diseases if the normal resistive power of the blood is kept up to a high standard. Pasteur demonstrated this when he took some of his healthiest chickens and inoculated them with the germs of chicken cholera, and the chickens did not get sick, or take the disease. Then he took several of his healthiest chickens, tied them in a trough, and surrounded the lower part of their bodies with cold water for a few hours until their electrical or life forces were weakened, elimination was lessened, and the chemistry of the blood stream damaged, and then upon inoculating these chickens with the poison of chicken cholera, they succumbed and died in a short time.

Recent well known experiments in Germany and other countries with rats, mice, guineapigs, dogs, and some other animals have shown that cancer cells may be grafted, and will not grow on healthy animals, but if these animals be housed, kept from exercising, and fed for several weeks on a purely meat diet, the cancer cells will then develop and the animals become thoroughly infected and soon end in death. But if, as experiments proved, some of these animals in which cancer had become well developed, received plenty of air, exercise, and sunlight, and the meat diet was discontinued, and they were fed upon a purely vegetable diet, the cancerous masses soon faded away by atrophy, and the animal entirely recovered its former state of perfect health, thus proving overnutrition from a meat diet to be one of the essential causes of cancer.

Among the faulty methods of eating may be mentioned the imperfect insalivation of starch foods, which are usually eaten in excess of Nature's requirement, in which case the starch is only partially changed into maltose, hence the salivary glands, also the glands of the fundus of the stomach, fail to send through the blood the necessary hormones or energy to excite the glands of the pylorus and the duodenum, to send on sufficient secretin to activate the spleen, liver, and pancreas to throw out their secretions, to complete the processes of digestion. The hormone from the spleen not being thrown into the splenic veins, thence into the portal veins, and through the liver with the bile, fails to meet the trypsinogen from the pancreas in sufficient quantity to change trypsinogen into trypsin, hence its union with enterokinase from the small intestine being imperfect, it fails to furnish the antiseptic properties necessary for the destruction of germs in the intestine, and also fails to furnish the peristaltic hormone

said to be manufactured, or stored in the spleen, and so useful in keeping up the movements of the intestine.

Improper selections, proportions, and combinations of foods at a meal, are further causes of deranged digestion and pollution of the blood stream. Foods should be selected, prepared, and proportioned to the bodily needs, taking into full account age, sex, size, occupation, season of the year, and many other conditions of the person being advised or treated. Let us ever remember that Nature is always constructive, and never destructive, when allowed to function in a normal manner. What we eat and drink is what makes blood and tissue, develops electrical energy, and gives us strength to work and think, while at the same time, by the chemical combinations made by incorrect methods of eating and drinking, poisonous products of various kinds are formed in the body, that deteriorate and destroy life just as surely as if the patient had taken a dose of carboic acid.

It is well to remember that the feeling called hunger, that appears the second or third day of a fast, and that nearly disappears after the third day, is not Nature calling for food or nutrition, but is a craving for toxins to which the system has been accustomed, similar to that induced in tobacco users who quit for a few days. The feeling of weakness, known as "that tired feeling" so often found in some people even when not exercising, is only the result of the influence of toxins in the blood stream that should not have been put there, or should have been eliminated.

Too little attention is given to the ingestion of protein foods, which are often used to excess by those who do little or no hard labor, resulting in a blood stream favorable for the development of germs and the production of toxins. Protein is not essentially a producer of energy, but is for the repair, or replacement of worn out cells, is an expensive fuel, and generates little energy, and when used in excess produces much residual waste that complicates elimination.

Then again the putrefaction of protein material produces the most virulent and dangerous poisons known, such as cholin and neurin. Yet with our modern methods of cold storage, and use of preservatives, people are daily using meat, eggs, and other foods, that are often well advanced in decomposition. By such means health is gradually destroyed by poisons from without, as well as by the further generation of internal poisons from faults which I have already described. The blood stream being saturated with debris loses to a considerable extent its ability to transport oxygen to the tissues, and to return waste products from the tissues to the eliminative organs, and thus it produces a failure of various functions and the induction of diseased or degenerated tissue.

The lungs, skin, kidneys, and bowels are the outlets for waste matters no longer needed. Few people breathe sufficiently thoroughly to massage, or activate the veins of the liver by inspiration, thereby insuring also the oxygenation of the blood, and eliminating the carbonic acid, thrown out from the blood through this channel. The large amount of poisonous gases and waste material that in a

normal condition is eliminated through the skin, is little appreciated by the people, and this material when not thrown out, serves further to poison the blood stream and is a fruitful cause of many acute as well as chronic diseases.

Physicians do not always definitely instruct their patients as to the necessity of drinking water in sufficient quantity, from two to four quarts daily, to assist in thorough elimination to the required degree, while the much neglected attention to the bowels causes them to become a fruitful field for the development of microorganisms and the absorption of various toxins.

The use of condiments and stimulating drinks, that are not needed, and cannot be used to create new energy, nor to build up tissue in the processes of repair, but that do debilitate and damage the electric and chemical forces of the body, are all potent influences still further to poison the blood stream, resulting in a fertile soil for the evolution of many kinds of germs that could never have long existed in a normal blood stream.

I have now named the most essential cause of the severity of most acute as well as nearly all chronic diseases, such as pneumonia, pleurisy, coughs and "colds," rheumatism, gout, eczema, hay fever, diabetes, tuberculosis, cancer, pyorrhea alveolaris, vomiting of pregnancy, puerperal eclampsia, neuralgia, neurasthenia, meningitis, insanity, and many other diseases not here mentioned.

We have long been taught that rheumatism and gout were caused by the presence of urea and uric acid in the blood, but this is not true, for urea and uric acid are harmless end products in solution, ready to be eliminated. It is the purin or xanthin bases, as xanthin, hypoxanthin, hyperxanthin, paraxanthin, guanin, adenin, cholin, neurin, and other poisons that do the harm prior to their union to form urea and uric acid as end products for elimination. The fashionable disease diagnosed as "appendicitis," caused largely by constipation and irregularities in the processes of digestion, would never occur in a normal condition of the blood stream.

Insanity, so largely on the increase among our American people, is essentially due to the same poisoned blood stream, as recently shown in the *NEW YORK MEDICAL JOURNAL* for September 2, 1911. It is a mistake to say people die from overwork, either physical or mental. Most people could easily do double the work they usually accomplish, if they lived the simple life in harmony with Nature's best expression of the law, that conformity to certain physical and physiological requirements which is the condition of well being.

Arteriosclerosis, paralysis, cerebral hemorrhage, and senility, or premature old age, may justly be ascribed to the same general cause. The essential cause of intemperance and crime can be ascribed to these same influences, and the first step toward a higher morality, is to teach the people to live right, on a physical plane, then can be developed a better brain and mind for future service to humanity. In England and the United States of America, there were more than twice as many murders in proportion to the population in 1910 as there were in 1850; about twice as many suicides proportionately in

1910 as in 1850. In New York State and in the New England States in 1867, there was one insane person to 1,600 of the population. In 1910 there was one insane person to 273 of the population. In Ireland in 1861 there was one insane person to 730 of the population. In 1902 there was one insane person to 170 of the population. In 1845, England required a man to be five feet, six inches tall to enter the army. Some years later they found difficulty in getting recruits for the army that could reach the standard. So they reduced the height to five feet, three inches and for the same reason a few years later they reduced the height to five feet. The same thing happened in Germany and in France. During the Boer war, England accepted many with defective sight, who in previous years would not come up to the former standard. In New Jersey, the proportion of feeble minded persons has more than doubled in forty years. In the United States we now have one insane, defective, or feeble minded person to every 150 of our population. Arteriosclerosis in the United States has increased from 6.1 per 100,000 in 1900 to twenty-one per 100,000 in 1910. That is, more than three times as many people die from disease of the bloodvessels to-day, as did ten years ago.

Diabetes has increased fifty per cent. in ten years, and appendicitis has increased more than twenty per cent. in the same time. This decided physical decay and race degeneracy among civilized nations is rightly accounted for on the grounds of a poisoned blood stream, and in no other way.

To call hay fever a neurosis does not mean anything. What is the fundamental cause of this neurosis? A poisoned blood stream, and the nasal symptoms are but an expression of this over-poisoned blood stream. Purify the blood by fasting and appropriate feeding and you will not need many drugs for local treatment of the nasal cavity. Every case correctly treated will be cured in from two to five days, and will remain cured when patients are properly instructed and live the simple life.

The emotions play a very important part in poisoning the blood, by the production of toxins. We all remember the incident of the woman who had a severe quarrel with her husband, became very angry and excited, and a few minutes thereafter went into another room, picked up and nursed her three months old babe, with the result that the babe became convulsed from the toxins of the mother's milk, and died in an hour.

Despondency, grief, and other emotions have wrought their poisonous influences upon the blood stream, to the great damage of even the unborn child, a fact very little appreciated. The best method to purify the blood stream is abstinence from those foods, agents, or influences that contaminate the blood stream. To conduce to this end I often advise abstinence from all food except pure water, for a period of from one to three or more days. With plenty of water inside, to flush the system, careful bathing, and moderate exercise, the system will quite effectually rid itself of a large proportion of waste and poisonous substances. The body is now ready for such medicines as may be required to assist in this house cleaning.

But until this fasting and flushing have been properly attended to, it is my custom to forego any active medication. Later I begin feeding them with easily digested foods of a simple kind, taking great care thoroughly to instruct the patient in all the essentials of a simple life and to show them the purpose and object of the feeding process, so as to make a pure blood stream and healthy vigorous cells for the generation of electric activities and a normal body and mind.

The troubles that you meet in life
Are of your own design;
They come and go, according to
The way that you incline.

You must not blame the oil or lamp,
Or pumping wick between,
The trouble is your own neglect,
Your burner isn't clean.

BRAMLEYKITE.

409 BEE BUILDING.

TEN SEX TALKS TO GIRLS.*

BY IRVING DAVID STEINHARDT, M. D.,
New York.

IV.

To-night we take up the subject of venereal diseases, the most loathsome of all human ills, that leave disgrace and suffering in their wake; diseases that can cause a blight on one's life from the very minute of coming into the world; diseases that may cause lifelong suffering and insanity; diseases that can affect the innocent as well as the guilty in their ravages. Worst of all is that they could be not only prevented, but entirely stamped out of our world. Proper sex education given to both sexes, combined with the practical application of the knowledge thus obtained, would increase human health and happiness to such a great extent that it is past estimating. Only those who practise medicine and realize the enormous amount of damage done to the human race by these diseases will feel that my statements are not exaggerated. Question them, however, and perhaps then you also will realize that not only do I not exaggerate, but that my statements are very moderate. Just think of it! Thirty persons out of every hundred blind people that you see, lost their sight from just one of these diseases, designated as venereal. Others lost theirs through another of this class of disease. The asylums for the insane have inmates both young and old who are victims of venereal diseases. Probably seventy-five women out of every hundred women requiring surgical operations affecting the sexual organs, could trace the origin of their trouble to venereal diseases. The number of men who could trace operative procedures to such a source has never been estimated, but the percentage must be very large. Nature certainly exacts a heavy toll here, somewhat perhaps unreasonable in her exac-

tion because she makes the innocent suffer with the guilty; the children with the parents; the innocent wife with the guilty husband, or the reverse, as the case may be. The two principal venereal diseases are gonorrhea and syphilis. We will discuss both, taking up first the most common of the two, viz., gonorrhea.

Gonorrhea is an acute infectious disease caused by a germ known as the gonococcus of Neisser, Neisser having been the discoverer of this particular germ. This germ is very virulent and the inflammatory processes set up by it are very destructive. For instance, gonorrheal pus in the eyes means total destruction of the eyesight unless extraordinarily prompt treatment is instituted. Gonorrhea is usually transmitted from person to person in the performance of the normal sexual relation, the infected person being, of course, the source of infection for the other. Therefore, the usual place of infection in the female is the vagina. This infection, however, can be got from an unclean toilet seat, dressings from a case of gonorrhea, dirty instruments, or fingers which have been in contact with gonorrheal pus. Masturbation by another who is so infected and may therefore have some of the pus on their hands, is a very apt way of conveying the disease from one to another.

Next to the vagina the eye is probably the most frequent seat of the infection. Of course infection of the eye is usually accidental and is due to rubbing it with a soiled finger or handkerchief. In the case of an eye infected with gonorrheal pus, I want to repeat most emphatically what I just said a few seconds ago, get the most expert medical attendant that you can if you want to have the person whose eye is affected retain his eyesight. It is a most serious matter and requires almost more than immediate attention.

Let us see what follows the entrance of the gonorrheal germ or infection into the vagina, disregarding the way it got there. It immediately sets up an inflammation which results in it being able to pass through the lining membrane of the vagina and set up a general reaction throughout the entire body. This reaction may consist of chills, fever, and languidness, the whole being severe enough to cause the affected person to go to bed for several days. Likewise the germs burrow their way into every gland that opens into the vagina and set up inflammatory reactions there. There are several of these glands which may be so affected. Wherever this inflammation is set up, there is usually pus formation and therefore a gonorrheal leucorrhea results. If some of the germs manage to find their way up into the urinary orifice this becomes infected and the infection travels up into the bladder and in some severe cases may continue up into the kidneys by this direct route. At any place abscesses are liable to result and require surgical treatment. The pain when the urinary apparatus is involved is very severe, the passing of the urine oftentimes causing the patient a sufficient amount of suffering to cause her to faint. When the gonococcus travels up from the vagina into the womb, it sets up a very severe reaction, which may affect the womb so much as to render it unable to exercise its func-

*Delivered by invitation before the Florence Memorial Aid Society of the Hebrew Educational Institute of Brooklyn, N. Y., the "Evergreens" of the Emanuel Brotherhood of New York, and elsewhere.

The author is willing that anyone desiring to give talks of this kind use all or any part of these that may be desired. In giving these talks, the author always encourages the asking of questions at the end of each. In this way anything said during the talk which was not clear to the audience is explained more fully.

tion at the time of pregnancy, with the result that the woman so affected is unable to bear children, a most unfortunate state of affairs for any normally constituted woman. Multiple abscesses may form in the womb, necessitating surgical treatment even up to the removal of the womb from the body entirely.

The infection may continue on its travels and get up into the tubes. Here with pus formation, the only thing to do is practically to remove the tubes and hence the power of the woman to bear children, because with both tubes removed, the ripe ovum has no way of traveling from the ovary to the womb, and therefore there can be no fertilization. If the affection finds its way into the ovaries, again surgical treatment will be necessary, if abscesses come about. If there are no ovaries there can be no ova and without ova to be fertilized there can be no children. The removal of the ovaries likewise disturbs the menstrual period—in fact, causes it to disappear altogether usually, adds to the woman's misery very much, and makes a deal of an invalid out of her for some time, maybe forever. In some cases the results of the infection are so intense as to necessitate an operation for the removal of the entire sexual apparatus of the woman, meaning her practical unsexing.

Again, supposing the infection runs a milder course, and the woman becomes a chronic sufferer from gonorrhea; she becomes pregnant after marriage, and during the delivery of the child some of the gonorrheal pus gets into the eyes of the child. It means destruction of that child's eyesight at once, unless preventive measures are immediately instituted. A careful medical attendant takes no chances in any case, but takes preventive measures with every child he helps bring into the world, whether he thinks the mother is a gonorrhea carrier or not. He drops into the eyes of every child he delivers a few drops of silver nitrate solution and thereby kills off any infection which might be present in the child's eyes, no matter what the source. I advise you as probable future mothers to remember this fact and when the time comes that you are receiving God's blessing in the shape of a little baby, that you recall my advice in this regard and remind your medical attendant, whether a midwife or a doctor, that this should be done and insist upon its doing at once. If you feel that you cannot absolutely trust it to be done at once, have it done in your presence. You do not want to have a blind baby—to blast a little being's life at the very beginning of its existence. These few drops of silver nitrate solution will spare it this affliction, even if its mother has been so unfortunate as to have had, and still have gonorrhea.

If the child happens to be of the female sex, gonorrheal infection is liable to get into her vagina during the time of birth and give her plenty of pain and trouble. How can you guard yourself against gonorrheal infection? First, by not indulging in illegitimate sexual relations, for a man who might think twice before taking the chance of infecting his wife, will not worry if he communicates any disease to a woman who will have illicit relations with him. Second, by refraining from being masturbated or handled in these genital parts in

any manner by anybody. Third, by never using towels used by any one else. Fourth, by cleaning any toilet seat before using it and even after cleaning it avoid, so far as is possible, having the genital parts touch it. Fifth, by insisting before marriage that your prospective husband have himself examined by a good physician in a most thorough manner to be sure that he is free from such disease. If a man really loves a girl in the right way, he cannot object to being asked to have such an examination made, especially if he has indulged in the sexual relation with everybody and anybody as opportunity offered, up to that time. He should have no desire to ruin the health and happiness of his wife, when you become that to him, nor to run the chances of being the cause of the blinding of his future offspring at the time of birth. You see, most men, through ignorance of what is good for them and lack of knowledge of the terrible chances they are taking with their health, do indulge in the sexual relation before marriage. This is owing to the fact that at present we have that queer double standard of morals which makes immorality in the woman a most unpardonable sin, whereas the same action in a man is a pleasurable necessity to his health. Of course, this latter statement about the sexual relation being necessary to the health of the male, is nothing but a lie made out of whole cloth, and if some of the doctors who are so neglectful of their mission to benefit and improve the human race, as to make this statement really do so in all sincerity, I should like to have them come to prove their assertion to me. When they advise a male patient to indulge in immorality, I wonder what they would think of their advice if the patient to whom it was given happened to carry it out with the sister, wife, or daughter of the doctor who so advised him. You see when such advice is given to a male patient and he carries it out, some one's wife, sister, or daughter has to be the sufferer. No female is born immoral for such prescriptions to be carried out on. She has to be robbed of her virginity by some man. I should not want to be the doctor who by giving such advice would be responsible, even indirectly, for degrading a woman. Very fortunately for the profession, there are not many doctors who give such vicious advice. I believe that in most cases where it is quoted by the man as an excuse for his immoral practices, he is merely speaking by hearsay and never really personally went to a doctor for advice. There is absolutely no reason or excuse for either man or woman indulging in illegitimate sexual relations, either on the grounds of health or otherwise. When it is so indulged in, it is either to satisfy animal desire, or for some pay, which may be money or other recompense. I regret to say that it is usually the female who is guilty of the almost unspeakable shame of offering herself up for sexual indulgence to the opposite sex as an ordinary commercial transaction—in other words for personal gain; and it is hard to imagine how a woman can possibly get so low, get to be so utterly lacking in self respect as to make the sacred sexual relation a thing of barter or every day business.

Every girl can help toward bringing about the end of immorality, first, by being pure and above

reproach herself; and, second, by insisting upon those of the opposite sex who desire to be friends of hers being the same. Give them their choice. They must either give up their immoral women companions for good and all, or stick to them entirely. Third, you can endeavor to bring back to the straight and happy path of morality, those females who you know have strayed from it. It is never too late for a girl to come back to a good life, and it is your duty to help such a girl to the utmost of your ability. If each one of you would rescue just one brand from the burning, my talks to you would be amply paid for. Remember the old saying, "While the lamp holds out to burn, the vilest sinner may return." Personally I know that I would do everything in my power to help a repentant girl back to a clean life again, and I sincerely hope that each and every one of you would do the same. It will be to the advantage of every one of you to help the cause of morality along in every way that you can. The wedding night means for too many women altogether, loss of future health and happiness and probable serious surgical operation in the future, a very sad harvest to reap from what should be the happiest time of her life.

The matter of gonorrheal infection cannot be passed over lightly. The fact that many a husband who so injures his wife by giving her a gonorrheal infection, even though he does so innocently, does not make the physical suffering of the wife any less. The fact that he may think himself cured of any such trouble acquired before marriage, does not alter the case. I am and always have been in favor of a law requiring every applicant for a marriage license, both male and female, to present a certificate of at least good sexual health. Some States already have such laws and strictly enforce them. Every girl can be such a law unto herself and should be. You are no coward, nor any the less a devoted lover, because you seek to conserve and protect your own health and that of your future children. Rather you are a sensible girl, seeking to be a good wife and mother. Again, remember that the immoral girl can suffer all these things as well as the wife, only the former is less liable to escape them, for no man stops to consider his condition when he is going to consort with an immoral woman. Again, lack of care of herself which a life of immorality precludes also makes the chances of suffering more sure for the girl whose morals are loose, for without care, things go from bad to worse, and finally get to the point of maximum physical suffering, to which are added the pangs of mental anguish caused by remorse.

If you work for social purity by both word and deed you are going to add to everybody's happiness including your own. God did not make the act of creating our race one to be debased by making it a popular form of dissipation or of barter. Neither did He intend those of you to whom He gave the right of motherhood, to sell to men the privilege of making this act a mere animal pastime. As future mothers of sons and daughters, you are very much interested in social purity, for none of you want to think of a future son being a despoiler of your sex in his manhood, or of a future daughter being a woman who would be willing to offer up

herself for the sexual gratification of men for money. Neither do you want to be an unnecessary martyr to our present unfortunate social code, when a little common sense on your part will serve to protect your health and those of any future offspring. Just think it over carefully and you will certainly be a most earnest worker in the cause of social purity. Remember there can be no immorality without both sexes participating. Work to see that, so far as you can prevent it, no member of your sex that you can advise or control will be a disgrace to her womanhood.

310 WEST NINETY-NINTH STREET.

THE TECHNIQUE OF RADIOGRAPHY.

By JOSEPH FRIEDMANN, M. D.,
New York.

Instructor in X Ray and Electrotherapeutics, Post-Graduate Medical School and Hospital; Assistant in Radiotherapy, Mount Sinai Hospital Dispensary.

As a rule, the general practitioner has very little time to take up this subject in detail; furthermore, it would scarcely be to his advantage to familiarize himself with its many technicalities, and when he picks up a book it does not deal, as a rule, with the subject from the practitioner's point of view.

The x ray outfit for radiographic work consists of an induction coil, x ray tube, fluoroscope, tube stand, board, sheet of lead (14 by 17 inches by $\frac{1}{8}$ inch), lead screen with lead glass window, shadow box, ammeter, electrolytic interrupter, spark gaps, and valve tube.

The larger the x ray tube the better it is for radiographic work, and the life of the tube is much longer. For good radiographic work the rays must impinge upon the centre of the anode, otherwise the negatives will be blurred. Another point to remember is that an x ray tube cannot be used continually. It is best to have two or three tubes in reserve. A tube which has been in constant use for some time is improved by resting for a few weeks.

One can readily tell if the rays are passing properly through the tube; if instead of a steady glow, concentric rings are seen passing through the tube, it indicates that the rays are passing in a reversed direction. The switch should be reversed, if bipolar, or the current shut off, and the tube removed from its holder and replaced in the opposite direction. A punctured tube shows instead of a steady fluorescence a purple light in the tube. Do not have the x ray tube clasped tightly in the holder, as it is liable to explode when it becomes heated. It is well to touch all the metal terminals, to discharge any current which might be in the tube, and thus avoid puncturing.

In every case take a complete history of the patient. Remove clothing or any splints or dressings which may contain iodoform or zinc oxide plaster, as these obscure the negative.

In taking a radiograph many things must be considered:

1. The penetration of the tube.
2. The distance of tube from patient.
3. Position of tube.
4. High potential current as shown by milliamperemeter.

5. Kind of interrupter.
6. Thickness and density of part.
7. Kind of x ray plate used.

Know how your tube is behaving by first testing it and, if necessary, lowering the degree of vacuum in the tube by raising or lowering the distance of the wire pointer from the cathode extremity, so that in taking a picture of the extremities a soft or medium tube will do; for shoulder, knee, or kidney a medium tube; for head, spine, and pelvis a hard tube is necessary.

The greater the distance of the tube from the patient the better the negative produced, but exposure must be prolonged. In radiographing any part of the body, excepting the chest, the distance of the x ray tube from the sensitive plate should be between seventeen and eighteen inches; in chest work, twenty-four inches from the plate.

After having tested the tube, it is essential to watch the milliamperemeter and the color of the tube, and if the vacuum begins to break there will be a change in the pitch of the sound of the spark gaps and interrupter. When this occurs the current should instantly be shut off, otherwise there is danger of blackening the tube. After this occurs the tube should not be used for some time.

The use of the spark gaps is to help decrease the inverse current; when they are used the exposure should be lengthened a few seconds; when there is too much inverse in the tube, reduce the rheostat almost to starting point, allowing the tube to catch up, and gradually the amount of current is again increased.

The value of a valve tube in the circuit is to protect the x ray tube from the inverse current; at the same time it insures longer life and efficiency to the tube.

In radiographing any part of the body it must rest perfectly quiet. For radiographing the upper or lower extremities, the patient may be in a sitting posture; for head and abdominal cavity the horizontal position is best, preferably on a table. The table should be plain. A sheet of lead is placed on the table, preventing radiation, giving clearer outline to picture, and more distinct detail. On the lead sheet is placed the x ray plate with the smooth surface of the envelope facing the tube when the tube is used above the table, having the distance of the tube about eighteen inches from the plate. Also note that the anode or target of the tube is exactly at right angles to the area to be radiographed. This can easily be ascertained by using a plumb line.

Exposure will depend upon the motive force used, the condition of the vacuum of the tube, size of the tube, amount of amperage passing through the primary, kind of interrupter, and the kind of x ray plates used. The length of exposure for a given part is very hard to tell; this requires personal experience. Radiographing children is much easier than adults, as the structures are not so dense and require very short exposures because the rays penetrate more readily.

In taking radiographs there is frequently great danger of extensive burns to the operator, as very powerful rays are used, and the operator should protect himself by standing behind a heavy lead lined screen which has a lead glass window, six by

eight inches, so that the behavior of the tube can be noticed. Still better is to operate the machine by means of switches from another room which contains a lead lined wall with a small lead glass window.

Keep the sensitive plates in original package in the dark room, standing on edge. Sensitive plates in original packages should last six months, but if the plates are in envelopes for a few months, the chemical action of the sensitive plate with the black envelope destroys the sensitiveness of the film. If the plates are kept in the x ray room they should be in a lead lined box. Plates should be loaded just before exposures are made, so that they are always fresh. Remove the sensitive plate from the box in the dark room, place film side up in the black envelope, and this in the red envelope. The smooth side of both envelopes should be in contact with the film side of the plate. By this means you can always tell if the sensitive side is up.

In taking radiographs of fractures, always take at least two views, especially in medicolegal cases; also take a radiograph of the normal limb for comparison. Care must be taken that the rays strike the part at exactly the same angle as the injured limb, so that the normal and abnormal can be compared under like conditions.

In radiographing for foreign bodies in the chest or abdominal cavity, shorter exposures are desirable as the respiratory movements may obscure the shadow of the foreign body. In radiographing for fragments of needle in the hand it is best to take a picture in one position, and then in another at right angles to it. Another method is stereoscopic, requiring a plate changer and a special graduated tube stand.

The value of radiography of bones is that it shows definitely if any fracture or dislocation is present and the extent of the injury, or diseased conditions, as periostitis or exostosis, osteomyelitis, tuberculosis, syphilis, osteosarcoma, or pus cavities. In the chest radiography shows pathological conditions of the bronchial nodes, bronchi, lungs, pleura, heart, pericardium, and esophagus. In the abdominal cavity it shows displacements of organs, cancer of the stomach, and pathological conditions of the colon. This technique must be almost instantaneous and requires an intensifying screen. Renal, ureteral, and vesical calculi are also diagnosed.

In taking a radiograph the important thing to remember is that the part to be radiographed should be nearest to the x ray plate. Radiography of the upper and lower extremities is simple, and a medium tube may be used with exposures varying from five to fifteen seconds, depending upon the thickness of the different structures and on the kind of apparatus used. The foregoing figures are given for a twelve inch coil, leaving twelve to fifteen ampères of current passing through the primary.

In radiographing the shoulder joint, it is always best to support the arm by means of sand bags and rotate the humerus outward and backward, bringing the head of the humerus in close contact with the x ray plate.

In renal calculi, about forty-eight hours before the radiograph is taken, give the patient a purge thoroughly to cleanse the colon; one ounce of castor

oil at bedtime and another dose the following night, an enema the following morning, the patient being on a liquid diet, the object being to lessen the resistance to the penetrating rays. If this procedure is not followed out, and fecal masses are in the colon, the kidney area will show black spots and the shadow cast on the negative will not show the stone which may be present. A kidney picture to be of value should contain the lumbar vertebrae and their transverse processes, the crest of the ilium, and the eleventh and twelfth ribs. It is always best to take a picture of both kidneys on one plate for comparison. The anode of the tube should be opposite the third lumbar vertebra and in the median line. Shorter exposures are indicated for locating renal calculi than for the vertebrae, as small calculi are rendered indistinct and sometimes invisible by over exposure.

The dark room should be painted a dull black, as actinic light injures the negative. The best light is the red glass electric bulb covered with one or two red envelopes.

Enamelled pans are best for developing, as the image shows sooner and the pans can be kept perfectly clean, whereas rubber pans undergo chemical decomposition on the surface.

The best developer varies with the make of plate used. Formulæ for developing accompany the plates.

TECHNIQUE.

Pour sufficient developer into the tray completely to cover the plate. The temperature of the solution should be 68° to 70° F., in winter, and 60° F. in summer. This temperature in summer can be maintained by placing the developing tray in a larger tray containing cracked ice. Remove the exposed plate from the envelope and rapidly slide it into the developer with the film side up. Rock the tray from side to side so that the solution covers the entire plate; if the tray is not rocked the plate will be mottled. Keep the plate away from the light, or cover the tray with an opaque substance, as a board. Neglect of this precaution will cause fogging of the negative.

When the detail is fully developed remove the plate and examine by holding it with its reverse side against the ruby light for a few moments only; if not sufficiently intense, replace in the developer for a few minutes, then remove from tray, wash in cold running water, and then place in fixing bath or hypo until all traces of silver are dissolved. In developing be sure the hands are perfectly clean to avoid getting hypo stains on the negative. In developing plates of soft tissues, kidney for example, the image appears more slowly and developing must be continued much longer than for bone structures—at least five to six minutes after the image is seen on the reverse side of the plate. After removing the plate from the hypo, rinse and leave the plate at least one hour in a tank of running water, otherwise the hypo crystallizes on the negative. This thorough washing keeps the negatives from fading. After washing the plates place them in a rack away from the sunlight in a cool place to dry.

REFERENCE:

JUDD: *X-Ray and High Frequency*.

73 WEST 116TH STREET.

Therapeutical Notes.

Treatment of Senile Prostatic Hypertrophy.—Walter Griess, in *American Journal of Dermatology*, for May, 1912, remarks that measures having as their object reduction in size of the enlarged prostate can be expected to succeed only when such enlargement is due to an associated congestion or prostatitis. Epinephrine chloride in rectal suppositories is employed by the author as a routine measure, and is believed by him to have distinct value, whether on account of its local action or because of its effect on involuntary muscle fibres generally, whereby the bladder is assisted in its expulsive efforts.

Treatment of Blepharitis.—Valude, in *Quinzaine thérapeutique* for April 25, 1912, recommends that the lids be washed either with a hot infusion of green tea or with the following lotion:

R. Distilled water,500 grammes;
Sodium borate,10 grammes.
M. ft. solutio.

These preparations should be used morning and evening for two or three minutes, at a temperature of 35° to 40° C., and applied either on absorbent cotton or with the eye cup.

After the washing, one may apply daily to the lid margins, in the dry form of blepharitis, the following ointment:

R. Petrolatum (neutral),10.0 grammes;
Red mercuric oxide,0.1 gramme.
M. ft. unguentum.

Or, if there is intense itching, an ointment containing zinc oxide may be used.

Where ointments are not well borne or prove inefficient, the lid margins should be painted every evening after they have been washed, with:

R. Distilled water,10.0 grammes;
Picric acid,0.1 gramme.
M. ft. solutio.

The washing on the following morning will remove the yellow stain of the picric acid from the lids.

In moist forms of blepharitis, a one per cent. solution of silver nitrate or a one or even two per cent. solution of mercury bichloride may be painted on the lid margins with a fine camel's hair brush, in place of the picric acid. If necessary this may be done twice daily.

In some instances the sodium borate lotion already mentioned is not well borne; here a solution of sodium hyposulphite may be used:

R. Distilled water,300 grammes;
Sodium hyposulphite,15 grammes.
M. ft. solutio.

In children of the lymphatic type, blepharitis is characterized by ulcerations of the lid margins which appear only after the thick crusts covering them have been removed by rather vigorous rubbing. Such cases require the use of a 2.5 to five per cent. ointment of freshly precipitated yellow oxide of mercury in petrolatum or hydrated wool fat. Smoked glasses should be worn to obviate photophobia. The eyes should not be covered with a bandage, as the flow of conjunctival secretions would thereby be favored.

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CHARLES E. DE M. SAJOUS, M. D., LL. D.,
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THE ANTITUBERCULOSIS CAMPAIGN.

In our issue for July 27, 1912, we commented on the injustice and cruelty of sending indigent patients with advanced pulmonary tuberculosis to the south-west, or in fact anywhere away from home. It was pointed out that tuberculosis can be cured or arrested in any section of the United States, and that the proportion of cures is nearly the same in the east as in the west. It is reasonable and true to experience that an antituberculous régime is perfectly feasible for any patient at his home. Change of climate may have a very definite value if the patient is able to afford with it such essentials as careful diet, rest, freedom from worry, etc.; without these things he is better off at home. It may be safely assumed that a hereditary predisposition and a so called tuberculous diathesis are of more importance in the development of tuberculosis than mere exposure to infection. As Osler says, the tubercle bacillus is ubiquitous; but if it finds no suitable soil it will not increase.

In 1907, Pearson¹ in England, studied the complete records of 384 family stocks in which tuberculosis had occurred. He concluded that while infection is a necessary factor in the propagation of the disease, it is not so important as a predisposing

tuberculous diathesis, and, furthermore, that this diathesis or predisposition is inherited just as intensely as any other physical characteristic. This and much other available evidence only goes to support the truism that prevention is a more vital and pertinent question for the physician than cure of the disease after it has gained a foothold.

From this standpoint the work of the Committee on the Prevention of Tuberculosis of the State Charities Aid Association is doing excellent service. While their work is primarily directed toward proper segregation and care of the tuberculous under municipal and county auspices the real effect of their campaign is to deprive sources of contagion of opportunities to infect others, to educate the laity in the dangers of the disease, and, above all, to instruct people how to avoid the disease by simple dietetic and hygienic rules. It is work of critical value and deserves the physician's sympathy and active support.

In New York State, outside of this city, five counties (Ontario, Monro, Ulster, Schenectady, and Rensselaer) had tuberculosis hospitals in operation on July 15, 1912, under provisions of the county hospital law. Fulton and Tompkins counties have such hospitals nearly completed. On June 18, 1912, Orange county voted to take over the Newburgh tuberculosis sanatorium, and conduct it as a county institution. Erie and Westchester counties operate tuberculosis hospitals as parts of their almshouses. Eleven other counties have voted to build similar hospitals. Dutchess, Chemung, Cayuga, and Albany counties send their tuberculous patients to municipal hospitals within the county. In all, twelve counties have provided institutional care for their consumptive patients, and fourteen others have such provision either authorized or under way.

There is one municipal hospital for tuberculosis in operation in Yonkers and another under construction in that city. Buffalo will soon open a sanatorium for incipient cases at Perrysburgh, and has plans under way for a hospital for advanced cases to be located in the outskirts of the city. The city of Rome has practically completed a pavilion for tuberculous patients, and the Central Federation of Labor in Albany operates a hospital which receives patients from all sections. Outside of New York there are in the State more than sixty visiting nurses for antituberculous field work, as well as twenty-four free dispensaries, five summer camps, and seven open air schools.

The work of the State Charities Aid Association against tuberculosis is practically all outside of New York city. The slogan of the Committee on the Prevention of Tuberculosis is: "No Uncared for Tuberculosis in New York State in 1915!" The re-

¹Editorial article, Statistics of Tuberculosis, *Medical Record*, September 10, 1911.

sults of the campaign in the State, as summarized above, do not include private sanatoria.

While the emphasis is being put on the danger of tuberculous infection and the actual care of the positively diseased, it is well not to lose a true perspective. Prevention of the disease by hygienic living and the correction of the tuberculous diathesis is of no small importance to the public spirited physician. From the eugenic standpoint, the value of segregating the tuberculous in sanatoria lies in the removal from society of possible sources of contagion to others, and in the limitation of the propagation of offspring predisposed to the disease.

EXPERIMENTAL CONFUSION AND THE DUCTLESS GLANDS.

It is becoming increasingly evident that progress in the medical sciences is being greatly retarded through inadequate analysis, on the part of experimenters, of available knowledge upon the questions to which they devote their researches. Many instances could be adduced, in fact, where this defect has proved destructive to valuable discoveries. Experimental data are assumed superficially to antagonize and disprove the latter, whereas sufficient preliminary study of the question as a whole would have revealed that, on the contrary, they served to support them.

Suggestive in this connection are the numerous researches now being published upon the functions of the ductless glands. In a recent issue of this JOURNAL (July 20th) we commented upon the experimental observation of Fuchs and Roth that adrenalin injections increased the intake of oxygen as well as that of air, also the respiratory rate and the carbon dioxide output. We showed at the time that this coincided with many other facts observed experimentally, e. g., the presence of adrenalin in the red corpuscles, the rise of temperature produced by adrenal preparations, the hyperthermia caused by adrenal grafts, etc., all of which tended to sustain the theory that the adrenal secretion takes part in the respiratory process and tissue oxidation. In apparent contrast now appear the researches of Hari (*Biochemische Zeitschrift*, x, p. 187, 1912), in which adrenalin injections caused simultaneously with the rise of blood pressure, diminution of the oxygen intake. This result, in keeping with the present superficial use of experimental data, will be deemed antagonistic to Fuchs and Roth's observation. A cursory analysis would show, however, that such is not the case, the discrepancy being due entirely to the relatively large doses of adrenalin employed by Hari, nearly five times those used by the former investigators. This active principle

affecting mainly the arterioles, as shown by Langley, these terminal arteries became unduly constricted in Hari's experiments, and less arterial blood being admitted to the tissues, metabolism was slowed, with lowering of the oxygen intake as a normal result. Again, O'Connor (*Archiv für experimentelle Pathologie und Pharmakologie*, lxxvii, p. 159, 1912), in a thorough investigation of the adrenalin content of the blood by the Laewen-Trendelenburg method, also Kahn (*Pflüger's Archiv*, cxlv, pp. 251 and 396, 1912), who studied the same problem after Claude Bernard's puncture, failed to find the adrenal principle in the blood serum. Here again, careful analysis done by others on the question would have explained this second apparently contradictory phenomenon, since it would have been ascertained that it is not in the serum that the adrenal active principle is to be found, but, as shown by Mulon, in the red corpuscles. Even here precautions which the average investigator fails to take, often mislead him owing to defective preliminary study of the properties of the adrenal principle, viz., to prevent its exposure to any medium containing oxygen in a free state or loosely combined, contact with this gas rendering it inert.

Notwithstanding the enormous array of experiments devoted to the ductless glands during the last decade, our knowledge of their actual functions in the body is practically as obscure as it was before all this painstaking work was done. This is plainly due to the fact that analytic and synthetic philosophy has no place in the study of obscure questions. Experimental data, to bear fruit, should only be regarded as factors out of which our actual knowledge is elaborated, precisely as bricks and stone are employed by the architect in the elaboration of an edifice; and this applies to the whole field of medical work.

THE UNITED STATES PUBLIC HEALTH SERVICE.

By an act of Congress, approved August 14, 1912, the name of the Public Health and Marine Hospital Service has been changed to Public Health Service. The functions and duties of this service have been extended and certain changes have been made in the salaries of the officers. The important changes of the act are as follows:

The Public Health Service may study and investigate the diseases of man and conditions influencing the propagation and spread thereof, including sanitation and sewage and the pollution, either directly or indirectly, of the navigable streams and lakes of the United States, and it may from time to time

issue information in the form of publications for the use of the public.

Beginning October 1st, the salaries of the commissioned medical officers of the Public Health Service are to be at the following rates per annum: Surgeon general, six thousand dollars; assistant surgeon general, four thousand dollars; senior surgeons, of whom there are to be ten in number, on active duty, three thousand five hundred dollars; surgeon, three thousand dollars; passed assistant surgeon, two thousand four hundred dollars; assistant surgeon, two thousand dollars; and the said officers, excepting the surgeon general, are to receive an additional compensation of ten per cent. of the annual salary for each five years' service, but not to exceed in all forty per cent., with the proviso, however, that the total salary, including the longevity increase, shall not exceed the following rates: Assistant surgeon general, five thousand dollars; senior surgeon, four thousand five hundred dollars; surgeon, four thousand dollars. There may be also employed in the Public Health Service such help as may be provided for from time to time by Congress.

OUT PRACTICE IN CHINA.

A. M. Wang, a Chinese practitioner, in *China Medical Journal* for March, 1912, mentions a few points which are not without interest. His first point is the necessity of gaining the patient's confidence and a constant effort to remove prejudice, and to this end it is necessary for the physician to have a knowledge of the Chinese language, exercise tact and patience, and exhibit a kindly feeling toward patients.

The lack of trained nurses is one of the chief drawbacks in practice among the Chinese. Fresh air, warm rooms, light bedding, comfortable clothing, liquid or nutritious diet are, in fever cases, unknown to the Chinese.

Foreign physicians, as a rule, receive more respect from the natives, and command more satisfactory fees, but it is not an easy matter to build up a practice in China, even in a city like Shanghai. Excessive care must be exercised, for if a patient dies, it will ruin one's practice for a year. Moreover, the Chinese have no sense of professional etiquette. They can engage or change as many physicians as they desire. When the doctor is called, he writes his prescription and gives the necessary advice, but is not expected to repeat the visit unless requested, as is said to be the custom prevailing in Boston, Mass.

Doctor Wang, while attending the wife of a high official, was compelled to suffer the visits of four more Chinese doctors who were recommended by some officials to see the patient, and who told her husband that owing to the difference between Chinese and Western constitutions the liquid diet used would result unfavorably to the patient. Fortunately, however, the patient made a good recovery.

SPLITTING IN THE PARKS.

A petition addressed to the municipal council of Paris is reproduced in *Presse médicale* for July 27th; it is signed by numerous well known physicians and notes that spitting is very common along the pathways of public parks and squares, which cannot be swept with the thoroughness observable in the streets. The danger of infection by the hands and shoes of little children is obvious, and the council is asked to forbid spitting in these playgrounds under severe penalties.

SPONTANEOUS SUBARACHNOID HEMORRHAGE.

Lafforgue, on July 18, 1912, reported to the Société de médecine militaire française, according to *Presse médicale* for July 31st, a case of spontaneous subarachnoid hemorrhage, a rare symptom since there are only nine cases on record. Lafforgue asked what might be the prognosis in such a condition, and since there had been reason to suspect tuberculosis, might we not compare this subarachnoid hemorrhage to the initial hemoptysis of phthisis and to the premonitory hematuria of renal tuberculosis?

FURTHER INFORMATION ON THE ETIOLOGY OF BERIBERI.

Important researches have been made by American surgeons stationed in the Philippine Islands on the etiology of beriberi. Among these should be mentioned Major W. P. Chamberlain, Captain E. B. Vedder, Doctor Bloombergh, Doctor Kilbourne, and Mr. R. R. Williams, chemist in the Bureau of Science in Manila. We have reported the results of these researches in previous issues. The last number of the *Philippine Journal of Tropical Medicine*, which appears as Section B of the *Philippine Journal of Science*, Doctor Chamberlain, Doctor Vedder, and Mr. Williams make an interesting report on their experiments which substantiate the theory that polyneuritis gallinarum and beriberi are caused by the deficiency of some as yet unknown substance in the food. Kohlbrugge's theory that the disease is caused by an acid intoxication, due to the fermentation of rice by various saprophytic bacteria contained in the kernel, must be regarded as untenable. The above mentioned unknown substance in the food is not phosphorus. The authors also took up substances which, they thought, contained a principle preventive of neuritis which is insoluble in ether. This principle is absorbed by animal charcoal, as the filtrate through such charcoal will not prevent neuritis; but, after absorption, the active principle cannot be removed from the charcoal by maceration with water, absolute alcohol, or ether. The following substances have no importance in preventing neuritis of fowls: Nitrogenous compounds, such as arginin, histidin, asparagin, and various aminoacids; lipoids of the lecithin group and cholin; and extract of onion.

Led by their observation of the action of charcoal, they suspended the charcoal in 500 c. c. of distilled water, and two c. c. of this mixture was fed daily to four fowls subsisting on highly milled rice; the fowls all remained well at the end of sixty days, thus proving the contention that the substance preventing neuritis remains in the charcoal.

Medical Law.

VIII. CIVIL MALPRACTICE.

The case of *Luka vs. Lowrie*, 136 Northwestern Rep. 1106, recently decided by the Supreme Court of Michigan, is specially instructive. This case illustrates further the doctrine of "error of judgment" recently discussed in the case of *Brydges vs. Cunningham*, and also illustrates in case of emergency, the rule as to the necessity of procuring consent before operating upon a minor is modified.

In this case the plaintiff, a boy of fifteen years, had sustained the injury of having his left foot crushed under the wheels of a car. The scaphoid was torn away entirely and the flesh was crushed and torn from the top of the foot, leaving the muscles, ligaments, and bones exposed, and when examined at the hospital the foot was found to be cold and dead, the circulation having been interrupted. When the boy arrived at the hospital he was able to give his name and the name of the street on which he lived, but within ten or fifteen minutes after arriving he lapsed into a comatose condition and later into complete unconsciousness, and remained so until after the foot was amputated, although injections of strychnine and infusion of a saline solution were made.

Four house physicians connected with the hospital, after examining the foot, concluded that prompt surgical treatment was necessary, and telephoned defendant, who was assistant surgeon of the railroad upon which the boy had been injured. The defendant arrived in thirty minutes and found the boy unconscious, with a weak pulse and dilated pupils. He asked the boy's name and residence, and if any relatives were present, but was informed that none was present. After consultation with the four house physicians, it was agreed by all that an immediate amputation was necessary to save the boy's life.

The operation was performed and the boy recovered, and afterward brought suit against the surgeon, claiming that the foot should not have been amputated at all, and particularly without first obtaining his consent, or the consent of his parents, who went to the hospital as soon as possible after learning of the accident.

At the close of the trial a verdict was directed for the defendant, and, upon appeal, the judgment was sustained by the Supreme Court.

It appears that plaintiff attempted to establish his first contention, that amputation was unnecessary, by the testimony of two physicians, who testified that in their opinion the foot might have been saved. Doctor Gottman, one of the physicians who had examined the foot the day after it was amputated, testified that in his practice he had treated one case

like plaintiff's, and that he had never done any amputating of the lower extremities, except a toe. Upon cross-examination he testified in part as follows:

Q. Suppose the injury was so severe that the circulation had ceased, would you clean the wound, and leave it? A. If the bone were all crushed and the parts all torn and I saw no chance, I would amputate. Q. Would you form your own opinion and judge whether amputation was necessary or not? A. I would call in counsel. I would not rely upon my own judgment. I would talk it over. Other people might see things differently than I did. Surgeons have differences of opinion. With proper consultation, it is a question which is the best course to follow under certain circumstances. I would call at least one surgeon, and if I was not satisfied with his statement, I would call another. We would talk it over and consider it. Q. Would you take their judgment? A. Certainly, we would talk it over and consider it. We are often in doubt in medicine. Q. There are conditions in emergency where a surgeon is confronted with dirt, and a serious wound to the lower extremities, for instance, the foot, where it is a matter of grave doubt, and requires calm judgment as to whether an amputation should be immediately performed or not? A. If the foot is all crushed and the bones crushed and the circulation destroyed, it is all splinters, and the tissues are all gone, a lot of the tissues destroyed, then I would say, perhaps it would be necessary to amputate, but perhaps not immediately, because there is no immediate hurry in the amputation of a foot of that kind, not within eight or ten hours, I don't think; I don't know of any exception. . . . I would not always want to depend upon my own judgment, when and where and how an amputation should be made in all cases. There are cases where amputation of the leg is necessary. It is for the surgeon to determine whether it is necessary or not, and he bases his determination on his best judgment. Q. It is a matter for the judgment and determination of the surgeon as to what time and in what manner and in what method an amputation should take place? A. I do not know how to answer it. (Question repeated.) . . . There is only one way to answer it, and that is by, "Yes." Q. Your answer is, "Yes"? A. Yes, sir. Q. A surgeon must determine, must he not, when an amputation shall be performed, and from his judgment from all the circumstances of the case? . . . A. I will answer that, "Yes." After he takes all the facts into consideration, then he may be wrong in his judgment. Q. And it is up to him, therefore, to determine from what he can learn of the case, and what he can see of the injury, to what extent the danger of blood poisoning is imminent? A. Yes, sir.

(To be concluded.)

News Items.

Twenty-fifth Anniversary of the Medical Society of the Missouri Valley.—The "silver jubilee" of this society will be celebrated at Council Bluffs, Iowa, on September 5th and 6th, under the presidency of Dr. J. M. Bell, of St. Joseph, Mo. A reunion of charter members is planned, and many past presidents will attend.

Malaria Commission.—At the recent annual meeting of the Southern Medical Association, held at Hattiesburg, Miss., a special commission was appointed for the study and prevention of malaria in the South. Captain Charles F. Craig, of the army medical corps, is chairman of the commission, and the work of obtaining and tabulating information regarding the prevalence and the methods now in use for the prevention of malarial fever in the South will be started at once.

An Amendment to the Pure Food and Drugs Act.—The *Sherley* amendment to the Pure Food and Drugs act was passed unanimously by the House on August 19th. The misbranding prohibitions contained in the pure food law are confined to the contents of the package, and the proposed amendment will enable the Department of Agriculture to prosecute any person selling a drug with false and deceptive statements upon the label of the package relative to the drug's curative effect.

Tetanus in the United States.—During the week ending July 27, 1912, deaths from tetanus were reported as follows: Baltimore, 1; Chicago, 1; New York, 2; Pittsburgh, Pa., 1; South Bethlehem, Pa., 1; Wilmington, Del., 1; Wilmington, N. C., 1. During this time one case was reported in New Castle, Pa., and one in South Bethlehem, Pa.

A Note to Surgeons Familiar with Transfusion.—Surgeons who have performed direct transfusion of blood, are requested to send report of their cases to Dr. A. L. Soresi, 75 West Fifty-fifth Street, New York, who is completing a work on the clinical value of transfusion. Full credit will be given to each surgeon for his cases. Special request is made for the report of unsuccessful cases.

New Eye Hospital in New York.—Plans are being prepared for a new eight story building for the New York Ophthalmic and Aural Institute, the cost of construction of which is estimated at \$200,000. Dr. Arnold Knapp, the director, is now in Europe studying the methods of treatment used by European ophthalmologists, and the new hospital will be equipped with all the most modern appliances.

Naval Medical Reserve Corps.—A bill "to increase the efficiency of the Medical Department of the United States Navy" was passed by the Senate on August 12th. The bill provides "that a Medical Reserve Corps, to be a constituent part of the medical department of the navy, be established under the same provisions, in all respects (except as may be necessary to adapt the said provisions to the navy), as those providing a medical reserve corps for the army, and as set forth in the act to increase the efficiency of the Medical Department of the United States Army, approved April 29, 1908."

The Plague Situation.—The outbreak of plague seems to be well under control. No more plague infected rats have been found in New Orleans, although many rats have been caught daily and examined. In Porto Rico one case of plague was reported on August 6th, but from August 7th to 13th no case occurred, making but one case in Porto Rico during the eight days, and up to August 13th a total of 47 cases were reported, of which 32 occurred in San Juan. In Cuba the last case of plague was reported on July 22; many rats are being caught daily and examined, but so far, no plague infected rat has been found in Havana. In Galveston, Texas, the work of catching rats is being continued, and all rats caught are being examined for plague infection. Surgeon General Rupert Blue, of the Public Health Service, has issued special instructions to quarantine officers regarding the treatment of vessels for the destruction of rats upon arrival at United States ports.

Personal.—Dr. S. J. Young, of Valparaiso, Ind., has recently been commissioned first lieutenant in the Medical Reserve Corps of the United States Army.

Dr. Wade H. Frost, assistant surgeon in the United States Public Health Service, has been sent to Buffalo to investigate the outbreak of poliomyelitis in that city.

Dr. James G. Mumford, of Boston, has been appointed surgeon in chief of the hospital at Clifton Springs, N. Y.

Dr. E. F. Bashford, of London, director of the Imperial Cancer Research Fund, will deliver the Middleton-Goldsmith lectures before the New York Pathological Society on October 2d, 3d, and 4th, also the von Leyden Memorial lecture in Berlin, on October 21st.

It is reported that Colonel William C. Gorgas has declined an invitation to become secretary of the Boston Board of Health.

Dr. Theobald Smith, professor of comparative pathology at Harvard University, delivered his last lecture as visiting professor to the University of Berlin on June 23d.

Dr. Arthur I. Kendall, instructor in preventive medicine in the Harvard Medical School, has been appointed professor of bacteriology at Northwestern University, Chicago. He will direct the work of studying tuberculosis and the means of preventing it, for which James A. Patten recently gave the university \$250,000.

Dr. Joseph A. Goodman, of Dixon, Ky., was appointed superintendent of the Eastern State Hospital at Lexington, on August 13th.

Dr. Harmon P. B. Jordan is the new assistant superintendent of Providence City Hospital.

Honorary Degrees Conferred by the University of Michigan.—At the recent celebration of the seventy-fifth anniversary of the University of Michigan, honorary degrees were conferred upon a number of graduates of the university and former members of the university senate. Among those who received the degree of doctor of science were Dr. John Elmer Weeks, professor of ophthalmology in the New York University and Bellevue Hospital Medical College; Dr. John Jacob Abel, professor of pharmacology in Johns Hopkins University, and Dr. Henry Sewall, professor of physiology in the University of Colorado. The degree of doctor of laws was conferred upon Dr. William Henry Howell, dean of the medical faculty of Johns Hopkins University; Dr. James Playfair McMurrich, professor of anatomy in the University of Toronto; Dr. Henry Smith, over twenty years professor of physics in the University of Michigan; Dr. Robert Simpson Woodward, president of the Carnegie Institution at Washington, and Professor Andrew Cunningham McLaughlin, of the University of Chicago.

American Electrotherapeutic Association.—The annual meeting of this association will be held in Richmond, Va., on September 3d, 4th, and 5th, with headquarters at the Jefferson Hotel. In addition to an excellent programme, consisting of the reading and discussion of forty-five papers on the therapeutical use of electricity and allied subjects, there will be an interesting and valuable exhibit of electrical and scientific apparatus. Dr. William Benham Snow, of New York, is chairman of the committee which has this exhibition in charge. The committee of arrangements, of which Dr. J. C. Walton, of Richmond, is chairman, has made ample preparation for the entertainment of the visiting members and their friends. The officers of the association are: Dr. William D. McFee, of Haverhill, Mass., president; Dr. F. Howard Humphris, of London, England, first vice-president; Dr. George E. Pfahler, of Philadelphia, second vice-president; Dr. Emil Heuel, of New York, treasurer; Dr. J. Willard Travell, of New York, secretary; Dr. Frederick M. Law, of New York, registrar.

Prizes Offered by the American Therapeutic Society.—On recommendation of the Council of the American Therapeutic Society, at the annual meeting of the society, held in Montreal, Canada, June 1, 1912, it was voted that prizes of \$250, \$150, and \$100 be awarded to the best reports on subjects relating to therapeutics, on the following conditions: 1. The competition is to be limited to qualified physicians in the United States and Canada. 2. The subject of the competition is to be limited to a substance or preparation which is official in the *United States Pharmacopoeia*. 3. The research may be either wholly laboratory or clinical, or laboratory and clinical combined, and must be conducted in a public institution. 4. The reports must be (a) designated by a distinctive word or motto, and (b) must be accompanied by a sealed envelope marked with the said word or motto, and containing the name and address of the competitor and of the laboratories or hospitals in which the research was conducted. (c) The report and protocol must be typewritten. (d) These must be in the hands of the chairman of the committee before April 1, 1913. 5. The reports and protocols are to be judged by a committee consisting of the three vice-presidents of the society, who shall decide which are the best reports as showing valuable therapeutic research, and shall return their decision, together with all the papers submitted to them, to the chairman of the council of the society, before May 1, 1913. 6. The chairman of the council shall then return the unsuccessful reports to their authors, and shall notify the successful author or authors. 7. The successful report or reports shall be read by the author, or a designated member of the society, on the first day of the meeting of the society, immediately after the president's address. 8. All matters connected with the competition shall be considered as absolutely confidential by the chairman of the council and the judges, except as to the successful competitors. 9. The vice-presidents as judges may fail to award any prize if the report or reports entered in the contest are not found to be of a sufficiently high standard. 10. In case any vice-president shall fail to act, the president of the society shall designate a substitute. Reynold Webb Wilcox, Thomas L. Satterthwaite, and Spencer L. Dawes, committee.

Pith of Progressive Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

August 8, 1912.

1. W. B. CANNON: Some Unsolved Problems of Gastroenterology.
2. LLOYD H. MILLS: Mexican Scorpions and Treatment of Scorpion Stings.
3. A. E. AUSTIN: Importance of Differentiating Catarrhs of Large and Small Intestine.
4. F. J. COTTON: Traumatic Rupture of Diaphragm with Other Injuries; Operation; Recovery.
5. TOM A. WILLIAMS: Multiple Cramps of Psychogenic Type in Telegrapher.
6. ROBERT B. OSGOOD, ROBERT SCOUTER, HERMANN BUCHOLD, and MURRAY S. DANFORTH: Report of Progress in Orthopedic Surgery.

2. **Treatment of Scorpion Stings.**—Mills says that the sting of a scorpion can cause death in animals and in men. The effects produced by the sting depend, 1, on the species of scorpion; 2, on the natural resistance of the victim; 3, on his age; 4, on his condition of health; 5, on the time of the year; 6, on the degree of exhaustion of the scorpion's poison gland; 7, on the time elapsing before treatment is received; 8, on the treatment itself. Certain human beings appear to have a natural resistance to scorpion poison. Scorpion blood contains protective substances which render the scorpion immune to its own poison, and these substances if injected early and in sufficient quantity aid markedly and promptly in relieving the urgent symptoms in human beings. At present the use of scorpion blood in quantity is impractical. It is not yet proved that the blood or the extract of the bodies of one species will aid in producing resistance to the poison of all other species. The symptoms that follow severe poisoning by a virulent scorpion are those of a grave serous meningitis, both symptomatically and pathologically. Treatment varies with the severity of the symptoms; in general it consists of 1, simple incision and the local use of evaporating lotions; 2, in severe cases, incision combined with lumbar puncture, which may be repeated if necessary, and the repeated hypodermic injection of scorpion blood to total about one c. c. to the kilo of body weight; 3, the internal administration of stimulants, such as black coffee and aromatic spirit of ammonia, or hypodermic and rectal stimulation if the patient is unconscious.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

August 10, 1912.

1. RUPERT BLUE: Problem of Public Health.
2. FRANK C. KNOWLES: Psoriasis familiaris.
3. JAMES M. WINFIELD: Lactic Acid and Colonic Irrigation in Treatment of Psoriasis.
4. CLYDE L. CUMMER and RICHARD DEXTER: Relation of Aortitis to Syphilis and Importance of Its Recognition.
5. A. R. MOORE: Fischer's Theory of Edema and Nephritis.
6. ANDREW J. FLANAGAN: Hospital's Need of Dental Staff.
7. H. S. HASLETT: Cleft Palates: With Special Reference to Closing of Surgical Cleft by Use of a Dental Appliance.
8. W. WAYNE BARCOCK: Acute Osteomyelitis of Jaw.
9. ROBERT H. COLE: Duboseq Colorimeter as Means of Estimating Hemolysis in Wassermann Reaction.
10. RUSSELL A. HIBBS: Operation for Pott's Disease.
11. LAURA H. BRANSON: Physical Injuries as Results of Hydrofluoric Acid.
12. HERBERT D. KISTLER: Thrombophlebitis of Left Leg.
13. O. LEGRAND STIGGELT: New Simple Apparatus for Intravenous Administration of Salvarsan with Saline Preceding and Following.
14. GAYLORD W. GRAVES: Pocket Case for Full Blood Pipettes.
15. FRANCIS B. JACOBS: Determination of End Reaction in Estimation of Glucose.
16. JOHN W. HUNTER: New Method of Using Fehling's Solution.
17. KENNETH TAYLOR: Method by Which Living Organisms Can Be Photographed.
18. SIDNEY L. OLSHO and CHARLES R. HLED: Unsuspected Melanosarcoma of the Choroid.
19. ALANSON W. HAWLEY and JOHN B. MANNING: Sarcoma of Cerebellum in Boy.

20. FRANK N. VRAAGER: Ectopic Gestation at Full Term with Fetus Carried in Abdomen for Thirty-five Years.
21. ARTHUR A. HEROLD: Virulent Case of Epidemic Cerebrospinal Meningitis.
22. JACOB ROSENBERG: Disturbing Factor in Lieben's and in Gumbler's Test for Acetone in Urine.
23. THOMAS W. DORSETT: Syphilis Complicated with Uncinariasis.
24. AL A. THURMDEAL: Strophoctes in Mouth.
25. LLOYD O. THOMPSON: Simple Refrigerator for Laboratory Workers.

1. **The Problem of the Public Health.**—See this JOURNAL for June 8, page 1230.

2. **Psoriasis Familiaris.**—Knowles concludes that psoriasis is not hereditary, seldom more than one case being found in a family; exceptionally, six instances, in hundreds of cases examined, were discovered. Psoriasis familiaris is comparatively unknown in dermatological literature. Although the etiology of psoriasis is still unknown, cumulative evidence indicates a parasitic origin.

3. **Lactic Acid and Colonic Irrigation in the Treatment of Psoriasis.**—Winfield has given lactic acid in psoriasis, believing that the disease was due to autoinfection and disturbed metabolism, caused by putrefaction and fermentation of the contents of the intestines. Combined with this, he has given high colonic irrigations, for the reasons that psoriatics are more or less constipated, and because the presence of mucus and shreds in the stools indicated a low degree of inflammation of the mucosa of the lower bowel. Using control cases to test out the treatment, he found that the cases treated by colonic irrigation responded more readily than the controls.

4. **Relation of Aortitis to Syphilis; Importance of Its Recognition.**—Cummer and Dexter conclude that a large proportion (seventy to seventy-five per cent.) of lesions of the aortic valve, or of the aorta itself, have their origin in syphilitic infection. Syphilitic aortitis is a definite pathological and clinical manifestation of syphilis, usually coming late after the disappearance of the early manifestations following a long period of latency. Occasionally aortitis is associated with syphilitic cerebrospinal manifestations. A careful examination of the chest, especially in the region over the aorta, should be made in all cases where chest pains and dyspnea are present. An x ray examination is advised where the findings are suggestive or doubtful. A Wassermann test should be made as soon as the diagnosis of aortitis is clear. Urgent mercurial treatment is indicated if the reaction is positive.

5. **Fischer's Theory of Edema and Nephritis.**—Moore briefly states the reasons for Fischer's theory: Fibrin dissolves in acid or in alkaline, but not in neutral solutions, and this is what occurs in the cells of the nephritic organ, thus liberating albumin in the urine. Moore observes that the secreting cells of the kidney must be acid in reaction to preserve the analogy. Furthermore, as shown by Höber's tables, the urine from nephritides is abnormally acid. Moore fails to see that the abnormal acidity of the urine could indicate the acidity of any part of the body such as the kidneys. Finally, artificial albuminuria may be produced in rabbits by injecting them with sufficient quantities of decinormal hydrochloric acid. The experimental basis for Fischer's theory of edema and nephritis is exceedingly slender, and his theory has no present place in medicine.

11. Physical Injuries as Results of Hydrofluoric Acid.—Branson finds that hydrofluoric acid may cause local necrosis of the tissues, or it may be absorbed and act as a poison, the amount of tissue destroyed being great in comparison with the amount of acid used, and the action of the acid not stopping at the surface, but penetrating deeply into the synovial membranes and periosteum. Although a comparatively small area may be involved, resolution and repair are tedious and delayed. Finally, external application of the acid may produce shock and collapse because of the peculiar penetrating nature of the pain, accompanied, as it is, by most intense disturbances of the nervous system.

MEDICAL RECORD.

August 10, 1912.

1. CHARLES E. WOODRUFF: Birth Rates, Overpopulation, and Cost of Living.
2. WM. HANNA THOMSON: Sporadic and Epidemic Poliomyelitis.
3. PEARCE KINTZING: Persistence of Certain Racial Characteristics.
4. ALFRED MEYER: After Care of Discharged Cases of Pulmonary Tuberculosis.
5. FRANCIS A. FAUCHT: Insurance Examiners and Blood Pressure Test.
6. HORACE GREELY: Race Resistance.
7. AUGUSTUS A. ESHNER: Exophthalmic Goitre.
8. S. J. WILSON: Henoch's Purpura Treated with Human Blood Serum; Recovery.

3. The Persistence of Certain Racial Characteristics.—Kintzing lays down two anthropomorphic principles: 1. In the transmission of physical characteristics of development, those that are especially marked and prevalent in the one race are most apt to be transmitted to the offspring in the event of sanguineous racial admixture, though with some modifications, even when such transmission is seemingly contrary to the general trend of evolution. These variations are found in the osseous system, pigmentation, body odor, the color of the iris and sclerotics, and to a less degree, to the appendages, hair, teeth, and nails. 2. A much greater range of variations is found in the male than in the female. In addition to these principles of transmission, the traits of the stronger parent prevail. The writer calls attention to less known variations, especially in the negro, such as the changes in the alar cartilages of the nose, the pigmentary deposits about the genitalia and in other localities, the relative length of the femur to the tibia, the stretch, the shape of the hairs, and particularly the variations in the nails. While the stigmata may be recognized in the third, and but rarely in the fourth generation, there is no positive sign whereby a very attenuated strain of negro blood may be asserted, notwithstanding a prevalent idea to the contrary.

4. After Care of "Discharged Cases" of Pulmonary Tuberculosis.—Meyer discusses the problem as to what shall be done with the tuberculous patients who have been discharged from institutions and sanatoria, and how to serve best the interests of the patient, his family, and the community. He advocates the establishment of farming and industrial colonies, either as annexes to existing sanatoria, or by the founding of such colonies as independent enterprises, by public and private philanthropy. The writer states his preference for the former plan. As to the vagrant and alcoholic cases, whose number is very large, he suggests compul-

sory segregation, possibly at the Riverside and Metropolitan Hospitals. The ways and means incident to his suggestions is a social question to be solved by the social engineer. The medical responsibility ends by prescribing what should be done.

6. Race Resistance.—Greely states as an axiom that the degree of resistance of any race is directly proportioned to what may be called its natural education to the requirements of its environments. In all localities, from the tropics through the temperate zone and farther, newcomers are more apt than natives to fall victims to any prevailing disorder; residence for a few years even may increase individual resistance to a measurable degree. Constant exposure to a particular disease produces constantly increasing immunity. Those who at the start possess the greatest immunity transmit it to their offspring, who are in turn exposed to similar trial, possible increase, partial transmission, and restimulation, and this is repeated through the ages till a more or less general immunity to the malady is attained. The Jews enjoy a greater vitality than any other race, at least under modern world conditions, a reward for the long suffering of their ancestors.

7. Exophthalmic Goitre.—Eshner reviews the fact that this disease was long ago looked upon as a blood dyscrasia or a circulatory disorder or a nervous affection, but the present idea is that it is due to excessive functional activity of the thyroid gland, which results in varied derangements through the agency of a suppositious internal secretion. The various methods of treatment are mentioned, consisting of drugs, animal extracts, the blood serum, and milk of thyroidectomized animals, the serum of animals treated with hypertrophied thyroid gland, electricity, rest, and the various surgical methods, resection of the cervical sympathetic, ligation of the arterial supply of the thyroid, and partial thyroidectomy. Much was looked for in the preparations or derivatives of the adrenals or of the posterior portion of the hypophysis, as physiological antagonists, but hopes have not been realized. The writer has had best results from strophanthus, with or without sedatives (bromides), and with the rest treatment, and these yielding unsatisfactory results, from resection of the thyroid gland.

8. Henoch's Purpura Treated with Human Blood Serum.—Wilson reports this disease in a boy of nine years, which was treated by subcutaneous injection of serum from his father's blood. Three injections of forty-five c. c. were given, and two of 90 c. c. This condition arose from the absorption of toxins from ulcerated tonsils, which toxins are called endotheliolysins, and which cause disintegration of the endothelial cells of the blood-vessels, allowing an escape of blood. The fresh injected human serum produces a renewed supply of protecting substance to the endothelial cells, disintegration of the cells, and extravasation of blood ceases. The serum may be administered locally, intravenously, or subcutaneously. The last is the most convenient, the dose being usually from twenty to forty c. c. daily, but forty-five to ninety c. c. may be given each day.

LANCET-CLINIC.

July 6, 1912.

1. ANTHONY D. DUNN: Acute Edema of Kidney, Variouslly Designated as Acute Parenchymatous Nephritis, Acute Cloud-Swelling, Acute Parenchymatous Degeneration, etc.
2. W. E. GRANT: President's Address at Annual Meeting of American Association of Medical Examiners.
3. HOWARD F. HANSELL: Transient Blindness, Complete in One Eye, Partial in Other, with Double Optic Neuritis.
- July 13, 1912.
4. EUGENE L. FISK: Physical Welfare of Policyholders.
5. WILLIAM SAGEL: Amblyopia Dysmetropia.
6. K. L. STOLL: Schiotz's Tonometer.
- July 20, 1912.
7. RALPH RIFE: Theory and Technique of Psychoanalysis, Case of Obsession Neurosis.
8. W. D. HAMILTON: Goitre or Graves's Disease.
9. JOHN E. GREIWE: Electrocardiogram.
- July 27, 1912.
10. A. T. GILLARD: Urinalysis; Relation to Medical Examination.
- Work.
11. W. BLAIR STEWART: Trace of Albumin.
12. JAMES W. GUEST: Value of Urinalysis at Home Office in Case of Application for Life Insurance.

1. Acute Edema of the Kidney.—Dunn concludes a dissertation upon this subject by remarking that the parenchymatous nephritides, acute and chronic parenchymatous degenerations, cloudy swelling, etc., are essentially edemas, and hence symptomatic of an underlying cause. Excessive acid accumulation, or acid production in the kidney, is the immediate cause, and all treatment must tend toward neutralizing this acid and the removal of the source or cause of the increased acidity. Though a symptomatic treatment the hypertonic saline-alkaline treatment is effective. On account of the colloidal conception of nephritis we must search for the underlying causes of the acidity. Finally, the value of blood incorporated in casts is suggested as a diagnostic point in differentiating acute edemas of the kidney accompanied by pain from renal calculus.

3. Transient Blindness, with Double Neuritis.—Hansell reports a case, which, if not of traumatic origin, was possibly aggravated by a fall, the patient striking his head. In the line of treatment, decompression of the skull was considered, but rejected, and lumbar puncture was made and several ounces of clear cerebrospinal fluid were withdrawn. Immediate improvement in vision resulted from this operation. Following this, one half drachm of mercury by inunction and small doses of potassium iodide were given, twice daily. After three weeks, vision was R, 20/200; L, 20/100; the neural and retinal edema had entirely disappeared, and the normal ocular rotations restored, although the right seemed on a lower plane than the left. In about four months the visual acuity was R, 20/40; L, 20/30; orthophoria. Although the retinal veins were still tortuous, there was no edema. The discs were a trifle pallid on the temporal sides.

5. Amebic Dysentery.—Scott reports two cases of amebic dysentery at length, one of which ended in recovery. After the restricted diet, prescribed by the writer, it was replaced by one consisting of "cornbread, some bacon, and a glass of beer," the same being initiated and carried out by the patient during the doctor's enforced absence. The latter's explanation of the cure was that the disease had run its course, but the patient claimed credit for the diet. The second case was treated at first with rectal irrigations of quinine and warm water (one to 2,000). The first trial was favorable in its results, but the second proved so irritating that it was

abandoned. From analogy of the action of thymol in hookworm disease, the writer argued a probable favorable action from the remedy in the case in hand. Five grains were given every three hours, and improvement following the first dose, the treatment was continued for forty-eight hours, when the bowels ceased to act, and became quiet. A slow but steady convalescence followed, with no return of the disease after eighteen months.

8. Goitre or Graves's Disease.—Hamilton lays stress on the necessity of a careful study of the neck in all goitre cases, whether simple or exophthalmic. A degenerated portion of the gland, if removed, may be all that is necessary. Simple ligation has yielded happy results in many cases, though many of them ultimately required partial thyroidectomy. An increase in strength and weight (fifteen to thirty pounds), some diminution in the vascularity of the neck, diminished tremor, nervousness, mental depression, and lassitude have been observed. As a rule, patients in whom the various operations upon the thyroid gland have been done, do not fail to notice their improved condition; more often the result is a practical cure.

11. A Trace of Albumin.—Stewart stigmatizes the trace of albumin in the urine as the "red flag of danger," a condition demanding searching investigation. He gives preference to the pure nitric acid ring test, allowed to stand for not less than ten minutes, and confirmed always by the comparative layer heat and acid test. In these cases he advises at least three specimens, taken at different times of day, before final report is given as being just not only to the company, but also to the applicant. The importance of the proper use of the centrifuge microscope in these cases is emphasized. The type of trouble may be differentiated by the character of crystals, amorphous bodies, epithelial cells, blood, pus, bacteria, casts, and other features. The presence of hyaline casts does not always indicate serious organic changes, but granular and epithelial casts do indicate organic disease, if present in any quantity. The writer calls attention to the importance of using the sphygmomanometer in every albumin case, as the presence of the latter with high blood pressure is indicative of organic renal disease. High blood pressure with diminished excretion of urea is usually associated with organic disease of the kidney.

LANCET.

August 3, 1912.

1. T. C. ALLCOTT: Interrelation of "Social Organism."
2. E. H. SHAW: Value of an Examination of Blood.
3. A. M. FRASER and HILDA CLARK: Municipal Dispensary and Tuberculin Treatment.
4. E. D. TELEBARD: Treatment of Habitual Dislocation of Shoulder Joint.
5. C. RUSS: Some Observations Concerning Syphilitic Sera.
6. H. CAMPBELL: Observations on Neuron (Part I).

3. Tuberculin Treatment.—Fraser and Clark have attempted to employ tuberculin in the treatment of the majority, if not all the patients coming to the dispensary. During the year 433 patients were admitted for tuberculin treatment. At the time of the publication of the paper 233 remained under treatment. Eighty-nine have been discharged, cured or much improved. In six of these less than three months of treatment was required. Twenty-six have got worse or have failed to im-

prove. All of these were very advanced cases. Of 120 cases discharged, 87.5 per cent. in the first stage of pulmonary disease have become arrested. Of those in the second stage, 84.8 per cent. were improved. In the third stage, the advanced cases, 58.3 per cent. were improved. Of those with laryngeal involvement, in addition to pulmonary disease, 100 per cent. in the first stage showed improvement; 87.5 per cent. in the second, and 63.6 per cent. in the third stage have improved. Only eleven of the 120 have ended fatally, nine being discharged as worse than on admission. The authors have endeavored to raise the tolerance of the treated patient up to one, or even two c. c. of old tuberculin (human) at a single injection. In their conclusion they remark that if success is to be had, the plan, of which the dispensary forms the centre, must include a hospital, a sanatorium, open air residential schools, home supervision, a care committee, and many other accessory measures.

4. **Habitual Dislocation of the Shoulder.**—Telford believes that the only successful way of treating this condition is by means of open operation. He abducts the arm as far as a right angle and makes a curved incision, seven or eight inches long, in the line of the anterior axillary fold. The lower edge of the pectoral muscles is retracted upward, and the axillary vessels and nerves are gently drawn inward; the anterior circumflex artery may have to be divided. The separation downward of the fibres of the coracobrachialis muscle obviates harmful traction on the musculocutaneous nerve. The arm is now rotated outward and the head of the humerus is thrust forward, bringing the subscapularis tendon into the floor of the space between the neurovascular bundle and the coracobrachialis. The capsule of the joint is then exposed by separation and division of the fibres of the subscapularis. From the anterior aspect of the capsule a large oval piece, 1.25 by 0.5 inch, is removed, its long axis lying transversely to the fibres of the capsule. Foreign body or other abnormality of the joint cavity may thus be discovered and corrected. The incision in the capsule is then closed by formaldehyde solution gut sutures, and that in the tendon of the subscapularis is similarly repaired. The wound is closed without drainage, and the arm is fixed to the side for eight days. The sutures are then removed and passive and active movements are begun in all directions except abduction. At the end of the third week movements of abduction are started. The results of this method are excellent.

5. **Syphilitic Sera.**—Russ observed that serum from syphilitic patients possesses far greater power of dissolving the agglutination of red cells caused by ferric chloride than does normal serum. He suggests the possibility of the development of this fact into a test for the disease.

PROCEEDINGS OF THE ROYAL SOCIETY.

June 14, 1912.

1. W. S. LAZARUS-BARLOW: Presence of Radium in Some Cutaneous Tumors.
 2. EDWARD C. HORT and W. J. PENFOLD: Critical Study of Experimental Fever.
 3. CLIFFORD DOBELL: Systematic Position of Spirochetes.
 4. CECIL REVIS: Production of Variation in Physiological Activity of *Bacillus coli* by Use of Malachite Green.
 5. E. C. SNOW: Influence of Selection and Assortative Mating on Ancestral and Fraternal Correlations of Mendelian Prolation.
 6. WM. H. WOOLSEY: Nature of Immune Reaction to Transplanted Cancer in Rat.
 7. B. R. G. RUSSELL: Manifestation of Active Resistance to Growth of Implanted Cancer.
 8. FREDERICK KEEBLE and E. FRANKLAND ARMSTRONG: Distribution of Oxidases in Plants and Their Role in Formation of Pigments.
 9. F. P. KNOWLTON and E. H. STARLING: Nature of Pancreatic Diabetes (*Experimental Diabetes mellitus*).
 10. J. W. W. STEPHENS and H. E. PARHAM: Measurement of *Trypanosoma rhodesense*.
 11. MURIEL ROBERTSON: Some Flagellate Infections Found in Certain Hemiptera in Uganda.
 12. MURIEL ROBERTSON: Certain Aspects of Development of *Trypanosoma gambiense* in *Glossina palpalis*.
1. **Radium in Carcinomatous Tumors.**—Lazarus-Barlow, in experiments with the electroscope, found that of five nonmalignant and twenty-eight malignant tissues examined, three cases of primary and one case of secondary carcinoma yielded sufficient evidence that radium was present.
2. **Experimental Fever.**—Hort and Penfold report experiments which tended to show that the existence of "water fever," "salt fever," "sugar fever," "ferment fever," and "tissue fever," due to intravenous injection of water or of solutions containing the substances mentioned, no longer rests on secure ground. They ascribe the rise in temperature produced in each instance to the presence of a heat stable, fever producing body, which is held back by Martin's gelatin filter, and is therefore a colloidal substance in a fine state of dispersion.
3. **Systematic Position of Spirochetes.**—Dobell concludes that the spirochetes must be classified with the bacteria, and suggests that the "granules" and "spores" described by several workers in various spirochetes are in reality coccus forms of these bacteria.
4. **Resistance to Growth of Cancer.**—Russell found by experimentation with mice that tumor parenchymata vary widely in their power of inducing resistance to cancer subsequently implanted. The individuality of the animal inoculated may contribute to the development of resistance, although not to so marked a degree as the tumor parenchyma. Simultaneous inoculation of a tumor strain which induces no resistance and a strain which does, may be followed by marked inhibition of the growth of the former strain. Mice bearing progressively growing tumors can be rendered resistant to reinoculation, but the tumor first inoculated need not necessarily be affected. The results obtained support the view that immunity to cancer is directed mainly against the stroma eliciting properties of the cancer cell.
5. **Nature of Pancreatic Diabetes.**—Knowlton and Starling, in experiments with the isolated heart and lungs of dogs, found that the normal heart, fed with normal blood under approximately physiological conditions, consumes about four milligrammes of sugar in an hour and to each gramme of heart muscle. On the other hand, the consumption of sugar by the heart of a dog rendered diabetic by pancreatectomy from three to six days previously was either minimal or, more probably, entirely absent, where the heart was fed with blood from the diabetic animal. Where normal blood was used to feed the diabetic heart there was considerable sugar consumption, and where diabetic blood was used for the normal heart, the amount consumed was but slightly below normal at first, and steadily diminished during the succeeding

ing hours. From these findings the authors conclude that the tissues and blood normally contain some substance which is essential for the direct utilization of sugar by the tissues; this substance is gradually used up in the tissues, and therefore has to be continually replaced from the blood. Addition of pancreatic extract to diabetic blood that is being fed to a diabetic heart was found to cause a marked increase in sugar consumption; whence the authors conclude that the pancreas furnishes normally a hormone enabling the tissue cells to assimilate and utilize the sugar of the blood.

AUSTRALASIAN MEDICAL GAZETTE.

June 20, 1912.

1. R. HAMILTON RUSSELL: Knee Joint Problems.
2. I. E. ELLIS: Gastroenteritis.
3. A. J. PARKS: Stone in Ureter.
4. FRANK TRATMAN: Nasopharyngeal Fibroma.
5. C. H. E. LAWES: Long Umbilical Cord.

5. **Long Umbilical Cord.**—Lawes records a case in which the umbilical cord was thirty-nine inches long.

BULLETIN DE L'ACADÉMIE DE MÉDECINE.

July 2, 1912.

1. MOTAIS: Wine, Cider, and Gout.
2. G. MARINESCO and J. MINEA: Culture of Mammalian Soma Ganglia *in vitro* According to Carrel's method.

1. **Wine, Cider, and Gout.**—Motaïs reports eight cases of gout in which the beneficial effect of cider, when substituted for wine as an exclusive beverage, was clearly shown. The acute attacks either ceased entirely or became much less frequent, even, in three instances, where tophi were already present. Where wine (Bordeaux or Burgundy) was resumed, and cider discontinued, an attack soon took place. In several patients in whom restriction to mineral waters had yielded but slight benefit, cider proved far more efficacious. The author believes that in conjunction with a rational diet and exercise, the use of cider is a useful therapeutic measure in gout. Cases of gouty episcleritis and iridochorioiditis were very favorably influenced, the attacks diminishing in severity and ultimately disappearing. The cider used by the patients was of a light variety, with one third volume of water added immediately after the making, and sufficiently fermented to be "dry" and therefore easily digested. The beneficial effects are perhaps ascribable to the action of the contained malic acid and malates on the uric acid and urates. Diuresis does not appear to play an important rôle. Motaïs agrees with Rendu that the harmful effect of wines in subjects predisposed to gout is not due to the alcohol contained, for the following reasons, *viz.*, that in cider producing regions, where gout is rare, much strong liquor is drunk; that gout prevails among the wealthier classes, whereas the most alcohol is taken by working men and peasants; that in one of the author's cases, where cider proved strikingly beneficial, the amount of pure alcohol taken in the cider at each meal was the same as had previously been taken in wine; that in beer drinking countries, where the percentage of alcohol present in the beer is generally as low as in cider, gout is rife, and finally, that gout is only occasionally a manifestation of alcoholism.

2. **Cultivation of Spinal Ganglia in Vitro.**—Marinesco and Minea found that fragments of

spinal ganglia from rabbits and kittens could not only be kept alive for about two weeks by Carrel's technique, but showed neoformative changes resulting in the production of numerous fine fibrils which grew for considerable distances in the plasmatic medium. In close association with these fibrils were developed fusiform supporting cells, which seemed to conduct and perhaps even nourish the fibrils in their progression toward the periphery of the cultures.

LYON MÉDICAL

June 25, 1912.

1. J. P. MORAT: Noix de Goutte (C. *inchoate*).
2. L. GALLAVARDIN and A. DUMAS: Complete Arrhythmia and Auricular Fibrillation (To be concluded).
3. L. GALLAVARDIN and A. DUMAS: Complete Arrhythmia and Auricular Fibrillation (Concluded).

2 and 3. **Complete Arrhythmia and Auricular Fibrillation.**—Gallavardin and Dumas affirm that while complete ventricular arrhythmia is doubtless simply the result of interference, by partial heart block, with the transmission to the ventricles of much more numerous contractile stimuli originating above, it is not at all certain that, as commonly believed, these stimuli from above arise in the fibrillary contractions of the auricles. The authors believe, on the contrary, that these stimuli originate in some regularly and very rapidly discharging centre, independent of the musculature of the auricle and coming into action when fibrillation occurs in the latter. Whether this hypothesis or the other is the true one, it is the incomplete and irregular transmission of the excessively frequent stimuli through the bundle of His—which is not calculated for conducting two or three hundred impulses a minute—that produces complete ventricular arrhythmia. This form of arrhythmia does not by any means invariably indicate imminent cardiac failure, and, on the other hand, cardiac failure is frequently met with in the entire absence of arrhythmia. The authors discuss further the clinical relations and significance of complete arrhythmia, and emphasize the value of digitalis in its presence. By diminishing the number of stimuli passing through the auriculoventricular bundle, this drug lowers the rate of contraction of the ventricles and thereby increases their functional efficiency.

PARIS MÉDICAL.

July 27, 1912.

1. MAURICE PERRIN: Declaration of Cause of Death Contrary to Law of Professional Secrecy.
2. P. CARNOT and BAUFIE: Simple Means for Estimating Ascitic Tension.
3. CATHELIN: Precocious Diagnosis of Adenomatous and Carcinomatous Prostatitis.
4. HORN: Climate of Haute Engadine.
5. DOPFER: Bacteriological Diagnosis of Epidemic Cerebrospinal Meningitis.

3. **Early Diagnosis of the Nature of Prostatitis.**—Cathelin points out how by rectal examination a simple prostatitis may be distinguished from a carcinomatous one. 1. The simple form gives a very large gland, the malignant a smaller one; 2, the simple enlargement is spherical in shape, pasty in consistence, and makes an appreciable swelling into the rectum, sometimes rendering defecation difficult, while the malignant form is more flattened and is of a wooden hardness; 3, the benign tumor

is regular, the carcinomatous characteristically irregular, and divided into a number of nuclei, all of ivory hardness, and apparently deeply seated in the gland; 4, in simple adenoma the median furrow of the prostate is still discernible; 5, very important is the fact that in the mild form, one can easily introduce the finger between the gland and the lateral bony wall of the pelvis, whereas in the carcinoma these lateral furrows are obliterated, and the gland and the bone seem to be united. As to symptoms, in the benign prostatitis, hematuria is frequent, pain is rare, and retention is common; in carcinoma, hematuria is absent, pain is common, and retention does not occur. Early diagnosis is of great importance in these cases, for a cancerous prostate is of long duration, although not amenable to surgery, and the patient is likely to believe his adviser is mistaken.

PRESSE MÉDICALE.

July 20, 1912

1. L. LAGANE: Pituitary Medication.
2. O. JOSÉ: New Conceptions of the Venous Pulse.
3. PIERRE-JEAN MENARD: Tonic Quality of Mineral Waters Used Locally.

July 24, 1912.

1. **Pituitary Medication.**—Lagane points out that the difficulty of ablation of this gland has not made study of its exact rôle easy, and we do not yet know the precise properties of the anterior and posterior lobes respectively. Pituitary insufficiency, however, seems to be marked by hypotension, tachycardia, sensitiveness to heat, oliguria, anorexia, asthenia, loss of weight (sometimes obesity, but indirectly), tropic and psychic disturbances, insomnia, stunted physical and mental growth, backwardness, and lessened resistance to poisons. Hyperpituitarism, on the other hand, exhibits hypertension, polyuria, glycosuria, obesity, abnormal increase in red cells, gigantism, acromegaly, psychic disturbance, somnolence, genital insufficiency, and frequently hypothyroidism. Pituitary extract has therefore been tried in acromegaly with adiposogenital dystrophy, but the results have not been great. Its effect has been much more satisfactory in cases requiring heart tonics, raising of arterial tension, improvement of appetite, and increased diuresis. The extract is also useful in infections; it is a tonic to the muscles, an oxytocic, a laxative, and a stimulant to the gallbladder. It controls the symptoms observed after too active thyroid medication and after parathyroidectomy. The author thinks the extract might well be tried in cases of adenoid vegetation. It seems impossible to cause poisoning by ingestion of the extract.

2. **The Venous Pulse.**—José urges, in view of its faithful record of the condition of the heart, careful study of the jugular pulse.

SEMAINE MÉDICALE

July 31, 1912.

- F. VIDAL, L. AMBARD, and ANDRÉ WEILL: Renal Secretion of Chlorides in Edematous Nephritic Subjects.

Chloride Secretion.—Widal, Ambard, and Weill, from their studies of subjects with Bright's disease, conclude that it is to the damaged kidney that chloride retention is due; hence the edema and a true chloridemia in such patients.

BERLINER KLINISCHE WOCHENSCHRIFT.

June 3, 1912.

1. J. WOHLGEMUTH and Y. NOGUCHI: Experimental Contribution to Diagnosis of Subcutaneous Injuries of Pancreas.
2. A. BITTORF: Disturbances of Internal Secretion.
3. A. STRUBELL: Pharmacodynamic Problems.
4. E. ROSENTHAL: Prognosis of Puerperal Fever.
5. OVE STRANDBERG: Three Cases of Lupus vulgaris communis.
6. GEORG SHICKSMANN: New Experiences on Extraction of Foreign Bodies from Upper Part of Larynx and Esophagus.
7. J. PEISER: Phimosis and Hydrocele in Infancy.
8. VILT, JENSEN, and JOHANN FEILBERG: Clinical Importance of Hermann and Perutz's Syphilis Reaction Compared with Wassermann's Test.
9. F. ZIMMER: Neosalvarsan Reaction on Teeth.
10. GEORG WOLFSOHN and FRANK MARCUS: Necrobromatosis and Acromegaly.
11. A. HIRSCHBERG: Salicylic Acid Therapeutics in Gynecology.
12. TOUTON: Neosalvarsan Infusion without Reaction, Avoidance of Mistake with Water, and Combination Therapeutics in Syphilis.
13. HANS KERN: Which Indications Must We Accept for Internal and Surgical Therapeutics of Diseases from Gallstones Based upon the Investigation of the Pathologist Aschoff?
14. HANS SCHROKAUER: Oats Cure and Propagation of Sugar in Blood in Diabetes Mellitus.
15. HEINRICH DAVIDSOHN: Investigations on the Fat Splitting Ferment in the Gastric Juice and Quantitative Determination of the Same.
16. L. GOLDETZ and P. UNNA, JR.: Peroxydase and Catalysis in the Cell.
17. ERNST SCHLOSS: Pseudospecific Effects of Salts.

June 17, 1912.

18. ARTHUR MUNZER: Etiological Importance of Psychic Results in Diseases of Blood Glands.
19. A. EPHRAIM: Early Diagnosis of Primary Tumors of Lungs.
20. W. SENNERICKE: Etiology of Neurorecidives, Treatment with Neosalvarsan (To be concluded).
21. O. ROSENTHAL: Salvarsan.
22. K. E. ROEHKE: Importance of Salvarsan for Increase of Value of Immunization Sera.
23. GEORG ORTICIS: Syphilis of the Heart.
24. P. HAMPEL: Diagnosis of Echinococcus of Lungs.
25. OLAF THOMSEN and S. MAGNUSSEN: Specific Antibodies in Echinococci Diseases.
26. ERNST AUGUST LINDEMANN: Changes of Biological Characteristics of Tubercle Bacillus inside and outside Organism.
27. PAUL LAGERUS: Improvement of Blood with Radium Emanation and Technique for Measuring.
28. ERICH WOSIDLO: New Alimentaryum for Operations in Posterior Urethra.

June 24, 1912.

29. H. STRAUSS: Cures with Inulin in Diabetic.
30. G. DE REUBERLO: Simple Technique for Reading the Proportion of Hydrochloric Acid in Gastric Juice.
31. EMMO SCHLESINGER: Total Spasm of Stomach Proved Rontgenologically in Cholecystitis and Cholelithiasis.
32. R. MOHR: Effect of Hormonal.
33. W. SENNERICKE: Contribution to Etiology of Neurorecidives; Treatment with Neosalvarsan (concluded).
34. FRITZ M. MEYER: Addition to Article on Epiphann Reaction in Syphilis.
35. RICHARD MUHSAM: Stab Wounds of Brain Cured by Trephining.
36. ISKENDER AHMED: Diagnostic Importance of Bodies Inclosed in Leucocytes in Scarlet Fever.
37. PAUL MICHAELIS: Acute Nephritis after Iodmenthol Injection.
38. HANS LIESKE: Medical Law.

1. **Experimental Contribution to Diagnosis of Subcutaneous Injuries of Pancreas.**—Wohlgemuth and Noguchi have subjected subcutaneous injuries of the pancreas to an interesting experimental study. Although such injuries are rather rare, they sometimes occur from a bruise with a blunt instrument, for example, the tongue of a wagon. Diagnosis in such cases is rather difficult, and the authors' conclusions will therefore assist the surgeon. The authors state that when in such injuries an abnormal increase of diastases can be observed in the blood and in the urine, a diagnosis should be made of injury to the pancreas.

8. **Hermann and Perutz's Syphilis Reaction.**—Vilt, Jensen, and Feilberg compare the reaction proposed by Hermann and Perutz with the Wassermann test. The new reaction is a great deal more simple; only two preparations are necessary. The first consists of sodium glycocholate, 2.0 grammes; cholesterin, 0.4 gramme; alcohol, ninety-five per cent., 100 grammes. This can be kept on hand.

while the second preparation, consisting of a two per cent. aqueous solution of sodium glycocholate, should always be freshly prepared. After the serum has been prepared as in the Wassermann reaction, 0.4 c. c. of the serum is mixed with 0.2 c. c. of the first solution, to which distilled water in the proportion of one to twenty has been added, and of 0.2 c. c. of the second solution. After active shaking, the combination is placed in room temperature and a positive reaction shows itself in characteristic flocculi in the fluid. The size of these flocculi and their number, together with a high or low grade of sediment, will make the positive reaction a +, ++, or ++++. The authors have made 133 examinations with the Wassermann reaction, as well as the new reaction, and in 116 the result was the same, while in seventeen samples the Perutz reaction was negative, the Wassermann reaction weakly positive.

9. **Salvarsan Reaction on Teeth.**—Zimmern has taken into consideration the observation of Neisser, who stated that many patients noted severe pain in their teeth after salvarsan reaction, an observation which was also made by E. Hoffmann. Zimmern has noticed the same condition in patients with severe stomatitis, whose teeth were in a carious condition. The pain usually disappeared in about two hours. Zimmern believes that this toothache is to be attributed to the fact that spirochetes of the teeth and mouth are destroyed and toxins are liberated under the spirilloidal influence of salvarsan. He has not been able to verify this theory under the microscope, where the spirochetes were not less active after an injection.

12. **Neosalvarsan.**—Touton advises the use of neosalvarsan. He favors in cases in which, clinically as well as serologically, the presence of a great number of spirochetes can be suspected, subjecting the patient, first, to a light treatment with mercury, and, if necessary, with potassium iodide, and later to neosalvarsan. The neosalvarsan itself should be diluted with pure water, which is to be subjected twice to boiling and then to be used cold.

26. **Changes of the Biological Characteristics of the Tubercle Bacillus inside and outside the Organism.**—Lindemann observes that compared with other bacteria the tubercle bacilli are very constant in their biological characteristics. In a few cases with a long line of cultures, a severe diminution of the virulence has been observed. In some cases of human lupus bovine, as well as human tubercle bacilli, have been grown which show a greatly diminished virulence. A few of these bacilli presented an increase of their virulence after they passed through the bodies of cattle or rabbits. Similar observations were made with *persuchti* bacilli, which had been cultivated from tuberculous diseases of horses, that is, here also a diminution of the virulence presented itself. Finally, the author was not able to change the type of the tubercle bacillus.

ZENTRALBLATT FÜR CHIRURGIE.

July 27, 1912.

1. H. KEHR: Improved Drainage of Hematic Duct
2. W. F. JASENENSKY-WOLNO: Conduction Anesthesia of Sciatic Nerve
3. E. KONDOLEON: Operative Treatment of Edema of Elephantiasis
4. R. GÖTZEIT: Method of Irrigation in Purulent Peritonitis
5. C. SPRINGER: Maximal Dilatation of Rectum as Venæ Early
6. BLAUFL: After Treatment of Resection of Knee Joint.
7. R. VOGEL: Sterilization of Catgut

ZENTRALBLATT FÜR INNERE MEDIZIN.

July 13, 1912

JOHNS: Detection of Pentoses in Diabetic Urine.

Test for Pentoses in Diabetic Urine.—Jolles describes a method permitting the detection of traces of pentose in urines containing a high percentage of dextrose. In urine with five per cent. of dextrose or less, four grammes of phenylhydrazine hydrochloride and eight grammes of sodium acetate are added to 100 c. c. of urine, and the whole is heated for an hour over a boiling water bath. It is then well cooled, and the precipitate filtered off and placed in a beaker. Fifteen c. c. of hot water is added, the beaker is placed in a boiling water bath for five minutes, and the contents are then filtered. The filtrate is then distilled from a 400 c. c. distilling flask, the side outlet of which is cooled as in the ordinary Liebig condenser. Before heating, six c. c. of concentrated hydrochloric acid of specific gravity 1.19 is added and the upper outlet of the flask is closed with a rubber stopper. Six c. c. of fluid is then distilled off. To three c. c. of the product is then added five c. c. of Bial's reagent (one gramme of orcin dissolved in 500 c. c. of thirty per cent. hydrochloric acid, together with thirty drops of the official aqueous solution of ferric chloride), and the mixture is boiled for a short time. In the presence of only 0.05 per cent. of pentoses a distinct green coloration will appear. Where the urine tested contains five to ten per cent. of dextrose, the amounts of phenylhydrazine and sodium acetate used should be doubled.

ROUSSKY VRATCH.

May 5, 1912.

1. S. A. SUCHANOFF: Prolonged Warm Baths in Treatment of Insane, Past and Present.
2. B. N. CHOLIZOFF: Secondary Hemorrhage in Nephromy.
3. M. P. IZABOLINSKY and B. L. PATZEVITCH: Serum Diagnosis of Anthrax According to Ascoli.
4. I. S. MALINOVSKY: Synovial Sheaths of Dorsal Surface of Wrist
5. V. P. SEMENOFF: Clinical Significance of Determination of Coloidal Nitrogen in Urine by Salkowsky and Kojo Method, in Diagnosis of Cancer of Internal Organs.
6. M. P. ROUSSKY: Ventriectomy of Uterus as Complication of Subsequent Labors.
7. B. N. VOITOFF: So Called Traumatic Scarlatina and Scarlatoid Erythemas.
8. M. N. MARCULOS: Presence of Specific Antibodies in Blood of Animals Cured with Salvarsan.
9. M. N. TCHERKASSOFF: Pathogenesis of Nephritic Edema.
10. G. STUKKIN: Hook for Retracting Outer Edges of Wound During Appendectomy.
11. E. R. GESSE: Foreign Bodies in Lungs and Pleural Cavity in Incised Wounds of Same
12. A. JA. STERNBERG: Question of Rational Chemotherapy.
13. G. PH. PETRASIEVSKY: False Traumatic Cyst of Pancreas.
14. B. N. VOITOFF: So Called Traumatic Scarlatina and Scarlatoid Erythemas.
15. PH. D. REMJANZEV: Nephritis in Scarlet Fever
16. D. I. VOITOFF: Retinitis from Observing Solar Eclipse with Eyes Not Protected.
17. P. A. GLUSHKOFF: Autoserotherapy in Treatment of Gonitis.

1. **Warm Baths in Insanity.**—Suchanoff is of the opinion that prolonged warm baths exert a beneficial influence in catatonic and melancholic excitement. They furnish one of the methods of overcoming the aggressive actions of the insane and the tendency to uncleanness; they also have a marked sedative effect and favor sleep.

3. **The Ascoli Test for Anthrax.**—Izabolinsky and Patzevitch proved by numerous experiments that the Ascoli reaction, which consists in the formation of a precipitation ring at the junction of antianthrax serum and a solution from tissues from an animal killed by anthrax, is specific. The reaction occurs with fluids and tissues which have un-

dergone putrefaction (for forty days, in the authors' experiments), and is most marked when a solution from the spleen is employed. In view of the difficulty in finding anthrax bacilli in putrid material, this reaction should prove of great value.

5. Laboratory Diagnosis of Internal Cancer.—Semenoff experimented with the Salkowsky and Kojo method of determining colloidal nitrogen in urine as an aid in the diagnosis of cancer of the internal organs. The method employed by the author was as follows: To 100 c. c. of mixed twenty-four hour urine was added zinc chloride to saturation (if the urine contained albumin the latter was removed by boiling). The saturated solution was put aside for twenty-four hours and filtered through an ashfree filter. The precipitate was washed five times with a saturated solution of zinc chloride to remove all nitrogenous substances. The filter and precipitate were then incinerated by the Kjeldahl method and the amount of cyanogen determined. The total nitrogen in the urine was then determined by the Kjeldahl method and the relation of the colloidal to the total nitrogen calculated. The results of the experiments performed on a large number of urines from healthy individuals, as well as those suffering from various affections, including cancer, established the following facts: 1. The coefficient of Salkowski and Kojo in healthy individuals is always low (maximum 1.79). 2. There is always an increase of colloidal nitrogen in cancer of abdominal organs. 3. The increase of the colloidal coefficient may appear in other diseases (acute appendicitis, acute endocarditis, anemia, diabetes, and tuberculosis). 4. The increase of colloidal nitrogen in the urine is not specific in cancer. 5. A normal coefficient (up to 1.79) excludes cancer.

6. Ventrifixation and Pregnancy.—Rocoff concludes from a review of the literature and his own observations that ventrifixation in a childbearing woman is a very serious operation, as it may complicate subsequent labors. In his own case the difficulty arose from a rigid, unyielding body of the uterus when it was fastened to the abdominal wall.

8. Specific Antibodies in the Blood of Animals Treated with Salvarsan.—Margulies showed by experiments on animals that the serum of animals treated with salvarsan possesses curative and prophylactic properties. This is due to the presence of specific antibodies or antitendotoxins formed as a result of very rapid parasitolysis, and not to the presence of salvarsan in the serum. The serum of normal animals injected with salvarsan showed no specific action whatever.

9. The Cause of Edema in Nephritis.—Tcheboksaroff presents the results of his animal experiments, which seem to indicate that the blood of nephritics contains substances which possess a stimulating effect on the production of lymph. These substances act on the vessel walls, rendering them more permeable to fluids. This, together with the retention of water and salts, determines the production of edema. The author's experimental data, therefore, are in accord with the Conheim-Senator theory, which recognizes the vascular changes induced by the toxins as of prime importance. The author, however, does not agree with Senator as

to the exogenous origin of these toxins; nor does he believe that they are the retained products of nitrogen metabolism. His experiments show that the toxins originate in the kidneys proper, being the products of degeneration and autolysis of the cellular elements.

16. Retinitis and Solar Eclipse.—Vostroff reports twenty-five cases of retinitis of varying severity, caused by looking at a solar eclipse without the customary protection of the eyes.

17. Autoserotherapy in Synovitis of the Knee Joints.—Glushkoff obtained very favorable results in two cases of synovitis of the knee joints by injections of the exudate withdrawn from the joint. The method employed was to withdraw the fluid by means of a hypodermic syringe, and, without removing the needle, inject it into the subcutaneous tissues. Prompt absorption of the exudate followed the injection of two c. c. in one and eight c. c. in the other case.

INTERSTATE MEDICAL JOURNAL.

April, 1912.

1. NORMAN B. CARSON and LEO HUELSMANN: Diaphragmatic Hernia Diagnosed before Operation.
 2. ERIC C. BYRNE: Raynaud's Disease.
 3. A. L. BENDICK: Economics of Food.
 4. J. F. BRENDE: Surgical Treatment of Ascites.
 5. CHARLES H. APPEL: Etiology and Clinical Aspect of Ascites.
 6. ARTHUR D. DIXON and GEORGE A. STEVENS: Examination of Cerebrospinal Fluid.
- May, 1912.
7. S. P. BEERE: Serum Treatment for Hyperthyroidism.
 8. EUGENE L. OPL: What Is Intestinal Secretion?
 9. M. J. LIGHTY: Insidious Chronic Appendicitis.
 10. EUGENE T. SENSENEY and LOUIS K. GUGGENHEIM: Major Operations on Temporal Bone; Pathological Interpretation.
 11. H. V. JACKSON: Further Study of Scorpion Venom.
 12. JOHN Y. BROWN: Surgical Treatment of Intestinal Stasis.
 13. A. F. A. KING: Version in Transverse Presentations.
 14. EDWIN D. WATKINS: Pentosuria.
- June, 1912.
15. H. HORACE GRANT: Ombroptery in Cirrhosis of the Liver.
 16. EUGENE T. SENSENEY and LOUIS K. GUGGENHEIM: Clinical Indications for Major Operations on Temporal Bone; Pathological Interpretation.
 17. FRANK K. BOLAND: Excision of Clavicle.
 18. CUTHBERT WELLMAN: Relation of Drainage Operations to Public Health.
 19. NORMAN B. CARSON: Ligature of Internal Mammary Artery for Stab Wound.
 20. AUGUST J. P. PACINI: Sputum Diagnosis of Pneumonia.

4. Surgical Treatment of Ascites.—Binnie, from reasoning and from statistics, concludes that operations are to be considered proper in such a fatal condition as ascites due to hepatic cirrhosis, even when they promise only a very moderate amount of success; that, as the patients are usually in poor condition for resisting trauma, severe operations are improper; that the operation of choice, and much superior to mere paracentesis, is some form of amentopexy or of lymphangioplasty; that drainage into the veins may be proper when milder measures fail; and that all means of direct anastomosis between the portal vein and the inferior vena cava are probably unjustifiable.

6. The Examination of Cerebrospinal Fluid.—Dunn and Stevens, from deductions based upon forty-two cases under their care, and from a study of the recent literature, conclude that lumbar puncture should be resorted to almost as a routine in serious traumata if the central nervous system and in posttraumatic neurasthenia, both as a diagnostic and therapeutic means. Definite changes in the cerebrospinal fluid are caused by inflammatory affections of the brain and cord; examination of the cerebrospinal fluid renders possible the differentia-

tion of acute and chronic inflammatory affections (so called degenerative inflammatory types). There may be an absence of manifestations in the cerebrospinal fluid in simple degenerative conditions such as combined degeneration, and the degeneration of pernicious anemia. In their earliest stages parasymphilitic affections can be diagnosed only by serological methods; curative therapy is possible only in their early or exudative stage. By occasional examination of the cerebrospinal fluid we may estimate the effect of therapy. In cerebrospinal syphilis, a positive Wassermann reaction may occur in the cerebrospinal fluid.

7. Serum Treatment for Hyperthyroidism.—Beebe has been using, during the past six years, a serum developed by inoculating rabbits and sheep with the proteids obtained from human thyroid glands, in the treatment of hyperthyroidism. The purpose of the serum treatment is to prepare in an alien species of animals a serum having specific antagonistic properties to that of the thyroid secretion. In the administration of this serum we have a valuable addition to the therapeutics of hyperthyroidism, and this is confirmed by a large number of clinicians. Early diagnosis is important. A pulse rate considerably above normal and a nervous condition entitle the patient to a very thorough examination even in the absence of thyroid enlargement or exophthalmos. Combined with the serum treatment good judgment is necessary; social, physical, and mental activity which obtained during the development of the disease, should be interdicted. The serum is not the whole treatment, but only a help in the control of the disease. These patients are really sick and need to be treated as such.

15. Omentopexy in Cirrhosis of the Liver.—Grant, from a careful examination of recent literature and from his own personal experience, concludes that through the use of omentopexy, even in the condition of advanced hepatic degeneration and general toxemia, with resulting ascites, over ten per cent. of symptomatic cures are obtained, and over fifty per cent. at least are improved, comforted and given increased lease of life. As this advanced condition is often preceded by a period of latency (a year or more) during which pathognomonic symptoms develop, early diagnosis of this mortal lesion justifies exploration and repair, with improved prognosis. The surgeon should not be deterred from making an exploratory operation for diagnostic purposes, as all forms of cirrhosis are fatal when treated by the expectant methods.

LONG ISLAND MEDICAL JOURNAL.

July, 1912.

1. BURTON HARRIS: Destruction of Vesical Papilloma by High Frequency Current.
2. R. H. FERGUSON: Surgical Anesthesia and Its Significance.
3. A. H. BOWART: Inherited Ulcers of Duodenum and Stomach.
4. D. D. ROBERTS: True and False Intestinal Flatulence.

1. Destruction of Vesical Papilloma by High Frequency Current.—Harris says tumors of the bladder are far more frequent than is commonly supposed, seventeen cases having come under his observation during the year 1911, six of which were hopeless and ended fatally within periods varying from twenty-four hours to two months after diagnosis was made. All patients gave a history of hematuria extending over relatively long periods, in

one of them twelve years. Although they had been under the observation of various physicians, only one would admit that cystoscopy had been advised. These conditions have been cured by the high frequency current Harris asserts, but whether the Oudin current acts simply as a convenient means of cauterization, or possesses in addition, a certain selective action for neoplasms or the tissue in which it grows, has not yet been determined. As an ascertained fact, we know we have a simple and efficient means of destroying tumors of the bladder which is practically painless, without danger, and by means of which we shall undoubtedly be able in some cases to effect a permanent cure. In other cases it affords relief.

2. Surgical Anesthesia and its Significance.—Ferguson avers that every anesthesia by chloroform or by ether reduces the opsonic power of the blood. Because of this impaired immunity an infection which would otherwise not become important may develop into a serious septicemia. Under favorable conditions phagocytosis is not restored of itself except in from a day and a half to three or more days. If, however, with a patient who has been properly prepared, six ounces of pure olive oil at a temperature of about 104° F. be injected slowly into the sigmoid flexure or higher up in the large intestine, phagocytosis will be restored in three to five hours. Care must be taken to know that the oil is from olives. Mineral oils will not be absorbed at all. Animal oils are so slightly absorbed as not to be worth consideration. Cottonseed oil is absorbed slowly, not nearly as rapidly as olive oil, and as the time at the command of the anesthetist in which he can restore the opsonic index is limited, reliance should be placed on a pure olive oil alone. Surgical anesthesia is a grave thing and is getting more attention at the present time than it has had in the past, but it demands even more respect than it receives.

4. True and False Intestinal Flatulence.—Roberts says clinically we are concerned with the problem of intestinal flatulence in a number of cases in different ways. In the first place with those patients who have complaints which are accompanied with the passage of excessive flatus, and on the other hand with many who complain of gas, but who present no sufficient evidence that the intestine has more than the normal amount. These two classes may be described as true and false flatulence. The subject is a complex one and there is difficulty in deciding if the patient has excessive flatulence. This is done only by careful questioning and study of the abdomen.

YALE MEDICAL JOURNAL.

April, 1912.

1. W. C. ERVING: Medical Report of Yale Peruvian Expedition.
2. H. F. STABLE: Medical Treatment of Acute Gastric and Duodenal Ulcer.
3. A. C. HAUBLEIN: X Ray Diagnosis as Applied to Diseases of Thorax and Abdomen.

1. Medical Report of the Yale Peruvian Expedition.—Erving gives an account of an expedition sent out in the summer of 1911 for the purpose of scientific work in the southern part of Peru, three members of the faculty of Yale University forming part of the company of experts, the writer acting as surgeon of the expedition. The clinical examinations made by him were at altitudes of

4,000 feet or less, where tropical conditions prevailed, and, with the exception of malaria, there was a marked absence of the so called tropical diseases, especially in the high valleys and mountain regions where the most common affections are those of the throat and lungs, chronic laryngeal and bronchial coughs being of common occurrence, influenza and acute follicular tonsillitis being also occasionally observed. Pneumonia is the most serious and dreaded of infectious diseases, being almost uniformly fatal in the greater altitudes, owing to the rarefaction of the atmosphere. Tuberculosis is very common, the pulmonary type most often, more rarely the joint infections, due to the methods of living among the natives, lack of ventilation, and crowding. Syphilis and gonorrhea are marked by their absence. Typhoid is endemic in all populous centres, no precaution being taken against pollution of the water supply, and no regular disposition of the refuse which often littered the streets. Smallpox is also endemic, the natives usually contracting the disease in infancy, vaccination being neglected, and no quarantine measures taken. Goitre is very common, especially in the valley regions, in some instances all the members of one family are affected. Malaria is the most prevalent and serious disease; especially in the river valleys on both slopes of the Andes. Dysentery is common among the natives of the valleys, some of the cases being very severe, and probably of the amebic type. *Pinta*, an interesting tropical disease, is seen at an altitude of 3,500 feet or lower. This consists of a progressive, bluish black discoloration of the skin, especially on the exposed portions, due to a parasitic mould. The only symptom is an itching in the early stage. Although it causes no disability it often leaves marked disfigurement. "Oriental sore" is a type of ulcer observed in the lower valley region. It occurs as a shallow ulcer with irregular granulating margins, slowly progressive, without pain, running a very chronic course, and affecting children and adults alike. It is attributed to the bite of a spider or other insect, which refuses to heal. Medical facilities are very meagre, and physicians scarce. No sanitary regulations are carried out under any medical board and vaccination is not enforced.

2. Acute Gastric and Duodenal Ulcer.—Stall observes that erosions of the gastric mucosa are not infrequent. The diagnoses of dyspepsia and chronic gastritis are often in reality mistaken ones for acute peptic ulcer. Pyloric ulcer or chronic appendicitis should be suspected when symptoms of hyperchlorhydria are not promptly relieved by diet and alkaline treatment, and the patient put on strict ulcer régime and relieved of all work. Proper medical treatment should effect a cure in gastric or duodenal ulcer in a few weeks or months. The writer concludes that the neglected, simple ulcer becomes the chronic indurated ulcer. The chronic ulcer too often results in cancer.

GLASGOW MEDICAL JOURNAL.

July, 1912.

1. WALTER K. HUNTER and J. H. M'NICOL: Glandular Enlargement—1, Hodgkin's Disease; 2, Endothelioma.
2. R. SPEIRS FULLARTON: Albumin Reaction of Sputum in Pulmonary Tuberculosis.
3. G. HERBERT CLARK: Effects of Chloroform.
4. FRED. L. NAPIER: Ether Anesthesia by Intravenous Infusion.

2. Albumin Reaction of the Sputum.—Fullarton finds that the sputum contains albumin in the

great majority of cases of pulmonary tuberculosis, although little or none is found in a small proportion of them. It is also present in considerable amount in acute bronchitis and pneumonia during the febrile stage, in most cases of the latter during the stage of resolution, and in bronchiectasis. The sputum contains little or no albumin in bronchial catarrh, acute bronchitis during convalescence, some cases of resolving pneumonia, and in most cases of chronic bronchitis, whether accompanied by asthma or emphysema or not. A considerable amount is present in some cases of chronic bronchitis. He is led to think, therefore, that in cases other than acute bronchitis, pneumonia, and bronchiectasis, the presence of a considerable quantity of albumin in the sputum is suggestive of the existence of pulmonary tuberculosis, though it cannot be held to prove it. The absence of albumin, or its presence in small quantities, likewise suggests, but does not establish, a negative diagnosis. The test is not reliable and is only of limited value diagnostically.

4. Ether Anesthesia by Intravenous Infusion.

—Napier says that the advantages exhibited in selected cases by this method over that of inhalation are: 1. The patient is spared the disagreeable sensations attending the administration of an inhalation anesthetic; 2, there is no primary irritation of the respiratory organs or of the heart; 3, a very small amount of the anesthetic is used; 4, anesthesia, when produced, is of a calm and placid nature; 5, there are no after effects; headache and vomiting practically never occur and pulmonary complications are absent. The method will not replace ordinary anesthesia, but ought to prove useful in selected cases in which the older method would be inconvenient, or would expose the patient to undue risks.

PRACTITIONER.

July, 1912.

1. GEORGE H. SAVAGE: Relationships between Fits and Mental Disorder.
2. E. STAMMORSE BISHOP: After Treatment of Abdominal Sections, Based upon 1,232 Cases.
3. FREDERICK LANGMEAD: Cyclical Vomiting.
4. DAVID NEWMAN: Primary and Early Secondary Tuberculosis Cystitis.
5. A. H. TURBY: Orthopedic Surgery.
6. PAUL B. ROTH: Measurement of Deformity.
7. HUGH THURSFIELD: Review of Literature on Diseases of Children.
8. J. SWIFT JOLY: Some Recent Advances in Syphilis and Gonorrhea.
9. PERCY E. TRESIDDER and STANLEY TRESIDDER: Treatment of Syphilis by Salvarsan.
10. REGINALD HAYES: Treatment of Syphilis of Nervous System by Aachen Methods.
11. STANLEY MELVILLE: Should Venereal Disease be Notified?
12. JAMES HARPER: Diagnosis and Treatment of Chronic Suppuration of Maxillary Sinus.
13. W. KNOWSLEY SIBLEY: New Method of Applying Carbon Dioxide Snow.
14. W. BERNARD SECRETAN: Surgical Shock.
15. BASIL HUGHES: Treatment of Cellulitis with Special Reference to Hand and Arm.
16. JAMES RAE: Ronjat and Bidloo.

3. Cyclical Vomiting.—Langmead does not refer by this term to any variety of vomiting that recurs at fairly regular intervals irrespective of its cause, but to a particular condition associated with vomiting which has also been called fitful, periodical, and recurrent. It occurs more often in girls than in boys, usually between the ages of five and eight years. The patient is generally of a pronounced neurotic type. For a few days before the onset the child is fretful, peevish, refuses food, mopes about the house, is drowsy, or complains of headache and nausea. The tongue is coated, the breath offensive,

with the sweetish heavy odor characteristic of acetone. Constipation usually precedes, but sometimes there is instead an offensive diarrhea. The temperature is slightly raised, to 100° or 101° F., occasionally higher. The urine is diminished and contains the acetone series of bodies. The most important and constant feature is vomiting, which is usually very distressing and recurs every few minutes in the worst cases. Expulsion of the contents of the stomach affords no relief. After twenty-four or thirty-six hours the vomit is often brownish in color from the presence of altered blood, but it hardly ever appears as "coffee grounds." In mild cases the vomiting lasts only a day or two, but the longest attack recorded lasted seven weeks. Pain in abdomen appears during the attack as the result of vomiting. The cheeks are flushed, the eyes, bright at first, become sunken, glazed, and injected. The skin is dry and flushed, the abdominal wall becomes concave. The child becomes very emaciated and restless. Symptoms ascribed to acid intoxication, resembling those of diabetic coma, form an important part of the picture. Drowsiness is present and increases as long as the vomiting persists, leading in fatal cases to coma. The urine contains acetone, diacetic acid, and betaoxybutyric acid, but no sugar. Neither albumin nor casts are found in great quantity. Thirst is great. The temperature is slightly raised and the pulse rate is increased. No objective signs of visceral disease can be found, except perhaps enlargement of the liver. The conditions from which this one has to be differentiated are meningitis, intestinal obstruction, nervous and hysterical vomiting. Meningitis is productive of more severe headache, in it the vomiting is less frequent and of an explosive character, the symptoms of acid poisoning are not so prominent, and the mental change is more profound. Intestinal obstruction is usually to be excluded by the absence of local signs, but the mistake is often made. It is of extreme importance to make a careful differentiation, because if a patient with cyclical vomiting is operated upon, a fatal issue is almost certain. Nervous and hysterical vomiting are without distress and not periodical. It is questionable whether the bilious attack to which children are prone is not a miniature attack of cyclical vomiting which begins more abruptly and ends more quickly. The prognosis seems to be pretty good, only eleven fatal cases being known. Six of these patients were examined post mortem, and fatty degeneration of the liver was found in five. In the other hypertrophic stenosis of the pylorus and some purulent bronchopneumonia were found, which render it doubtful if this was a true case of cyclical vomiting. The cause is obscure. The essential point of treatment between attacks is to obtain a satisfactory daily evacuation of the bowels. The regular use of small doses of alkalies seems to be beneficial. During the attack attention should be given to dilution and elimination of the poison. A brisk purgative should be administered, an intravenous saline if drowsiness increases, and drinks of warm water to dilute the toxins and aid in their elimination as it is expelled from the stomach.

13. New Method of Applying Carbon Dioxide

Snow.—Sibley says that if solid carbon dioxide is added to ether or absolute alcohol in a porcelain dish, the liquid at first effervesces violently, but after a few seconds a colorless semigelatinous body is obtained, which is a solution of solid carbon dioxide the temperature of which is considerably lower than 79° C. This liquid can be applied very conveniently on a camel's hair brush, or with a swab of cotton on a wooden or nonconducting holder, and in this way a liquid freezing preparation can be painted on the skin as a stimulating or cauterizing agent, according to the length of time the reagent is applied.

15. Treatment of Cellulitis.—Hughes finds that the most gratifying and quickest results are obtained from autogenous vaccination. He says: "It may seem a big undertaking to prepare a vaccine for each of these bad cases, but for those who undertake it the results will quite justify the trouble."

PROCEEDINGS OF THE ROYAL SOCIETY OF MEDICINE. May, 1912.

1. T. PAGAN LOWE: Radium Emanation in Mineral Waters.
2. EDMUND CUTLEY: Mucous Gastritis in Infancy.
3. REGINALD MORDEN: Treatment of Rodent Ulcer.
4. GORDON R. WARD: Nodular Leuchemia.
5. HELEN CHAMBERS and S. RESS: Bactericidal Action of Radium Emanation.

(Titles of the forty-one other contributions in this periodical can not be given because of space limitations.)

1. Radium Emanation in Mineral Waters.—Lowe recalls the fact that radium is a very unstable element, continually undergoing a change in the course of which each atom of it gives off an atom of helium. The remaining body is no longer radium, but a gas, which Ramsay designates as niton, though it has heretofore been known as radium emanation. During the change of radium into niton, beta rays are evolved, and these have therapeutic value, as does niton itself. It seems probable that radium emanations have a specific action on gout. In regard to the method of administering radium, Lowe warns against neglect of the time honored procedure of bathing in mineral radioactive waters in favor of the newer methods of drinking and inhalation. One must not reject bathing merely because it is still impossible to explain how its effect on the body is exerted. Even the mode of action of radium already introduced into the organism is unknown. According to German authorities the effect is not a bactericidal one. It is known that radioactivity stimulates metabolism, and it may be, and indeed is probable, that the suggestion of Leonard Williams, that the stimulation is effected through the internal secretory glands, may prove to be correct. Experiments by Wickham and others have shown that radium is destructive to the gonococcus; while not, strictly speaking, bactericidal, it so modifies the culture medium as to antagonize the growth of the coccus. According to Wickham and Degrais one millionth part of pure radium in water will act on the cultures—a fact promising much in the future treatment of gonorrhea and its sequelæ. Lowe recently treated an aged patient suffering from a long standing atrophic scirrhus of the breast by exposing the latter to the gas emanating from the springs of Bath, England. The ulcerated surfaces were exposed for ten minutes daily, and after

1. **Does Cholecystenterostomy Divert the Flow of Bile from the Common Duct?**—Archibald replies to this question that cholecystenterostomy in the dog, in the presence of a patent common duct, does not divert the flow of bile to any appreciable extent, and cholecystotomy, which does succeed in diverting a portion of the bile from the common duct, is therefore the operation of choice in cases of chronic and subacute pancreatitis.

2. **General Paresis.**—McVicar, Bates, and Strathy report the results they obtained in a small series of cases, from which it seems that: 1. An increased cell count is present in nearly all cases of paresis, but may also be found in Korsakoff's psychosis and in meningeal conditions of various origins; 2, general paresis without a positive Wassermann reaction in both spinal fluid and blood serum is rare; 3, globulin may be detected in the spinal fluid of nearly all paretics; the Noguchi and ammonium sulphate tests are of equal delicacy; 4, a positive Wassermann reaction may be obtained in the spinal fluid of patients who have had syphilis and who cannot yet be diagnosed clinically as cases of general paresis.

CHINA MEDICAL JOURNAL.

March, 1912.

1. RALPH G. MILLS: Causes of Infant Mortality in Korea.
2. EDWARD M. MERRINS: Chinese and Red Cross.
3. J. J. MELLOWNEY: Temptations and Diseases Common to Student Life.
4. A. M. WONG: Out Practice among Chinese.

1. **The Causes of Infant Mortality in Korea.**—Mills advises us that the infant mortality in Korea is very high, and attributes this to constant and continual nursing, eating anything, any time, anywhere, no matter how indigestible, worms, and uncleanly habits. Diarrhea and other diseases of the digestive system, and diseases due to impure air, comprise fully eighty-five per cent. of the mortality in Korea, against fifty-eight per cent. in America. Convulsions, of pulmonary or gastrointestinal origin, produce a high mortality. The Korean doctor diagnosticates this severe condition by carefully cleansing the palmar surface of the metacarpophalangeal joint of the index finger of the left hand in males, and of the right hand in females; a blueness of the veins indicates the presence of the disease. The popular theory as to the cause is that the pregnant mother is indiscreet in diet, or exposes herself in unhygienic ways, and the child thus inherits a weakness called "wind" or *parum*, that will become manifest during childhood. Incidentally the writer mentions that the menses begin at an average age of sixteen years (from twelve to twenty), and a large number of girls marry from one to nine years before the menses appear. Excessive venery is the rule, with very little respect for menses, pregnancy, or sickness, the result being a large mortality of infants through abortion. Syphilis is also a large factor in infant mortality.

4. **Out Practice among the Chinese.**—See editorial article, page 389.

INDIAN MEDICAL GAZETTE.

July, 1912.

1. E. R. ROSE: Treatment of Leprosy.
2. W. C. HOSACK: Outbreak of Rat Plague in Suffolk and Manchester Epidemic of Human Plague.
3. A. WHITMORE and C. S. KRISHNASWAMI: Hitherto Undescribed Infective Disease in Rangoon.

4. W. W. CLEMENTS: Ultraviolet Rays in Sterilization of Water.
5. H. F. LICHNER: Diameter of Cornea.
6. E. H. V. HOBBS: Outbreak of Epidemic Jaundice.
7. H. S. MATSON: Early Tuberculosis.
8. R. H. CASTOR: Lymphadenoma.
9. J. W. BULL: Case Diagnosed as Acute Anterior Poliomyelitis.

3. **Hitherto Undescribed Infective Disease.**—Whitmore and Krishnaswami describe the macroscopical and microscopical findings in a patient who had presented symptoms resembling, but easily distinguishable from those of glanders, which led to the discovery of the existence in Rangoon of a peculiar septicemic or pyemic disease caused by an infection with a bacillus whose characters are so distinct from other known pathogenic bacteria that it can be readily isolated and positively identified. Clinical knowledge of the disease is as yet meagre, but bacteriological knowledge is sufficiently complete to permit a confident diagnosis to be made by its means. The disease has a resemblance, both clinically and bacteriologically, to glanders, but the differentiation can be made readily bacteriologically. Much remains to be learned concerning the disease.

JAHRBUCH FÜR KINDERHEILKUNDE.

July, 1912.

1. S. MURA-KAYO: Pathology of Cerebral Dilegia in Children.
2. LUDWIG SCHLEGEL: Osteosarcomas.
3. RICHARD PRINGSHEIM: Etiology of Osteomyelitis in Infants.
4. H. KOWARSKI: Amaurotic Family Idiocy.

ZEITSCHRIFT FÜR UROLOGIE.

Vol. VI, No. 3.

1. C. POSNER: Modern Urology.
2. LOTSY: Ureter Stone as Factor in Bladder Tumors.
3. N. P. N. TRINKLER: Diagnosis of Hydronephrosis.
4. T. COHN: Clinical Significance of Fatty Urine.
5. N. A. MICHAÏLOFF: Syphilis of Bladder, Ureters, and Kidneys.

2. **Ureter Stone a Factor in Bladder Tumors.**—Lotsy reports a case of a bladder papilloma near the right ureteral orifice. The papilloma was extirpated. After the operation the patient passed a calculus spontaneously. The author believes that the calculus had been situated in the lower part of the ureter and that the tumor obstructed its passage to the bladder. It is possible that the local irritation caused by the calculus was a factor in causing the papilloma.

4. **Clinical Significance of Fatty Urine.**—Cohn reports two cases of fatty urine. One case, in a man of thirty-one years, presented bladder pain for six years. The urine contained many leucocytes, epithelial cells, and fat globules. Two years later a lumbar tumor was palpated, and the author believes that the lipuria was an early symptom of a hypernephroma.

5. **Syphilis of the Bladder.**—Michailoff reports the case of a woman of thirty-nine years who had hematuria and bladder pain for nine years. Cystoscopy showed a bladder of normal capacity; hyperemia in the region of the bladder neck and trigonum, the left ureteral orifice enlarged. Throughout the bladder were lesions comparable to impetiginous skin lesions surrounded by a red areola. In places the spots resembled roseola. The Wassermann reaction was positive. On specific treatment the spots disappeared. The analysis of the urine catheterized from the kidneys convinced the author that similar lesions existed in the ureters and kidneys. Under treatment the hematuria disappeared.

Proceedings of Societies.

AMERICAN GYNCEOLOGICAL SOCIETY.

Thirty-seventh Annual Meeting, Held at Baltimore, Maryland, May 28, 29, and 30, 1912.

The President, Dr. HOWARD A. KELLY, of Baltimore, in the Chair.

(Continued from page 356.)

Dr. HENRY T. BYFORD, of Chicago, said that given a twisted pedicle in a case of pyosalpinx, if peritoneal adhesions occurred there was pain, a little rise in temperature, perhaps, but no sepsis, and intestinal adhesions would occur and colon bacillus infection probably. The patient would run on to the development of a serious condition, and we did not know how. If these cases were taken in hand early, when there was but little infection, or if one could make an approximately accurate diagnosis of the condition existing, one would be safe in operating, as the essayist did, without expecting to find much sepsis and the danger of spreading sepsis.

Dr. JOHN A. SAMPSON, of Albany, operated upon his first patient in 1904, for an acute pelvic inflammatory condition, and he found at the operation the right tube with a twisted pedicle, similar to the one described except that it was twice as large, also an enlarged tube on the opposite side. The right tube and ovary were removed, also the left tube. The operation was done in the Johns Hopkins Hospital in the service of Doctor Kelly. The patient's age was nineteen years. In the second case he operated in a year and a half ago. The patient was twenty-one years of age. She gave a history of a sudden attack of severe abdominal pain, associated with nausea and vomiting. She had a soft uterine tumor. He made a diagnosis of ovarian cyst with twisted pedicle. At the operation he found an enlarged tube on the right side, which was hemorrhagic, with distinct twisting of the pedicle; also an enlarged tube on the opposite side, elongated, and to all appearances a pyosalpinx. Supravaginal hysterectomy was done, together with the removal of the right tube and ovary and left tube. The specimen was placed in the position it occupied in the pelvis. A year and a half later it was injected with a solution containing a suspension of red lead. The tube, with the twisting of the pedicle, was not involved in the twist. It showed an elongated tube on the opposite side. The tube on this side was examined microscopically and proved to be tuberculous.

Dr. JOHN O. POLAK, of Brooklyn, New York, placed on record the report of a case of twisted pedicle and tube. This occurred in a patient, nineteen years of age, apparently of the type Doctor Martin had described. The operation was done three days after the primary attack of acute abdominal pain, and one interesting point in connection with this case was the extreme size of the tube, which measured eight by ten centimetres in its distention, and the fact was that the ovary was not involved at all in the twist, the twist being in the free and isthmic portion of the tube, and the pelvis being free from any adhesions. This was a case which undoubtedly was primarily a hematosalpinx which had become infected. On microscopical examination there was no evidence of tuberculosis, but colon bacilli were found in the contents of the tube.

Dr. E. E. MONTGOMERY, of Philadelphia, stated that some years ago a young lady, twenty-two years of age, consulted him. She was suffering from a severe attack of pain in the pelvis, which came on so suddenly as to lead to the suspicion of ectopic gestation. On opening the abdomen both tubes were found filled with pus, with twisting of the pedicle of the left tube. There was an extensive hemorrhage into the peritoneal cavity from the removal of the sac as the result of interference with the circulation. The environment of the patient rather led him to believe it was a case secondary to a gonorrhoeal infection. No examination, however, was made of the specimen microscopically.

Doctor ANSPACH, in closing, and in replying to a question of Dr. Martin with regard to a predisposition to torsion by the shape or type of tube, stated that in his case there was a decided abnormality in that direction. The tube was much longer. On this side it was seventeen centimetres in length. There would be plenty of room for a twist, and with the heavy extremity absolutely free it could occur. He did not think it occurred on the left side, because the ovary was adherent; whereas, he believed the right ovary was originally unaffected by the adhesions of the left ovary.

Influence of Myomata on the Blood Supply of the Uterus, with Special Reference to Abnormal Uterine Bleeding, Based on the Study of 150 Injected Uteri Containing these Tumors.—Dr. JOHN A. SAMPSON, of Albany, stated that in fifty-two specimens, colored injection masses were used, and in ninety-eight either the arterial or venous system was injected with a mass impervious to the x ray. Stereoscopic radiographs were of great value in this work. All specimens were studied with a knowledge of the age of the patient, and, before the menopause, the exact stage of the menstrual cycle. The arterial and venous supply of the uterus and of myomata had been described in a previous paper. The influence of these tumors on the circulation of the uterus was of much greater clinical importance than the blood supply of the tumors themselves. Menstruation was found to be due to a venous flow and depended upon changes in the walls of the venous plexus of the endometrium, permitting the blood to escape. There were not any valves in the uterine veins, so that the amount of blood lost was regulated in a large measure by the efficiency of the uterus to hold it back, especially its muscular efficiency.

Large subserous myomata were very vascular and caused an hypertrophy of the uterine artery from which its nutrient vessels arose, and thus more blood was carried to the uterus and tumor; the excess over the normal was diverted to the tumor. The chief arterial and venous changes were in the peripheral zone of the uterus, and menstruation was usually not altered.

Small intramural myomata were less vascular than the myometrium, and usually did not alter menstruation, but might possibly sometimes cause uterine insufficiency with its accompanying menorrhagia or metrorrhagia. Large intramural myomata were more vascular than the myometrium, but less vascular (venous). Submucous myomata represented a later stage of the intramural variety, and the veins over the surface of these were more

apt to be affected than in the intramural variety. Adenomyomata did not necessarily disturb menstruation, and the endometrium over them was usually atrophied.

(To be continued.)

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Massage and the Original Swedish Movements. Their Application to Various Diseases of the Body. Lectures before the Training School for Nurses Connected with the Hospital of the University of Pennsylvania, German Hospital, Woman's Hospital, etc. By KURKE W. OSTROM, from the Royal University of Upsala, Sweden. Seventh Edition, Revised and Enlarged. With One Hundred and Fifteen Illustrations. Philadelphia: P. Blakiston's Son & Co., 1912. Pp. xiv-202. (Price, \$1.)

This small, concise manual of massage and Swedish movements has proved its value by reaching the seventh edition. The subject is one which deserves more attention at the hands of clinicians than is usually given. It will get it when they become alive to the practical uses and wide applicability of this invaluable remedial measure. Many a case wherein it was employed successfully owes the good effects to no other therapeutic agency. Extremely few clinicians know anything of its scope and power, or whether good or bad massage is being employed. This book will not teach the clinician much, it will prove of more use to the expert masseur as a guide to procedures, as memoranda of routine and variants. It has the decided merit of not being burdened with crude assertions, weird explanations of effects, long winded case histories, which encumber and obscure so many books on the subject. The facts and procedures are herein clearly and succinctly described. The illustrations are numerous, excellent, and well explain the actions. The author is known to us as a well trained expert, a good teacher, and a successful practitioner. It is interesting to remark that there are in the United States very few accredited graduates of the Swedish schools for massage, but many pretenders to this valuable distinction.

Deformities of the Bones and Joints. A Textbook of Orthopedic Surgery. By A. H. TUBBY, M.S., Lond., F.R.C.S. Eng., Surgeon to and in Charge of the Orthopedic Department of Westminster Hospital and Lecturer on Clinical and Orthopedic Surgery in the Medical School, etc. Second Edition. Illustrated by Seventy Plates and Over 1,600 Figures, of Which Nearly 400 Are Original, and by Notes of Fifty-four Cases. In Two Volumes. Volume I: Congenital and Static Deformities; Injuries and Diseases of Muscles, Tendons, Bursæ, and Fasciæ. Pp. xxxi-883. Volume II: Diseases of the Bones and Joints; Paralytic Deformities. Pp. xxiv-867. London: Macmillan & Co., 1912. (Price, \$16.)

Tubby emphasizes the fact that in England works on orthopedic surgery sometimes include tuberculosis of the spine, but have excluded consideration of tuberculosis of other joints, and as well many other etiological factors that should receive consideration in connection with ultimate deformities. In his new revision he has found it necessary to devote two volumes in recognition of the fact that new methods of treatment, based on clear conceptions of pathogenesis, have come into vogue, supplanting older methods. This book should be unusually acceptable to American practitioners because of its very extensive quotations and references to the American writers on orthopedic surgery.

The *American Journal of Orthopedic Surgery* is referred to very frequently. The portions of the book that embrace arthritic and osseous diseases are thorough and complete and present a painstaking analysis of the subject of preventive medicine—the object being clearly to por-

tray the customary lines in the diseases of bones and joints that so frequently result in deformity. Particular attention is given to the arrest of the progress of the affection as well as the prevention of the ensuing deformities. The chapter on bone tuberculosis presents the modern aspect as to etiology, pathology, and essentially as to therapeutics. While many of the former methods of treatment are referred to, reasons are given for their abandonment in favor of the more rational methods of modern times. The large number of illustrations, nearly one half of which are original, makes the portrayal of the subject clear and less likely to cause confusion.

Tubby has written his textbook in a masterful manner, based upon his extensive experience in the many hospitals of London, as well as upon his extensive opportunities as a teacher of clinical orthopedic surgery. He has demonstrated a happy faculty of presenting the subject in a clear and attractive manner. His book can be accepted as a safe guide by those who make orthopedic surgery a special study, and equally by the general practitioner who in the majority of instances has control of the patient during the inception of the various maladies that are covered by the book.

The publishers have executed their portion of the book in a most satisfactory manner, and have, thereby, aided materially in properly presenting the author's elaborate treatise.

The Permanent Betterment of the Crippled Child. An Essay on the Operation of the Nonresidential System of Education and Care, the Social Principles Involved, and the Restoration of Crippled Children to Places as Useful Members of the Community. An Account of the Work of the Association for the Aid of Crippled Children. By DOUGLAS C. MCMURTRY. New York: Published by the Author, 1911. Pp. 50.

Choice words and graphic sentences give setting to a beautifully expressed thought in directing attention to the necessary forms of education to be afforded to the crippled child. The impossibility of having a child afflicted with deformity keep up to the public school standards is the theme around which the author has built a plan for the intellectual training of the crippled child irrespective of an unnatural standard.

The little brochure of eleven pages presents an account of the work of the Association for the Aid of Crippled Children. It has enabled children to avail themselves of opportunities which are at hand, but which are just beyond their unaided reach. It is more than temporary relief—it gives instructions to the families in the manner of proper care and the proper influence to be exerted in the accomplishment of permanent results. The crippled child has great possibilities with but a little intelligently directed assistance. It can overcome the special handicaps imposed by the deformity. The association aims to guarantee to crippled children the chance to make good themselves, and to give to them the square deal of equal opportunity.

Statische Gelenkerkrankungen. Von Dr. GEORG PREISER, Hamburg. Mit 272 Abbildungen im Text. Stuttgart: Ferdinand Enke, 1911. Pp. viii-278.

This volume of 278 pages is devoted to the study of static conditions of the various joints, particularly those of the lower extremity. The author emphasizes the immense importance of recognizing the various joint disturbances due to improper static conditions and distinguishing them from rheumatism, gout, and other chronic articular affections. The author seeks to prove that even arthritis deformans is caused by a disturbed relation of the articular surfaces of the various joints affected by this disease. The work represents the results of anatomical, clinical, and x ray studies of 2,400 cases. It accentuates the importance of this phase of orthopedic surgery and puts in a convincing way before the reader the proofs of the great etiological importance of abnormal "static" conditions in the development of serious and permanent joint disturbances. By making clear these etiological factors it becomes an easy task for him to draw attention to the prevention of such disturbances by early recognition of the faulty joint position. This subject so ably discussed in the present volume is of great interest, not only to the orthopedic specialist, but also to the general surgeon, the

general practitioner, and physician in charge of hydro-pathic establishments. Familiarity with this subject will prevent many of the disastrous results that are so common from a wrong diagnosis of these lesions. The book is not one to take up and read in a superficial way, but requires careful study, especially the chapters devoted to the anatomy and x ray pictures of normal and pathological joints. The chapters on the mechanism of flat foot, invite special attention. The pictures are numerous and excellent.

NEW PUBLICATIONS

Taylor, Alonzo Englebert.—Digestion and Metabolism. The Physiological and Pathological Chemistry of Nutrition. For Students and Physicians. Philadelphia and New York: Lea & Febiger, 1912. Pp. vi-560. (Price, \$3.75.)

Bythell, W. J. S., and Barclay, A. E.—X Ray Diagnosis and Treatment. A Textbook for General Practitioners and Students. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1912. Pp. xii-147. (Price, \$5.50.)

Thomson, Alexis, and Miles, Alexander.—Manual of Surgery. Volume II. Regional Surgery. Fourth Edition, Revised and Enlarged, with 274 Illustrations. London, Glasgow, and Edinburgh: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1912. Pp. xv-924. (Price, \$3.50.)

Wood, Casey A., Andrews, Albert H., and Head, Gustavus P.—The Eye, Ear, Nose, and Throat. Volume III of the Practical Medicine Series for 1912. Chicago: Year Book Publishers, 1912. Pp. 358. (Price, \$1.25.)

Costavelli, José Codina.—La Angulostomiasis ó Anemia de los Mineros. Como Enfermedad Social. Especialmente en España. Madrid: Eduardo Arias, 1912. Pp. 159.

The Department of Surgery of the Medical School of Harvard University. Report of Research Work, 1911-1912. Bulletin No. VII. Pp. 156.

Infant Mortality and Milk Stations. Special Report of the Committee for the Reduction of Infant Mortality of the New York Milk Committee, 1912. Pp. xi-176.

Thomson, Alexis, and Miles, Alexander.—Manual of Surgery. Volume III. Operative Surgery. With 220 Illustrations. Edinburgh, Glasgow, and London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1912. Pp. xv-565.

Weiss, Eduard.—Die physikalische Therapie der Gelenkkrankheiten für Aerzte und Studierende. Mit 83 Textabbildungen. Berlin und Wien: Urban & Schwarzenberg, 1912. Pp. viii-265. (Price, \$1.50.)

Strauss, H.—Vorlesungen über Diätbehandlung innerer Krankheiten gehalten vor reiferen Studierenden und Aerzten. Mit einem Anhang "Winke für die diätetische Küche" von Elise Hannemann. Dritte, vermehrte und verbesserte Auflage. Berlin: S. Karger, 1912. Pp. viii-429.

Richet, Charles.—The Pros and Cons of Vivisection. With a Preface by W. D. Halliburton, M.D., LL.D., F.R.S. New York: Charles Scribner's Sons, 1912. Pp. xxx-136.

Clark, J. Bayard.—Essays on Genitourinary Subjects. New York: William Wood & Co., 1912. Pp. 174. (Price, \$1.25.)

Talmey, Bernard S.—Neurasthenia Sexualis. A Treatise on Sexual Impotence in Men and Women. For Physicians and Students of Medicine. With Nineteen Drawings in the Text. New York: The Practitioners' Publishing Co., 1912. Pp. xi-196. (Price, \$2.)

Larguier.—Le Gout et l'odorat. Questions biologiques actuelles. Collection de monographies publiées sous la direction de M. A. Dastre, membre de l'Institut, professeur à la Sorbonne. Paris: Librairie scientifique A. Hermann & Fils, 1912. Pp. 94.

Proceedings of the American Medicopsychological Association at the Sixteenth Annual Meeting, held in Denver, Colo., June 10 to 22, 1911. Pp. 369.

Semiannual Report of Schimmer & Co. (Fritzsche Brothers). Miltitz, near Leipzig, London, New York. April, 1912. Pp. 197.

Sixty-third Annual Announcement of the Woman's Medical College of Pennsylvania. Session of 1912-1913. Pp. 53.

Peabody, Francis W., Draper, George, and Dochez, J. R.—A Clinical Study of Acute Poliomyelitis. Monograph No. 4 of the Rockefeller Institute for Medical Research. New York: The Rockefeller Institute for Medical Research, 1912. Pp. 187.

Bulletin of Tulane University of Louisiana. Series 13, No. 7, July, 1912. Announcement for 1912-1913. Pp. 94.

Seventeenth Report of the Board of Health of the Town of Montclair, N. J. From January 1, 1911, to December 31, 1911. Pp. 86.

Tenth Annual Report of the Director of the Bureau of Science to the Honorable Secretary of the Interior. By Paul C. Freer, Director of the Bureau of Science. For the Year Ending August 1, 1911. Pp. 69.

Transactions of the American Association of Obstetricians and Gynecologists. Volume XXIV. For the Year 1911. Pp. 358.

The Registration and Sanitary Supervision of Pulmonary Tuberculosis in New York City by the Department of Health. Monograph Series No. 1. By John G. Billings, Jr., M.D., Chief of the Division of Communicable Diseases. Pp. 104.

Report of the Commission on Milk Standards Appointed by the New York Milk Committee. Reprint from Public Health Reports No. 78. Washington: Government Printing Office, 1912. Pp. 30.

Twenty-second Annual Report of the Eye, Ear, Nose, and Throat Hospital of New Orleans, La. January 1, 1911, to December 31, 1911. Pp. 76.

Transactions of the American Urological Association. Tenth Annual Meeting at Chicago, Ill., September 26 and 27, 1911. Edited by Dr. Charles Greene Cumston, of Boston. Pp. 384.

Bellevue and Allied Hospitals of the City of New York. Ninth Annual Report, 1910. Pp. 98.

Digest of Comments on the Pharmacopœia of the United States of America (Eighth Decennial Revision) and on the National Formulary (Third Edition). For the Calendar Year Ending December 31, 1910. By Murray Galt Notter and Martin I. Wilbert. Washington: Government Printing Office, 1912. Pp. 784.

Transactions of the American Pediatric Society. Twenty-third Session, Volume XXIII. Edited by Linnaeus Edford La Fêtra, M.D. Pp. 388.

Sewage Pollution of Interstate and International Waters. With Special Reference to the Spread of Typhoid Fever. by Allan J. McLaughlin. Hygienic Laboratory Bulletin No. 83. Washington: Government Printing Office, 1912. Pp. 296.

Studies on the Virus of Typhus. By Joseph Goldberger, Passed Assistant Surgeon, Public Health and Marine Hospital Service, and John F. Anderson, Director of the Hygienic Laboratory, Public Health and Marine Hospital Service. Reprint from Public Health Reports, No. 82. Washington: Government Printing Office, 1912. Pp. 30.

Examination of Excreta for Typhoid Bacilli. By L. L. Lumsden and A. M. Stimson. Passed Assistant Surgeons, Public Health and Marine Hospital Service. Report of an Outbreak of Typhoid Fever at Lincoln, Neb., in 1911. By L. L. Lumsden. Report from Public Health Reports No. 80. Washington: Government Printing Office, 1912. Pp. 17.

Annual Announcement of the Ontario College of Pharmacy, Affiliated with the University of Toronto. Thirty-third Session, 1912-1913. Pp. 87.

Official News.

Public Health Service Health Reports:

The following cases of and deaths from cholera, yellow fever, plague, and smallpox were reported to the surgeon general of the United States Public Health and Marine Hospital Service during the week ending August 16, 1912:

CHOLERA.—FOREIGN: China, June 1912, epidemic, 1,000 East Indies, July 11, present; India (Madras presidency), May 131, 2,006 cases, 3,081 deaths; June 1912, 8,790 cases, 3,131 deaths; Indo China, June 11-17, 47 cases, 36 deaths; 1,130 (16 cases), June 27, epidemic; Java, June 1912, 1 case, 1 death; Kwangsi, June 1912 (Astrakhan), July 12, present; Siam, Siam, June 1912.

1 case, 1 death; *Turkey in Asia* (Adana Province), April 8-June 17, 53 cases, 36 deaths; *Algeria* (Province), April 17-July 13, 205 cases, 151 deaths; *Zanzibar*, August 10, present.

YELLOW FEVER.—*Brazil*, July 1-15, 7 deaths; *Colombia*, July 14-20, 1 death; *Ecuador*, June 1-30, 20 cases, 14 deaths; *Mexico*, July 6-August 9, 7 cases, 3 deaths; *Peru*, January 15-April 30, 20 deaths; *Venezuela*, July 20-22, present.

PLAGUE.—*ISSUARE*, *Philippine Islands* (Manila), June 24-26, 1 case, 1 death.

PLAGUE.—*FOREIGN*.—*Algeria*, July 6-13, 6 deaths; *Arabia* (Aden), July 1, 1 death; *China*, present, *Japan*, July 2, July 18, 8 cases; *India*, May 1-July 6, 58 cases, 111 deaths; *Iran* (China, June 11-12), 2 cases; *Java*, June 16-29, 26 cases, 23 deaths; *Mauritius*, April 6-June 10, 20 cases, 3 deaths; *Venezuela* (Caracas), July 17-22, 2 deaths.

SMALLPOX.—*UNITED STATES*.—*Connecticut*, July 1-31, 8 cases; *Iowa*, June 1-30, 1 death; July 1-31, 21 cases; *Kansas*, June 1-31, 30 cases; *Massachusetts*, July 1-31, 7 cases; *New Jersey*, June 1-30, 1 death; July 1-31, 1 case; *Vermont*, July 1-31, 12 cases.

SMALLPOX.—*FOREIGN*.—*Andorra* (Llana), July 7-13, 6 cases; *Brazil*, May 1-July 6, 3 cases, 35 deaths; *Canada*, July 14-August 3, 4 cases; *China*, present, *Chile*, June 30-July 6, 7 cases, 2 deaths; *Egypt* (Cairo), June 4-24, 3 cases, 1 death; *France* (Paris), July 14-20, 2 cases; *Germany*, July 14-20, 5 cases; *India*, present; *Jamaica*, June 16-29, 9 cases, 1 death; *Mexico*, May 10-August 1, present; *Portugal* (Lisbon), July 14-20, 5 cases; *Russia* (Odessa), July 6-20, 6 cases; *South Africa* (Durban), June 9-20, 15 cases, 1 death; *Spain* (Valencia), July 14-20, 1 case; *Strait Settlements*, June 16-22, 1 case; *Turkey* (Constantinople), July 8-21, 10 deaths; *Uruguay* (Montevideo), May 1-31, 1 case.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending August 17, 1912:

Appel, D. M., Colonel, Medical Corps. Relieved from duty at Fort Sam Houston, Texas, and ordered to Chicago, Ill., for duty as chief surgeon of the Central Division, relieving Lieutenant Colonel William B. Banister, Medical Corps, from temporary duty as chief surgeon. **Cade**, W. T., Jr., Lieutenant, Medical Corps. Relieved from duty with Field Hospital No. 2, Presidio of San Francisco, California, and assigned to that post for station and duty. **Carr**, William B., Lieutenant, Medical Corps. Granted thirty days' leave of absence. **Chamberlain**, W. P., Major, Medical Corps. After arrival in New York City, and upon expiration of leave of absence, will proceed to Plattsburg Barracks, N. Y., for station and duty. **Creighton**, Samuel S., Lieutenant, Medical Corps. Granted one month's leave of absence. **Crosby**, William D., Colonel, Medical Corps. Granted leave of absence for one month and fifteen days. **Dutcher**, B. H., Major, Medical Corps. Relieved from duty at Plattsburg Barracks, N. Y., and ordered to the Army Service School, Fort Leavenworth, Kansas. **Fife**, James D., Captain, Medical Corps. Relieved from duty at Fort Slocum, N. Y., and ordered to the Army and Navy General Hospital, Hot Springs, Arkansas, for station and duty. **Frank**, Clarence E., Captain, Medical Corps. Granted leave of absence for two months. **Harris**, Jesse R., Captain, Medical Corps. Relieved from treatment at Letterman General Hospital, Presidio of San Francisco, California, and ordered to Fort Slocum, N. Y., for temporary duty; granted leave of absence for one month, with permission to apply for one additional month. **Kremers**, E. D., Lieutenant, Medical Corps. Relieved from duty at the Presidio of San Francisco, Cal., and ordered to Fort Shafter, H. T., for station and duty. **McCulloch**, C. C., Jr., Major, Medical Corps. Relieved from duty at Fort D. A. Russell, Wyoming, and ordered to Fort McDowell, California, for duty. **McCulloch**, E. C., First Lieutenant, Medical Reserve Corps. Ordered to Columbus Barracks, Ohio, for station and duty. **Mudd**, Leo C., Lieutenant, Medical Corps. Granted leave of absence for two months, on surgeon's certificate. **Nelson**, Kent, Major, Medical Corps. Relieved from duty at Whipple Barracks, Arizona, and ordered to the United States Military Prison, Fort Leavenworth, Kansas, for duty. **Palmer**, Fred W., Captain, Medical Corps. Ordered to Fort Rosencranz, Cal., for temporary duty.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending August 17, 1912:

Downey, J. O., Passed Assistant Surgeon. Detached from the *Chester* and ordered to the Bureau of Steam Engineering, Navy Department. **Grieve**, C. C., Passed Assistant Surgeon. Detached from the *Indiana* and

ordered to the *Nebraska*. **Heatley**, J. E., Acting Assistant Surgeon. Ordered to the Navy Recruiting Station, Kansas City, Mo. **Jenness**, B. F., Passed Assistant Surgeon. Detached from the *Nebraska*, and granted a month's sick leave of absence.

Births, Marriages, and Deaths.

Married.

Basney—Parmentier.—In Wilmington, Del., on Monday, May 20th, Dr. Sterling Custus Basney and Miss G. R. Parmentier. **Foss—Jenkins.**—In Peabody, Mass., on Thursday, August 8th, Dr. Ralph Emery Foss and Miss Annie L. Jenkins. **Godfrey—Weaver.**—In Philadelphia, on Thursday, August 15th, Dr. James Mines Godfrey and Miss Kate Weaver. **Henes—Manegold.**—In Milwaukee, Wis., on Monday, August 5th, Dr. Edwin Henes, Jr., of New York, and Miss Irma L. Manegold. **Nelson—Taylor.**—In Philadelphia, on Friday, August 9th, the Rev. Dr. John Nelson and Dr. Mary M. Taylor. **Robinson—Gardiner.**—In Madisonville, Ky., on Wednesday, August 7th, Dr. Roy Forrest Robinson, of Hopkinsville, and Miss Elinor Margaret Gardiner. **Sheldon—Du Bose.**—In Washington, D. C., on Wednesday, August 14th, Assistant Surgeon Luther Sheldon, Jr., United States Navy, and Miss Helen Du Bose, daughter of Medical Director William R. Du Bose, United States Navy, and Mrs. Du Bose. **Stewart—Newnons.**—In Harrington, Del., on Wednesday, August 7th, Dr. Seldon Stewart, of Buffalo, and Miss Emma Veazy Newnons.

Died.

Alpaugh.—In High Bridge, N. J., on Tuesday, August 13th, Dr. William Chittles Alpaugh, aged seventy years. **Barnes.**—In Hopewell, Nova Scotia, on Monday, August 5th, Dr. William Fielding Barnes, of Halifax, aged twenty-four years. **Bishop.**—In Guilford, Conn., on Friday, August 9th, Dr. Ernest S. Bishop, of Brooklyn, N. Y., aged forty-five years. **Borden.**—In Brockton, Mass., on Thursday, August 8th, Dr. Henry Francis Borden, aged sixty-seven years. **Bridges.**—In Syracuse, Mo., on Thursday, August 1st, Dr. T. R. Bridges, aged sixty-nine years. **Brockett.**—In Cleveland, Ohio, on Monday, August 12th, Dr. Andrew Jackson Brockett, aged seventy-six years. **Bruce.**—In Bridgeton, R. I., on Thursday, August 8th, Dr. Henry I. Bruce, aged sixty-four years. **Collins.**—In Forsyth, Ga., on Sunday, August 4th, Dr. Oscar C. Collins, aged seventy-five years. **Conn.**—In Seattle, Wash., on Wednesday, July 24th, Dr. Frank M. Conn. **Fordham.**—In Pensacola, Fla., on Thursday, August 8th, Dr. William F. Fordham. **Glaze.**—In St. Louis, Mo., on Sunday, August 11th, Dr. L. Alonzo Glaze, of Grayville, Ill. **Grove.**—In Renfrew, Pa., on Tuesday, August 6th, Dr. Leon Vance Grove, aged forty years. **Hotchkiss.**—In Washington, D. C., on Tuesday, October 6th, Dr. Samuel Campbell Hotchkiss, aged thirty-two years. **Hoyer.**—In Tonawanda, N. Y., on Friday, August 16th, Dr. Frederick F. Hoyer, aged ninety-one years. **Mason.**—In Henrietta, N. Y., on Tuesday, August 13th, Dr. Daniel Gaylord Mason, aged fifty-seven years. **Moran.**—In Norfolk, Va., on Monday, August 12th, Dr. McCandlish Monroe Moran. **Owens.**—In Hartshorne, Okla., on Sunday, August 4th, Dr. B. B. Owens. **Palmer.**—In North Woodstock, Conn., on Saturday, August 3d, Dr. William H. Palmer, of Providence, R. I., aged eighty-three years. **Pensyl.**—In Johnstown, Pa., on Sunday, August 4th, Dr. Philip H. Pensyl, aged seventy-one years. **Platt.**—In Wallingford, Pa., on Wednesday, August 14th, Dr. Isaac Hull Platt, aged fifty-nine years. **Purnell.**—In Philadelphia, on Friday, August 9th, Dr. Howard G. Purnell, of Ansonville, Pa., aged forty-three years. **Seip.**—In Atlantic City, N. J., on Tuesday, August 6th, Dr. Christian P. Seip, of Pittsburgh, Pa., aged sixty-five years. **Warren.**—In Niagara Falls, N. Y., on Monday, August 12th, Dr. E. Philip Warren, aged thirty-nine years. **Watson.**—In Chicago, on Tuesday, August 13th, Dr. Lewis H. Watson, aged seventy years. **Williams.**—In Bedford, Ind., on Tuesday, August 6th, Dr. Abram D. Williams, aged seventy-seven years.

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WHOLE No. 1761.

Lectures and Addresses.

THE CINEMATOGRAF AS AN AID TO MEDICAL EDUCATION AND RESEARCH.*

A Lecture Illustrated by Moving Pictures of Ultra-microscopic Life in the Blood and Tissues, and of Surgical Operations.

By RUDOLPH MATÁS, M.D.,
New Orleans.

In selecting the cinematograph as an aid to medical education and research as the subject for this address, I have been prompted by several considerations, chief among which is the desire that this official duty, which devolves upon me as your presiding officer, shall not fall too heavily upon you in the midst of your arduous and exhausting labors.

In choosing this subject, I have been inspired by the example set by one of my distinguished predecessors who, four years ago, charmed and delighted us by a most entertaining and instructive exhibition of the artistic treasures which he had accumulated in the course of a lifetime, largely devoted to the cult of art as applied to medicine and surgery. This lecture he made most effective by utilizing photographic reproductions of the great masterpieces of the pictorial art, which had been inspired or produced by the medical men of all ages, either in elucidation of medical texts or of their procedures. After reviewing the modes of illustrating medical books, thoughts, and methods—and exhibiting the results obtained by use of the pencil, the brush, and the engraver's and etcher's tools—he laid stress upon the imperfections and poverty of medical illustrations which had characterized the production of medical books up to comparatively recent times. This crudity and glaring defect in the illustrator's art had been especially apparent in the medical book making of this country, but we are now happy to testify that, thanks to Dr. Howard Kelly's great enterprise, devotion, and personal sacrifice and stimulating influence, in surrounding himself with the highest order of artistic talent available abroad, this reflection and this complaint are no longer justified; for America can now safely pride herself in the most perfect and creditable illustrations that adorn the pages of medical books the world over. In closing this worthy address, Doctor Kelly called attention to the import-

ant part that photography and stereophotography had come to play in recording surgical operations and especially in familiarizing the student with the technique of surgery as exhibited by the most approved specialists. We all appreciate the immense value of the personal work that he has since done in behalf of surgical education, in this direction, by the publication of his well known *Stereoclinic*.

Without presuming to imitate Doctor Kelly, I have, however, sought in the same spirit, but with no claim to authority or special competence, to direct your attention and enlist your sympathetic interest—as teachers and skilled technicians—in the value and availability of another method of photographic reproduction, which, I believe, far surpasses all others in inherent interest, educational value, and in its immense though undeveloped possibilities for the scientific and technical training of the men of our craft.

It is in this special sense that I now wish to speak to you of chronophotography—or what is more familiarly known as the moving picture process—and of the moving picture machines which, under various names, are in evidence all over the world. For the living or motion picture machine, whether it be called the cinematograph (Lumière) (from *κίνημα*, movement—derived from *κίνησις*, to move), kinetograph, kinoscope (Edison), photocinegraph, heliocinegraph, cinegraphoscope, eventoscope, kinebleposcope, photopolygraph, photocinephotograph, movementscope, badizoscope, pentamimograph, biograph, or by any other patented name attached to "graph" or "scope," and, added to classical and nondescript roots, is, in its fundamental principles, based upon the methods of chronophotography. It is always an instrument which analyzes motion by means of a series of instantaneous photographs taken at very short and equal intervals of time, capable in its perfected forms of recording with equal fidelity and distinctness the objects that are placed before it; reproducing the halting gait of an ataxic, hemiplegic, or paraplegic patient or the vibrations of the wings of a fly, bee, or wasp—which last scarcely one one hundredth of a second (Lucien Bull)—or the flight of a modern military projectile which requires consecutive serial exposure varying from a one millionth to one ten millionth of a second, or the record of 500 consecutive pictures within one tenth of a second. (Cranz, quoted by Gradenwitz, *Scientific American*, ciii, p. 417.)

This is the machine which has become one of the most astounding and prodigious forces in the social organization of the twentieth century, in diffusing, imparting, and disseminating knowledge, as well as in providing diversion, recreation, and amusement

*Presidential address read at the meeting of the Southern Surgical and Gynecological Association, held at Washington, D. C., on December 13, 1911.

to the countless multitudes of the civilized world. Though originally devised by purely scientific men, for the accurate observation and recording of natural phenomena, chronophotography has been perfected and developed into most amazing effectiveness by inventors and physicists who, intent upon utilitarian and financial returns, have concentrated their efforts in perfecting the apparatus as a means of popular diversion. In this way great private concerns and companies have been organized all over the civilized world, whose chief if not sole aim has been to exploit this new photographic magic in every direction that might yield the largest pecuniary returns. The efforts of the earlier industrial pioneers met with an immediate response; success everywhere crowned their efforts, because everywhere we find man hungry for the reproduction of lifelike scenes and stirring actions which arouse the emotions that lie awake or dormant in every human breast. In this way chronophotography has grown up in the course of a decade, from a mere rudimentary and shapeless idea, into a titanic Colossus which is now striving for power, as an indispensable world force, with the great world industries, even now scarcely second in importance to the great inventions like telegraphy, telephony, phonography, and the printing press, with which it is so closely allied in the dissemination of human intelligence and in preserving with all their vividness and intensity the daily, nay, the hourly events of the world's history.

Without stepping beyond the boundaries of our own country, we learn (*Moving Picture World*, vii, p. 183, 1910) that there were in 1910 about 10,000 or 12,000 moving picture theatres, and other places of amusement which use the moving pictures, in the United States. The population of this country is about 90,000,000 and if you divide 90,000,000 by 10,000 we arrive at the deduction that there is one moving picture house for every 9,000 of the population. Again we are told (*Moving Picture World*, vi, p. 128, 1910) that twenty new productions go out every week to the 12,000 biograph theatres in the United States, spread over 1,500,000 feet of film, and that 5,000,000 of people are estimated to be in daily attendance at these picture shows.

E. Palmer Lewis, in the *Survey*, wrote two years ago: "In New York city alone there are some 350 motion picture theatres, with daily audiences of 1,000,000 or more, and a Sunday attendance of 500,000. Chicago entertains daily some 200,000 people in its 345 picture shows, and Philadelphia 158 nickelodeons claim audiences of 150,000 every day of the week."

Replies to letters sent out by Lewis to the principal cities of the country, combined with statistics compiled by *Insurance Engineering* for April, show that in 158 leading cities of this country there were, in 1909, 1,987,000 moving picture exhibitions. A statement of the number who attended all these exhibitions would be a mere guess, but 4,000,000 a day is a conservative estimate, which would be far exceeded, probably doubled, by a calculation based upon the statistics of the present time.

"Two thirds of the entire theatre going public is entertained by this infant industry with its \$50,000,-

000 of invested capital and its 190 miles of films daily thrown upon the screens of 7,000 nickelodeons—this in round, bare figures is the estimate of the new amusement that has sprung up within a decade and become popular only within four or five years."

What has been said of the moving picture movement in this country might be repeated, with even greater emphasis, of the progress of the moving picture in Great Britain and her colonial possessions and of all continental Europe, especially of France, Germany, Italy, Austria, and Spain, as well as of other Mediterranean countries, peopled with an emotional and pleasure loving population, who have greeted the advent of the moving picture show with eagerness and enthusiasm as an economical means of satisfying the imperative and universal craving for excitement and amusement.

But to furnish amusement and recreation is not the only feature of the cinematographic machine. The signs of the times all point to the belief that the great captains of this industry are beginning to realize that there are other equally profitable fields in which to invest the immense capital which this source of amusement alone has yielded. Suggestions are being offered and experiments are being tried of all kinds, proving that, in addition to an immense sphere of strictly scientific usefulness, the picture machine will ultimately revolutionize the present methods of general education and training in the technical and industrial, as well as in the public schools. It does not require a prophet's vision to see that in less than fifty years from now, children in our schools will be taught history with moving pictures as a principal guide. The Champagne riots which recently made all France tremble were photographed by the motion picture camera. The riots, to become a matter of history, have been saved for the future by this means, and we have the true record of the events as they really took place. The same is true of the late pictorial record of the imposing coronation of the British sovereigns, and of the recent scrimmage of the insurgents and federals just across the Rio Grande in Mexico; of the Italo-Turkish conflict in Tripoli, and of the great revolution in the Celestial Empire, with its many battles, now laying the foundation for the Republic of China. These, and all historical events, are being portrayed with absolute fidelity on the spot, and will be accepted in future as the unchallenged witnesses, whose testimony must be the guide of future chroniclers and historians.

For geographical instruction, the cinematograph now sends its lines all over the earth. The eye of the camera makes pictures from Brazil to the Yukon, from China to the Cape, from the Cape to Cairo. "It has become the teacher of the public mind, the organ of public opinion, the university of the common people."

In medical, surgical, and natural science—anthropology, botany, entomology, natural history generally—the motion pictures present wonders and facts scarcely possible of realization; while its illustrations of industrial life, technical processes and mechanical devices, are unique in their thoroughness and definition.

As an agent in imparting sanitary and hygienic

knowledge of great importance to the masses, the cinematograph is playing a most effective part. For instance, in impressing upon the public mind the dangers which lurk about the house fly as a transmitter of disease and of the importance of eradicating this pest, the moving picture is far superior to any lecturer's ability in its power to depict the peril.

"Pictures are made showing the fly invading a chunk of meat and laying its eggs. One sees these eggs hatching out and the maggots crawling over the meat. The maggots then bury themselves in the earth for a few days, and when they emerge they are still wingless, but on the eleventh day they are grown flies. One sees them feasting on dead fly; then fly from there to the sugar bowl and deposit some of the microorganisms they have collected. Then the fly rests on the edge of a cuspidor, and from there to an infant's nursing bottle, and, as the film is finished, we see the baby suckling at his bottle, the nipple of which is covered with germs, unless it has been previously sterilized." (*Moving Picture World*, vi, p. 375, 1910.)

Colonial governments have long recognized its usefulness in bringing to the very doors of the people at home, the importance, value, and beauty of the British dependencies, not only as a means of inducing emigration, but of securing the introduction of fresh capital for further development, and it is fairly common knowledge that there is a constant movement in the direction of securing fresh pictorial demonstrations of future possibilities for immigrant and investor in such countries as Australia, New Zealand, Canada, British Columbia, Argentine, etc.

In religious, missionary, social, and political work, the field of the cinematograph is equally great and important, both as a source of revenue and the conviction of usefulness and further effort instilled. For economical advertisement and public enlightenment it has no equal, and the benefit to manufacturers has been out of all proportion to the cost, illustrating the scientific, industrial, and economical changes of the present day.

Various governments have already applied the cinematograph in naval and military affairs—gunnery, target practice, fleet movements, manoeuvres—and before long every regiment and every warship will be equipped with a cinematograph for the acquisition and instructive display of pictures; indeed, to form a systematic course of education in training establishments afloat and ashore. (Clegg. *Moving Picture World*, vi, p. 331, 1910.)

In the preceding remarks only brief mention has been made of the services accorded by the cinematograph to medicine and surgery, and it is this particular field of application that I now wish to consider more attentively.

While it is true that the cinematograph had its earliest beginnings in the minds of physicists such as Plateau (1829), Colman Sellers, Reville, du Hauron, and the astronomer Janssen, who, in 1875, devised an astronomical revolver to show successive pictures of the planet Venus near the limb of the sun at her transit, we must not forget that among the greatest and most fundamental contributions to

the science and methods of chronophotography were those made in the study of physiological problems by Jules Etienne Marey, the eminent and indefatigable French physiologist. He devised a delicate photographic gun, which he used especially in the study of the flight of birds and in all the forms of locomotion, aquatic, aerial, and terrestrial as exhibited by various animals and by man, and by his pupil Demeny who invented the photoscope for the special purpose of reproducing the motions of the lips and so successfully that deaf mutes were able to read the photographic sentences. As an instance of Marey's application of the cinematograph to physiological problems, in demonstrating muscular motions of the heart as an organ of the circulation (J. E. Marey, *The History of Chronophotography; Smithsonian Reports*, Washington, D. C., 1901), we quote: "The heart of an animal laid bare and brilliantly illuminated gives on the moving film the succession of systole and diastole of its auricles and ventricles. The motion of the eyes themselves was also shown at the Marey Institute by his pupil Orchansky. He has photographed the dotted trajectory of the eyes in reading and in this motion has been able to distinguish the components, due respectively to the ocular muscles and to the displacements of the head."

Even before Marey had begun his first researches on the flight of birds he had been preceded by the distinguished American investigator, Muybridge, a photographer of Sacramento, who, in 1878, began his now famous studies on the motion of horses and other quadrupeds and man which formed the basis of his monumental work on *The Human Figure in Motion*, published in 1901 under the auspices of the University of Pennsylvania. As told in this great work, Muybridge, as the result of numberless experiments, in which he displayed an unequalled capacity for taking infinite pains in the pursuit of an idea, finally devised his zoopraxiscope, a machine based upon the principles laid down by the Belgian physicist Plateau in the early part of the last century, for the purpose of demonstrating the persistence of retinal impressions. Photographic analyses of changes incidental to motion of any kind commenced with this investigation, and the zoopraxiscope was the first instrument ever constructed or devised for demonstrating by synthetical reconstruction movements originally photographed from life, and for many years it was the only apparatus applicable to this purpose.

It was not until 1893, or more than thirteen years after it was first used, that any improvement in its construction, or in its effects on the screen, was made public. The improvements in the modern instrument are due to the invention of celluloid films substituted for the glass plates in receiving and exhibiting the photographic images.

In 1878, Muybridge published the results of his labors under the general title, *The Horse in Motion*. This was followed in 1881 by a quarto volume of some 200 pages of photographs illustrating various movements of horses, dogs, and other animals; also feats of the gymnasium and the field by some California athletes. This encouraged a more comprehensive investigation. The funds were lacking, however, until the cooperation of the University of

Pennsylvania was secured through Dr. William Pepper. The work was commenced in 1884 and completed in the autumn of 1885.

The results of this investigation, consisting of 781 mezzotint engravings with examples of more than 20,000 acts of motion of animals, birds, and human beings, were in 1887 published in eleven folio volumes, under the title of *Animal Locomotion*.

The author's edition of this volume is valued at \$2,500. Muybridge used upward of 500,000 plates in his experiments. Wet plates were used and exposures of 1/5000 of a second made. The odd pictures obtained were projected at a rate varying from twelve to twenty-two in a second, by means of the zoopraxiscope.

This colossal work is an imperishable contribution of chronophotography as applied to physical and physiological problems in locomotion, by an American genius.

The subsequent discoveries of Marey and his pupils, Lucien Bull and Demeny; of Anschütz, in Germany; of Augustus Le Prince, Jenkins, Costler, H. R. Heyl, all inventive Americans; of Levison, and especially the Lumière brothers; of Thomas A. Edison; of Cranz, and, very recently, of Comandon, assisted by the Pathé brothers—and of many others too numerous to recall—have culminated in the present most effective machine and its prodigious capacity for taking distinct instantaneous pictures in *incredibly short exposures*.

Among the medical men who deserve a conspicuous place in the history of the moving picture in its application to the study of disease is Dr. Walter G. Chase, of Boston, Mass., whose pioneer efforts in this direction are recorded in a lecture delivered before the Boston Medical Library Association, November 15, 1905, and published in the *Boston Medical and Surgical Journal* for November 23, 1905. Interested in the study of pathological motion he availed himself of the services of the American Mutoscope and Biograph Company in analyzing the convulsive phenomena of the epileptic seizure. This is a difficult problem for the reason that it takes several minutes to set up and focus a biographic camera and the patient is not always sufficiently obliging to have his seizure out of doors in an available place and also at a time when the sun is at its best for an outdoor light picture, or in a room with powerful electric lights especially arranged for the purpose. The only place available for this purpose is an epileptic colony, and in this he was fortunate in the cooperation of Doctor Spratling and his assistants at the Craig Colony for Epileptics. The method by which he obtained his pictures is interesting. Realizing that it was impossible to set up a camera after the seizure had commenced he had some 125 male patients from the infirmary assembled at a convenient spot out of doors on a warm summer day. The clothes were removed and the patients covered with blankets, so that, a seizure occurring, the blanket could be readily dropped, and the subject within a very few seconds placed in the range of the camera. The results obtained as shown by the prints which accompany Doctor Chase's paper show that his painstaking efforts were eminently successful in "biographing" twenty-one separate seizures including one patient in the status

epilepticus, all of which are shown with remarkable accuracy and vividness in the prints which accompany Doctor Chase's paper.

In the case of status epilepticus 200 feet of film were used, covering a total of 3,200 pictures for this single case, which were obtained at the rate of sixteen exposures to every foot of film. He has biographed in a similar way the movements of the eyes in nystagmus and groups of rhythmic idiots, each with his individual motion keeping time with music. I agree with the editor of the *Boston Medical and Surgical Journal* in the belief that few physicians could see such a series of epileptic and other neuropathological moving pictures as Doctor Chase has been able to reproduce, without learning something of the disease which neither his previous observations nor his study of textbooks have taught him.

The more usual diseases of the nervous system also are still comparatively little known to the general practitioner of medicine and particularly the medical student or recent graduate. These may, and no doubt in the future will, be reproduced by the biograph in such a way that once seen by the student they will leave an impression hard to eradicate. In this respect Doctor Chase's admirable labors have already anticipated our own firm convictions that the universal adoption of cinematographic pictures as a means of instruction will mark a step far in advance of any yet taken in the application of photography to medicine. There can be no question that the hour is ripe for this innovation and that the immediate future will see its general introduction into our medical schools.

The moving picture machine has also been applied in France and Germany to analyze the gait of ataxic, paraplegic, or hemiplegic, and other pathological types of locomotion. Paul Sainanton has also recently (*Société de neurologie de Paris*, May, 1909) especially and profitably studied the convulsive tics, with moving pictures.

We have already referred to Bull's invention of the ultrarapid cinematograph, by means of which sharp stereoscopic cinematographic views of the flight of a fly or the breaking of a soap bubble are readily obtained.

With the ordinary cinematograph the photographic film moves discontinuously, being arrested at the moment of each exposure. While this is simple enough at moderate speeds, it would be quite impossible when the exposures are made at the rate of 2,000 a second, and the mean speed of the film 400 cm. a second. These are the figures that are necessary for the study of insect flight, and these are attained by the new instrument. With such a speed, the movement of the film must be continuous, and a sharp image is possible only if the exposure does not exceed 1/4000000 of a second, and for this the electric spark gives a light of sufficiently short duration. In order to study the movement represented on the films, it is merely necessary to pass them through the ordinary cinematograph, making some fifteen exposures a second, instead of the 1,500 or 2,000 a second employed in the taking of the photograph, and then the movements one hundred or more times as slow, will be seen, and, in many cases, easily followed.

By means of this very ingenious device, Bull has

obtained admirable motion pictures of the flights of insects of all kinds, and has established thereby important biological laws.

It is the same rapid spark device which has permitted Cranz and others to study the mechanism of the flight of projectiles, the working of self loading arms, the effects of explosives of modern infantry high velocity projectiles in moist clay and in vessels filled with water; the crushing of bones; the explosive effects of such bullets on the skull, etc. All these different phenomena when reproduced on the projection screen seem to occur very slowly and accordingly can be analyzed in all their details.

Turning our attention to other fields, we find that Professor Braus, of Heidelberg, 1911, has demonstrated that the completely isolated embryonic turtle heart continues to beat alone, and to grow as well. I have already referred to Marey's earlier cinematograph records of the heart's movements. Going a step farther, P. H. Eijkman, a Dutch investigator, by combining the Röntgen ray and the cinematograph, has obtained remarkable pictures of the heart in motion. Kaestle and Rieder, cooperating with the engineer Rosenthal, have been able to follow the movements of the stomach in digestion. They call this novel branch of chronophotography, *bi-röntgenography*. Working on the same lines, we find that J. Carvalho, one of the investigators attached to the Marey Institute, at Paris, recently succeeded (1910) in illustrating by cinematographic x ray pictures the process of digestion in warm and cold blooded animals. The animals under test were fed with a bismuth meal. Experimenting with the frog, the digestive tube of this batrachian was isolated and photographed with the cinematographic apparatus. A series of motion pictures were also taken through the fluoroscopic screen, and the two series, the simple and the x ray image, were compared. It was found that both series corresponded, the external peristaltic movements caused by the progress of the bismuth bolus, agreeing with the radiographic view of the bolus as seen through the screen in the lumen of the bowel. In this way, Carvalho's x ray cinematographic pictures have succeeded in affording a reliable reproduction of the digestive process in the different species of animals placed under observation.

But undoubtedly the greatest triumph that has marked the recent advances of the new science of radiocinematography has been obtained by Comandon and Lomon, of Paris, who have succeeded in projecting and making perfectly practical the permanent moving reproduction of intensified fluoroscopic images of the skeleton and other organs of living animals, which thus far have been available only by ocular inspection or by single plate exposures. As described in their epochal paper in *Presse médicale* for May 27, 1911, No. 42, the results obtained by them with their earlier apparatus were first exhibited before the Society of Radiology of Paris last April. There was no difficulty in demonstrating the motion exhibited by such small animals as frogs, birds, and rats in their entirety. Their radiography is obtained with a rapidity of fourteen images a second. With exposures of twelve images a second the cinematograph picture of the guineapig is obtained.

The skeleton of the entire animal is exhibited in all its moving details, even to such small items as the movements of the patella over the kneejoint. The thoracic cage moves hurriedly or slowly with the respiration. The heart distinctly pulsates in perfect outline. The liver is seen moving up and down with the diaphragm and is shown very clearly above the intestinal mass which is impregnated with the bismuth. The rectum is seen filling with the bismuth paste and then emptying itself of its contents.

In the monkey, the inner visceral life, which is invisible to our eyes by its impermeable integument, is revealed in a striking manner. Here the respiration, rhythmical and slow, as well as the movements of the heart may be readily followed. The stomach is well outlined and even the spleen is visible.

In studying the extremities, flexion and extension as seen in profile, reveal in an astounding manner the mechanism of the condyles on the tibial planes. The movements of pronation and supination in the forearm and the flexion and extension of the wristjoint may be studied in every detail and in a realistic manner. This is a revelation to the observer who is only acquainted with the isolated and plain image. These marvellous researches as stated by Comandon and Lomon, are barely crossing the threshold of practical application. The recent field of physiological and anatomopathological application is only beginning to unfold itself. It is in this sphere that lie some of the greatest unexplored possibilities for the perfected radiocinematograph and it is in this direction that further advances must soon be made.

"We are still in need of greater intensity of illumination for the reproduction of rapid phenomena; we are in need of screens that will give better definition; of tubes that will be more resistant, and of still more sensitive photographic emulsions."

"The day will soon come when these desiderata will be at hand and it will be possible to produce the mechanism of a dislocation or a fracture produced experimentally. As the matter now stands, the progress accomplished in the last twelve months in the graphic reproduction of mobile radioscopic phenomena is simply prodigious."

But the wonders of this new world of light and motion will not cease, and I still have another and more extraordinary achievement of the moving picture to submit, which you will admit is destined to prove of incalculable value in the teaching of microscopic pathology and especially in that ever growing science of hematology and hematic parasitology.

Marey, ever alert for new applications of the graphic method in every department of medical science, had, in 1899, adapted the moving picture machine to a study of motions which take place in the field of the microscope; but it was reserved for the genius and enterprise of J. Comandon, then a young medical student attached to the laboratory of Professor Dastre, of the Sorbonne, to advance a step farther and to utilize, in the most practical fashion, the cinematograph in the newly discovered field of ultramicroscopy.

All those who have worked with reflecting condensers for observing living bacteria under a dark

background illumination, know how strikingly impressive are many of the preparations studied in this light. No doubt, many observers have regretted that they could not preserve these images, not only because of their almost fantastic and living beauty, but also for their great scientific interest. It was this thought that first led M. Comandon to photograph the ultramicroscopic forms that were the objects of his observation. But the ordinary instantaneous pictures failed to reproduce the life that was exhibited to the eyes of the observer, and more often the images were blurred by the constant motion of the microorganisms which displaced themselves from the focus. This prompted him to follow in the footsteps of one of his collaborators and teachers, M. Victor Henri, who, in 1908, had already attempted to apply the cinematograph to the study of Brownian movements. Finding the appliances thus far devised for this purpose absolutely unsatisfactory, he obtained the assistance and cooperation of M. Charles Pathé, of Pathé frères, who placed at his disposal the vast mechanical and scientific resources of his great establishment. By utilizing the parabolic condenser of Lidentopf, constructed by Zeiss, illuminating the field with a powerful thirty ampère arc light (or the sunlight reflected by a heliostat) and adapting the cinematographic camera to a prolongation of the microscope, he was able to reproduce all the images visible in the dark field with a medium amplification. The views thus obtained, as projected on the screen, appear quite large; the human red cells being magnified so that they measure 15.3 cm. in diameter without being blurred, a result which equals an amplification of over 20,000 to 30,000 diameters. The images are reproduced by the cinematograph at the ordinary rate of sixteen pictures a second, which is equivalent to an exposure of $1/32$ of a second for each image. Projected on the screen at the same speed, these images reproduce the real aspect of the preparations. In this way are seen with all their living qualities, the movements of the various elements of the blood, the different parasites which infest it, and their Brownian movements as observed in particles of less than one μ in diameter.

These moving films are, therefore, permanent documents which faithfully reproduce the scenes of ultramicroscopic life and are, in their very nature, as *living* phenomena, not, like dead, fixed, and stained preparations, extremely changeable and of short duration. By analyzing each one of the images thus obtained, the movements of the microorganisms may be decomposed and reduced to their primitive elements, just as Marey successfully analyzed the step of man and the flight of birds.

These views also allow an accurate count of many formed elements which it would be impossible to numerate owing to their motility. For example, the little movable particles of the blood which Hayem and Ranvier had studied long ago, and which were subsequently named "hemokonies," or hemokonia (blood dust) by Müller, have been recently studied with great care by Alfred Neumann, of Vienna, who has ascertained that they are simply minute fat particles. Their appearance in the blood is proportional to the amount of fat ingested and emulsified in the alimentary canal. Neumann was not able to count them accurately because

of their very active Brownian movements. Comandon, with his cinematographic films, experienced no difficulty, and thus obtained numerical tables and charts which clearly demonstrated their direct relation to the amount of fat ingested by the subject under observation. The hemokonic count, thanks to the cinematograph, may now be made available as an index of fat absorption.

In addition, Comandon has been able to study, by this method, a phenomenon which he first discovered and described as an "electric transport of microorganisms and living particles." He found that if an electric current is made to cross the field of observation, certain elements of the blood are attracted and drawn to the anode and others to the cathode, thus grouping the various elements into electronegative and electropositive classes. Thus, the red cells are always attracted by the anode and the trypanosomes by the cathode. The typhoid bacillus moves toward the cathode; some of the colon bacilli move toward the anode. It does not matter how the organisms may be grouped or mixed on the slide, they will always preserve their special or specific affinities. Some microorganisms appear to hesitate and refuse to travel to either pole and become possessed of disorderly movements which last as long as the current is transmitted through the medium in which they live.

Thus we conclude that through M. Comandon's beautiful researches we are not only able to penetrate into the intimate life of the living blood and its parasitic inhabitants, but also to study the processes of reaction and defense (inflammation, migration, diapedesis, phagocytosis, etc.) as they are exhibited in the bloodvessels and in the perivascular tissues.

In this way the cinematograph is unrivalled for permanent record and observation, as well as for the most impressive instruction to students in general and surgical pathology, etc. Comandon has, furthermore, added another original observation which may prove of decided utility in identifying some cells and organisms by their electric attraction and repulsion.

(To be concluded.)

Original Communications.

WHEAT BRAN.*

Its Chemical and Physical Characteristics in the Treatment of Chronic Constipation.

By A. ERNEST GALLANT, M. D.,
New York.

Many centuries before Joseph, under Pharaoh, secured his famous "corner" and for seven years monopolized the wheat market, that cereal had been used as food stuff, and in the passing ages it has become even more important for that purpose, as shown by the relative crop and amount used in the United States in 1910 (*Statistical Abstract*, U. S. Bureau of Statistics, Department Commerce and Labor).

*Read before the Medical Association of the Greater City of New York, May 20, 1912.

Cereal Crops—Estimated.

Corn	.... 3,125,713,000 bushels....	valued at \$1,523,968,000
Wheat	.... 695,443,000 " " "	621,443,000
Potato	.... 338,811,000 " " "	187,985,000

According to the United States Census office, November 8, 1911, the production of flour for 1909 was, Wheat flour	..... 105,756,645 barrels
White flour	..... 105,321,000 "
Graham flour	..... 434,676 "

Total 211,513,290 "
Or approximately 2 barrels per capita.

That "man does not live by bread alone" is well shown by the statement that in 1909, in the United States, over thirty-five millions of hogs were slaughtered and marketed; the total consumption of spirits, malt liquors, and wines was nearly two billion gallons, and of sugar over seven billion pounds, or an average of nearly eighty pounds per capita.

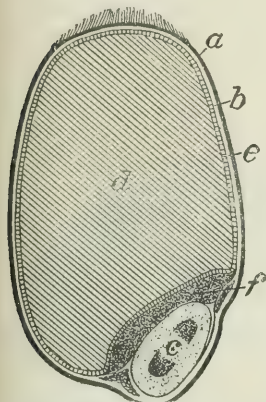


FIG. 1.—Diagrammatic section of grain of wheat: a, skin and testa; b, membrane; c, embryo; d, flour cells; e, cereal or aleurone layer, f, scutulum.

Structure.—"The wheat grain (Figs. 1, 2) is a small oval seed, which can be easily threshed from the stalk on which it grows. Its five outer layers are known as bran. Of these the three outermost form what is called the skin of the grain, and constitute three per cent. by weight of the entire seed. The two remaining layers of the bran form the envelope of the seed proper. The outer one is known as the 'testa' and contains the greater part of the coloring matter of the bran. Inside it lies a thin layer or membrane. These two together form one per cent. by weight of the entire grain. The layer next to the bran is called the cereal or aleurone layer. Its weight is about eight per cent. of that of the entire grain, making the total weight of the bran and aleurone layer together about thirteen per cent. Within lie the starch containing or flour cells which, with the aleurone, constitute the endosperm. The starchy portion comprises the larger portion of the grain, and consists of irregularly shaped cells containing the gluten forming proteids and the starch granules. At the lower end of the grain, almost surrounded by the endosperm, lies the germ or embryo. A portion of the embryo is called the scutulum. When the grain has thoroughly ripened and is surrounded by favorable conditions this embryo will develop into a new plant. As it begins to grow it will feed upon the starch and other substances in the endosperm." (Helen W. Atwater in *Farmers' Bulletin* 380, p. 8.)

Grinding or milling bran.—After threshing, and

before reaching the mill the wheat must be thoroughly cleaned and conditioned. In the process of converting the wheat into flour it is "reduced" or ground on five or six different rolls and sieves until the bran is eliminated. Any flour that is made is taken out and the remaining "middlings" are purified by air currents, separated into various sizes, and again reduced on smooth rolls until the whole is reduced and separated into flour or feed.

During each "reduction" the wheat passes through a corrugated roll, and over a wire screen or sieve to take out the flour and middlings.

The coarse middlings that are separated by appropriate sieves from the fine stock that has passed through the wire screen is considered the very best part, and comes from the central portion of the kernel. The fine middlings are simply a finer separation from the same stock. It is from these two grades of middlings and other sizes of the same type that patent flour is made. As we get down closer to the bran in the operation of milling, the flour is poorer in color and contains more gluten or protein, but of inferior quality as compared with the middlings flour.

BODY ENERGY, REPAIR, AND WASTE.

The purposes which bread or any other food serves when it is taken inside the body have sometimes been compared to the use of coal in a steam engine, but the comparison is far from perfect. Food is the fuel which furnishes the energy for all the body activities, as coal furnishes the heat to make the steam which drives the engine, but it does more than this. It also builds the body engine and keeps it in repair. Hence there are two main functions which food must perform, to build up and keep in order the tissues and fluids of which the human bodies are composed, and to furnish fuel or energy for their varied activities. Different as they look on the table, all food materials are found by the chemist to be made up of water and four different groups of substances which, in turn, play different parts in the building and running of the body machines, sometimes one or two and sometimes all of these constituents being present.

Water is found in varying quantities in almost all food

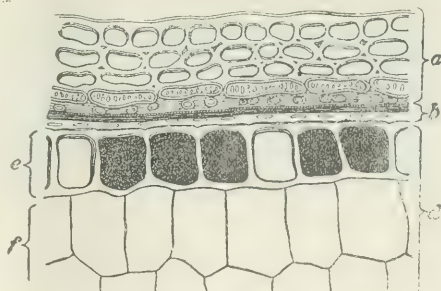


FIG. 2.—Cellular structure of a grain of wheat (After Watson and Macler).

stuffs, even in such dry looking ones as flours, it is necessary to the body, and is usually available in sufficient quantities in the ordinary diet. The food necessary for carrying on the vital processes it does not build tissues or yield energy, hence it is not commonly classed as a nutrient or nutritive ingredient of food.

THE TRUE NUTRIENTS.

The four groups of true nutrients are protein compounds, carbohydrates, fats, and mineral matters or ash. 1. The protein compounds include a great variety of mate-

rials, such as the albumin (white) of egg, the casein of milk curd, the lean of meat, and the aleuron and gluten of wheat and the similar bodies in other grains. They differ from other food ingredients mainly in that they contain nitrogen, and they are the only nutrients which can be used both to build tissue and to furnish energy in the body. 2. The carbohydrates and, 3. fats are fuel and not building foods. The carbohydrates include the different forms of starches, sugars, and cellulose or wood fibre, and make up a large part of wheat and other grains.

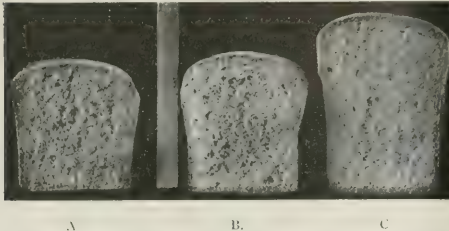


FIG. 4.—A, 307.5 grammes of bread from 227 grammes of graham flour; B, 302.5 grammes of bread from 227 grammes of entire wheat flour; C, 301.5 grammes of bread from 227 grammes of standard patent flour.

There are a great many kinds of fat in the different food materials; the more obvious forms are the fatty parts of meats, butter, fat, olive oil, etc., but some are also present in wheat and other grains. The fourth and last group of nutrients are the mineral matters or ash, which are found in very small quantities in food, but in great variety. During the period of body growth they supply the material out of which the bones and teeth are made, and at all times of life they perform many other important functions connected with body changes.

Grinding.—The comparatively small amount of digestible protein and available energy in the feces from the bread from the patent flour as compared with the same nutrients from the entire wheat and graham flour bread is doubtless due to the fact that the patent flour is much more finely ground. Results of a similar general character were obtained in an experiment at the Minnesota Experiment Station (*Bulletin* 36, p. 147) when pigs were fed whole and ground wheat. The ground wheat was ten per cent. more digestible than whole wheat. Other experiments with animals have shown that when foods are

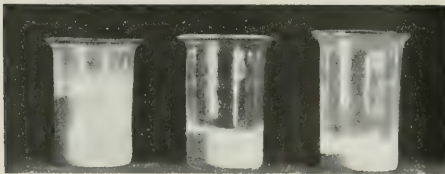


FIG. 4.—A, Feces from graham bread; B, feces from entire wheat bread; C, feces from standard patent bread.

ground the nutrients are from 3.3 to fourteen per cent. more digestible than unground foods. Fineness of division of the particles, evidently, has a material influence upon the digestibility of a food.

Raw Cereal Foods.—It is sometimes asserted that raw foods possess special virtues because some vital principle or life force in them has not been destroyed by cooking. Such views are not supported by experimental evidence nor does physiological chemistry offer data which would warrant that they are true. On the other hand, there is no reason to suppose that uncooked cereal foods are unwholesome if clean and free from bacteria, and they are commonly said to be especially useful in counteracting constipation on account of the large amount of indigestible crude fibre which they supply (*Bulletin* 210, p. 26).

Nutritional value of bran.—When compared with patent flour as a milling product, bran, while showing the presence of 0.56 per cent. less water (9.99 to 10.55), and 0.82 per cent. less carbohydrates (65.54 to 75.36), also shows an important increase of 2.03 per cent. in protein (14.02 to 11.99), 2.78 per cent. in fat (4.39 to 1.61), and over sixteen times as much in ash (6.06 to 0.37), composed chiefly of potassium phosphate, calcium and magnesium chloride, or phytinic acid compounds.

Iron in bran.—All the grains contain considerable iron, the greater part of which is lost in the ordinary milling processes. The iron thus lost is contained both in the germ and in the integument of the grain. The iron of the germ appears to play an important part in the sprouting of the seed and the nutrition of the young plant. It is thus readily available to the vegetable metabolism, and there is no reason to doubt that it is also readily digested and assimilated as food. The germ is rejected in the preparation of patent grades of flour for bread making, but is often utilized in the form of breakfast food (*Bulletin* 185, p. 51).

The digestibility and nutritive value of the iron compounds in the outer layers of the grains probably depends

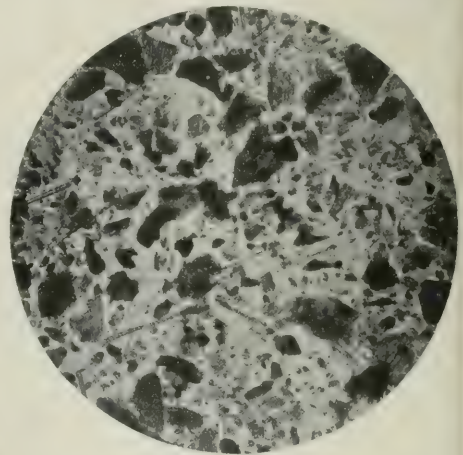


FIG. 5.—Photomicrograph showing undigested starch particles in the feces from entire wheat flour.

to a large extent upon the fineness of the grinding of this material. Feeding experiments made upon rats by Bunge (*Zeitschrift für physiologische Chemie*, xxv, p. 36, 1898) for the express purpose of testing the point indicate that the iron of bran is assimilated by the animal body and promotes the formation of hemoglobin.

The greater growth of the bran fed rats may have been due to the abundance of other elements, as phosphorus, calcium, and magnesium, as well as iron; but since the percentage as well as the absolute amount of hemoglobin was increased, it seems altogether probable that the iron of the bran was absorbed and utilized for blood formation. In his treatise on bread, Goodfellow (*The Dietetic Value of Bread*, New York, p. 178, 1892) states that "whole meal bread contains much more iron than white bread, and yields a greater proportion to the body."

Increase of iron in the diet without a corresponding increase of protein is readily accomplished by the use of vegetables, fruits, and the coarser mill products of the cereal grains (*Bulletin* 185, p. 80).

Laxative value of bran.—The laxative properties of bran have long been recognized in the very general use of bran mash to correct a tendency to constipation in farm animals, but the exact reason for this action has never been clearly understood.

Some recent experiments by Jordon, Hart, and Patten, of the New York State Experiment Station, indicate quite positively that there is a laxative action due to a soluble phosphorus compound known as *phytin*, which occurs in considerable amounts in the bran, for when cows are fed with bran from which this compound has been largely removed by washing they show a decided tendency to constipation beside other physiological disturbances.

The phosphorus compounds of the wheat kernel are found mainly in the outer coatings and germ from which are derived the bran and middlings. As the bran phosphorus is contained mostly in the compound *phytin*, it is self evident that this substance exists in much larger proportion in the whole wheat bread than in fine flour (*Bulletin* 305, p. 16).

The laxative action is more easily understood when it is remembered that the channel of excretion of phosphorus, calcium, and magnesium especially, and a part of the potassium when supplied in wheat bran is *by way of the gut*. When calcium or phosphorus is deficient in the food . . . the "margin of safety" provided in the skeletal tissues in the animal precludes against immediate disastrous results consequent on a sudden deficit in the intake of phosphorus or calcium.

The same authors noted "marked diuresis produced by the quantity of phytin supplied in the shape of the sulphide and chloride of potassium and magnesium" which they concluded was due to the high potash intake accompanying the whole bran ration, and responsible for the phenomena.

Bulk value of bran.—While no one who has fed animals their weekly or semiweekly bran mash would question the laxative properties thereof, we are thoroughly convinced that for the relief of habitual constipation it must be taken daily in relatively small doses, and when so taken one must depend on the *coarse, unground bran*, the bulk of which adds very materially to the amount of the feces and excites more vigorous and efficient peristalsis, thereby promoting a regular, daily evacuation of the bowel, which will only take place by close, habitual, prompt response to the earliest inclination, for if this is neglected, the contents of the rectum will rapidly become firm and compact, and more or less difficulty be experienced before the rectum can be emptied. To secure the good effects of habitual, daily taking of bran, one must give close attention to the habitual daily stool.

Feces.—A comparison of the feces from different flours is also interesting. The feces from a given amount of graham and entire wheat flour breads were more bulky, and weighed more than those from the same weight of standard flour bread.

A microscopical examination of the feces of the various digestion experiments (Snyder, United States Department of Agriculture, *Bulletin* 101, office of Experimental Stations, p. 34) was made with the following results: The feces from bread made from standard patent flour contained very small particles of disintegrated starch, which gave the color reaction with iodine. The feces from graham and entire wheat breads contained masses of material containing wheat starch grains in practically the same form as in the original graham and entire wheat flour breads.

Coarse, raw bran being composed chiefly of indigestible, nonabsorbable cellulose, takes up a large amount of water, swells, and adds very materially to the debris and bulk in the intestine, thereby exciting active peristalsis, which rapidly moves the fecal column downward and outward, thereby overcoming fecal stasis, avoiding putrefaction, and preventing resorption with its deadly toxemia.

When bran is ingested as a part of the daily regi-

men, the daily stool is made up of a soft, well formed, bulky column of feces with a notable absence of its former foul smelling effluvia. As time goes by the "liver spotted" skin clears up, dandruff and indigestion disappear, the anemia rapidly improves, the skin surface loses its dryness and becomes soft and of a healthier tint, and in some instances acne vulgaris has disappeared.

Taking bran.—Of the methods of administering bran there is no end. In our experience the best results have been obtained by the use of *coarse, unground, raw* bran, stirred in a glassful of cold water and quickly gulped down, or mixed with cooked cereal, and eaten with milk and cream. Many, however, prefer to take it stirred in soup, purée, or bisque, broth or gruel. Children like it mixed with jelly, jam, marmalade, honey, maple or other syrup, and spread on bread or toast. It matters not how taken so long as it is taken and that once or twice daily.

Bran taken in the form of graham bread, graham biscuits, graham pudding, graham soup, etc., if indulged in daily and in large quantities, is without doubt beneficial, and from a nutritional standpoint of value, but owing to its fineness in grinding it does not result in such bulky feces and loses much of its value in habitual constipation.

The dose of bran.—When taken as raw bran the average patient requires one to two heaping tablespoonfuls daily; others do better if that quantity is increased to three or four tablespoonfuls. In some instances the laxative effect is at first quite manifest, but will subside in a day or two, or the dose may be reduced. In others it may be necessary to continue the usual cascara or phenolphthalein laxative for a few days, until the habitual stool is established, when the drug must be discontinued.

Bran taken just before going to bed will induce a slight inclination very soon after rising, and should result in an action before the morning bath. If taken at breakfast, a natural though mild alarm will be felt about noon, and this warning should always be promptly obeyed or the good effect will be lost.

Among the several hundred patients whom we have taught the bran habit, there have been many who suffered with chronic diarrhea, alternating diarrhea and constipation, mucous colitis, enema constipation, constipation due to the use of castor oil, the saline waters, and other drugs whose secondary effect is an astringent one and result in relative constipation.

For several years it has been our habit while patients are convalescing after operation to feed them a daily quota of bran, and teach them the value of this beneficent habit.

After celiotomy, especially whenever pro'apsed viscera are present, it has been our custom to put on one of our specially designed corsets to support the viscera and prevent postoperative hernia, and in this way support the gastrointestinal tract in a more favorable position to accomplish its functions, viz., digestion, absorption, and excretion, each and all of which are carried on with much better satisfaction when the daily dose of bran lends its kindly aid to the habitual daily stool.

540 MADISON AVENUE.

BLOOD PRESSURE IN PULMONARY TUBERCULOSIS.*

Some Factors which Alter It.

By FRANCIS M. POTTENGER, A. M., M. D., LL. D.,
Monrovia, California.

The blood pressure of an individual depends upon the power of the heart, the resistance met by the blood stream in the peripheral vessels, the condition of the walls of the vessels, the total quantity of blood, and its distribution in the various vessels.

These various factors are in a state of equilibrium in healthy subjects and produce a certain resultant, the normal blood pressure. Blood pressure varies considerably in individuals in health, being influenced by many factors, such as age, habits of life, time of day, taking of food, climate, and meteorological conditions.

There is considerable personal error in determining blood pressure, so that it is somewhat difficult to compare the individual readings made by different observers. This error, however, should be the same in all readings taken by the same individual; but since the error in different observers is unequal, the result of different observers can be compared only in a relative way.

The following observations will illustrate the point. Statistics in blood pressure in tuberculous patients gathered from different observers show wide differences in the results as measured in millimetres of mercury, but agree in the one point that the blood pressure is lowered in this disease and that it becomes permanently lower as the disease advances. Strandgaard (1) took observations on 336 men and 286 women suffering from pulmonary tuberculosis with the following results according to stages:

I stage	125 mm. Hg.
II stage	121 mm. Hg.
III stage	118 mm. Hg.

Burckhardt (2) making his examination at Basel found:

I stage	107.6 mm. Hg.
II stage	104.6 mm. Hg.
III stage	100.3 mm. Hg.

Igersheim (3) found:

I stage	100.4 mm. Hg.
II stage	97.3 mm. Hg.
III stage	95.1 mm. Hg.

Pottenger (4) examined twenty normal persons and compared the result with 135 tuberculous patients, divided according to stages of the disease. The results were as follows for both the systolic and diastolic pressures:

	Sys.	Dias.
20 normal individuals	120	108 mm. Hg.
11 patients in I stage	106	78 mm. Hg.
21 patients in II stage	108	81 mm. Hg.
103 patients in III stage	103	75 mm. Hg.

Here we have average blood pressures ranging as follows:

	Sys.	Dias.
I stage from	100.4 to 125 mm. Hg.	
II stage from	97.3 to 121 mm. Hg.	
III stage from	95.4 to 118 mm. Hg.	

While there is a wide variation in the readings for the same stage of the disease as recorded by

the different observers just quoted, yet they all agree on two points: First, that there is a lowered pressure in pulmonary tuberculosis; second, that it is lower in advanced tuberculosis than in the early stage.

In tuberculosis there are many forces associated with the disease which affect the blood pressure. An analysis of these forces may help in better understanding the clinical manifestations of the disease.

It has been known for a long time that tuberculosis is accompanied by a low blood pressure, the reason generally assigned being the action of the toxins in producing vasodilator effects. Careful study and observation shows, however, that this is not the only factor acting to produce low pressure and only one of a number which are influencing the blood pressure in tuberculosis.

In the paper quoted, I drew the following conclusions regarding blood pressure in pulmonary tuberculosis.

1. A relative low blood pressure is found in tuberculosis, especially in advanced tuberculosis.
2. The factors which favor low pressure are the effect of the toxins upon the vasodilators, the weakness of the heart muscle, and general wasting.
3. The factors which have a tendency to maintain pressure are hypertrophy of the heart muscle and thickening of the systemic arteries.
4. Thickening of the systemic arteries occurs perhaps as a result of the action of the toxins on the vessel wall and therefore is found especially in patients who have had tuberculosis for some time.

Further experience confirms my former observations and enables me to add one more factor which I believe is of great importance in the production of low pressure. I refer to the altered function of the diaphragm and its accompanying splanchnic congestion and relative arterial anemia (5).

That displacement and lessened motion of the diaphragm produce the foregoing conditions has been pointed out by several observers, notably, Keith, Wenkebach, and Hess, during the past few years. That the motion of the diaphragm is altered in tuberculosis was shown by Williams by means of the fluoroscope, in 1897. The same thing was observed by Litten in observing the alteration of the sign which bears his name. Kronig also recognizes this fact in another way by showing that the motion of the lower border of the lung is diminished when pulmonary tuberculosis is present, even though the lesion is small. The same thing is indicated by the fact which I have emphasized in a recent paper (6), that the entire side of the chest lags even in the presence of slight apical involvement. That this altered function of the diaphragm produces low arterial tension is self evident, for through it the blood is allowed to accumulate in the veins, particularly the splanchnics owing to the fact that the suction action upon the veins, which is produced normally by the contraction of the diaphragm, is lessened. It is well known that the splanchnics are capable of holding nearly all the blood of the body. If the splanchnics contain more than their normal amount of blood it is further self evident that the arterial system must suffer a deficiency with a resultant low

*Read before the annual meeting of the American Therapeutic Society, Montreal, June 4, 1902.

tension. I formerly pointed out that this condition probably offers additional explanation of the oft observed fact that the tuberculosis patient is pale and looks anemic when blood counts show little, if any, anemia. The arteries, having a deficiency of blood, cause the patient to appear pale.

It might be of interest in this connection to discuss the causes of this altered function of the diaphragm. I have given this subject considerable attention in other papers, so I will simply mention my own theory here, viz., that it is a part of the general scheme of protection by lessened motion, such as has so long been recognized in abdominal lesions, and that its cause is the same as produces the spasm of the muscles of the neck and chest under the same conditions, a reflex stimulation, the impulse passing from the inflamed lung to the cord, there stimulating the adjacent cells of the segment and sending out stimuli to the diaphragm, through the motor fibres, which take their origin from the contiguous cells, causing them to assume a condition of tonic contraction or spasm.

Thus we see that two of the factors which cause low tension in tuberculosis, the toxins and the altered function of the diaphragm, are present very early in the disease. To be sure, they become more active as the disease progresses, for as it advances the toxins increase; and, as destruction of tissue goes on, the action of the diaphragm is interfered with more seriously and its position in the body becomes greatly altered. Added to these factors, we also have the loss of power on the part of the heart muscle and the weakness due to general wasting. I have seen under these conditions falls in blood pressure of from thirty to even fifty mm., Hg.

On the other hand, we have factors which are attempting to maintain pressure. Early in the disease we have an increased number of heart beats, and then an hypertrophy of the right ventricle of the heart occurs; and, as the disease progresses and the pressure in the lungs becomes greater, the muscular strength of the right ventricle increases, a condition which is maintained as long as the muscle is able to overcome the added pressure.

After the disease has existed for a period of time, and the toxins have continued to circulate in the blood, the arterial walls become irritated and thickened, the same as they do under the action of other toxins. In a study of 162 patients (4), as shown in the following table, the condition of the radials was noted, whether palpable or nonpalpable, the patients being divided into three classes: those ill less than one year; more than one, but less than two years; and more than two years.

Condition of radials.	Duration of the disease—		
	Less than one year.	One to two years.	More than two years.
Palpable	14	20	60
Nonpalpable	14	21	33

There were twenty-eight in class one, with fourteen palpable and fourteen nonpalpable; forty-one in class two, with twenty palpable and twenty-one nonpalpable; ninety-three in class three, with sixty palpable and thirty-three nonpalpable. Thus the interesting fact is brought out that two thirds of those who had had clinical symptoms for more than two years, had thickened arteries. I have frequently found this thickened condition of the arteries in

young people. One case, which I previously reported, in a child of eleven years, with clinical symptoms of two years' duration, showed markedly thickened arteries, and I have frequently found it in patients of eighteen and twenty years.

To summarize:

1. Low blood pressure in tuberculosis is favored by the action of the toxins, the disturbed action of the diaphragm, and particularly as the disease becomes advanced, by the weakness of the heart muscle and the general wasting.

2. High blood pressure is favored by the increase in the number of heart beats, the hypertrophy of the heart, and thickening of the arterial walls.

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BUBONIC PLAGUE

Seen at Close Range in the Far East; Some Random Notes.

BY CHARLES S. BRADDOCK, JR., M. D.,
New York,

Late Chief Medical Inspector, Royal Siamese Government.

Bubonic plague and Asiatic cholera are diseases which observed at close range are terrifying to both medical man and layman on account of the scenes connected with them, and the short shrift they give to those affected. Read the old accounts of the Black Death in the middle ages and the plague in London and you get an idea of one of these great scourges.

On the eve of my arrival at Yokohama, Japan, in 1902, plague broke out in that city and inside of twenty-four hours the Japanese government had segregated thousands of people in quarantine, had surrounded two blocks of dwellings with a fence of corrugated iron, sunk six inches in the ground to keep the rats from getting away, and had burned the entire area of buildings to the ground. So much for Japanese thoroughness.

In plague the pneumonic form is much more to be feared than the bubonic or septicemic form, but one is interchangeable with the other as was shown in my own experience. Plague broke out at Korat, 200 miles from Bangkok, and all the cases were of the bubonic type. It was here that I saw the only patient who lived long enough (six days), after being stricken, to form a typical bubo with pus, and he finally recovered. Of 200 stricken, 193 died, and seven recovered. Ten days later I received a despatch from Ban Phagi, a railroad junction 100 miles south of Korat, that plague had broken out there, it had been carried by rats from Korat, traveling in cars loaded with rice, which had been left on a siding there. Rats were seen to leave the cars and to stagger and die in the fields near by. In a few days there were twenty-two cases and twenty-two deaths in one large building, all of the

pneumonic type, with cough, fever, and spitting of blood, but no buboes at all. The reason the epidemic was not as bad in Siam as in China last winter, was owing to the people living in the open air, wherefore the personal contagion was not so great as in the closed rooms in China during the winter season. This brings me to the point that no plague case should be taken inside the four walls of a house, but should be treated in tents or small temporary pavilions that can be burned and replaced at small expense upon the death of the patient. I learned this from the Chinese in the island of Puket in the Indian Ocean, who had several acres of land fenced in and a great number of small pavilions with floors raised from the ground and attap roofs to accommodate one patient each. On the death of the patient the body could be cremated and the pavilion destroyed by fire at the same time. This also saves the lives of many nurses and doctors who would perish if attending pneumonic cases in a close room. The English have found it almost impossible to disinfect large stone buildings in Hong Kong, Singapore, Bombay, and Calcutta. Plague runs in these buildings with terrifying frequency after everything has been done that science can devise. I attribute this much to bed-bugs and fleas that are not destroyed by the disinfection and fumigation, and also to the fact that the soil itself becomes infected where the tropical sun does not get at it. I found that by taking off the attap roofs of the small houses in the villages and allowing the sunlight in, over one dry season, it did good work. Also I found that the disease was not transmitted nearly so much if every one was compelled to put on shoes and stockings. All of the soldiers used in quarantine duty, and who were in close contact with plague cases, were compelled to wear shoes and stockings, and not one contracted the disease. For myself, I always was careful not to stoop too closely over a pneumonic case so as to avoid the breath or coughing of the patient, and also kept my leggings saturated with coal oil to keep the fleas away. In the town of Petchaburi a great number of children died, and I found on investigation that the rats having died, the fleas took up their habitat on the dogs, and the children petting the dogs suffered in proportion.

In looking over the matter I found that in the great plague of London it was noticed and recorded that households having dogs suffered more than those not having any, so they had a faint inkling of the truth nearly 400 years ago.

At one time I had 500 men, women, and children in a detention camp guarded by soldiers. Twice a day the people were lined up, and I went down the line feeling the pulses of all. Here would be a little boy, an old woman, or young man in the prime of life who would show fever. A tremor would go through the line as I beckoned each one to step to the front, for every one knew it meant certain death. All of those picked out would be dead of plague inside of twenty-four hours or less. This ordeal went on for twenty-one days before all danger was over.

In conclusion, the maxim is, No Rats, No Plague.
165 BROADWAY.

CUTANEOUS SPOROTRICHOSIS.*

With Report of a Case.

By GEORGE B. FOSTER, JR., M. D.,

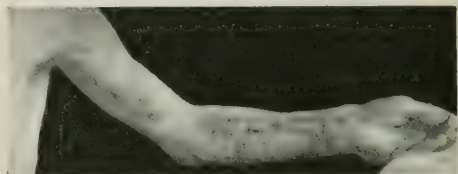
and WILLIAM H. THEARLE, M. D.,

Fort Leavenworth, Kan.,

First Lieutenants, Medical Corps, U. S. Army.

Sporotrichosis, until recently, was not recognized as a distinct nosological entity. Schenck, an American, made the first contribution to the subject of sporotrichal infection in man, in 1898. Hektoen and Perkins, in 1900, confirmed Schenck's observations and, on the ground of priority of observation, named the organism isolated from their case *Sporotrichum Schenckii*. Since that time over one hundred cases of sporotrichosis have been reported by various observers—approximately twenty of these cases occurring in America.

The frequent reports that have appeared in the American literature during the past year would indicate, not that instances of sporotrichosis are becoming commoner, but that incident to a gradual diffusion of our knowledge of the disease, many conditions formerly erroneously classified as tuberculous lymphangitis, tertiary syphilis, glanders, etc.,



Illustrating the lesions of cutaneous sporotrichosis in the Fort Leavenworth case. The characteristic nodules along the lymphatics and the ragged ulcers which follow necrosis of these nodules are shown on the upper arm and forearm, respectively.

are now being recognized as sporotrichal infections. Knowledge of the disease is not yet universal, however, and it may be well to outline its essential features, as established by those who have contributed to the literature on the subject.

The disease is widespread, numerous cases having been reported in France and elsewhere on the continent of Europe. In the United States, Kansas and North Dakota appear to be the principal foci of the disease; but cases have been reported from Illinois and Pennsylvania. Sporotrichosis occurs sporadically in man; but may assume endemic, or even epidemic proportions among animals. Infection most frequently occurs in young adult males, but age and sex appear to play no part as predisposing factors other than in their relation to exposing the individual to the sources of infection. Occupation plays an important part, the disease usually occurring among farmers, stablemen, and others who handle stock. The period of incubation, usually seven days, varies from six to twelve days.

The symptomatology of the reported cases is strikingly similar. The initial lesion, as a rule on the hand or forearm, follows traumatism which has broken the continuity of the skin. The original

*Published with the permission of the Surgeon General, U. S. Army. Read, by invitation, before the Leavenworth County Medical Society, Leavenworth, Kan., March 25, 1912.

lesion may heal before the sporotrichal lesion appears, or it may remain open. The primary sore develops as a nodule or pustule surrounded by a circumscribed area of induration, becomes reddened and boggy, and eventually breaks down, discharging thick, viscid pus. Sloughing follows, with the formation of an indolent ulcer which evidences no tendency to heal. Following the initial lesion, similar nodules appear along the lymphatics which drain the part and these, in turn, inflame, soften, and break down. Glandular involvement may be absent, local, or generalized. Constitutional disturbances are not usual, but occasional sensations of chilliness and mild febrile reactions occur in some cases. Recovery almost invariably follows the internal administration of one of the iodine salts, with vigorous antiseptic treatment of the local lesion. Death may occur in the debilitated or as a result of intercurrent infection. Extensive abscesses, the formation of fistulous sinuses, and erysipelas have been noted as complications and sequelæ.

A tentative clinical diagnosis of sporotrichosis may be confirmed by demonstrating the specific causative agent, the sporothrix, in smear preparations or cultures from the lesion. The organism is a fungus, consisting of branching mycelia with numerous highly refractive pyriform spores which are not unlike yeast cells in appearance. The fungus is demonstrated readily with the ordinary laboratory stains—Löffler's alkaline methylene blue, dilute fuchsin, gentian violet, etc., and is Gram positive. Growth occurs on all the ordinary culture media, but is most luxuriant on those containing sugar (glucose, one per cent.). It should be remembered that the growth of this organism does not become apparent for two or three days, that cultures may not be pronounced negative upon examination at the usual twenty-four hour interval after inoculation.

Sporotrichosis exhibits a marked tendency toward chronicity and it is imperative that the condition should be recognized early that the patient may not be subjected, unnecessarily, to weeks of discomfort and absence from his duties. Any lesion which is accompanied or followed by lymphatic involvement, resists ordinary surgical treatment, and tends toward chronicity should be thought of, tentatively at least, as due to sporotrichal infection. The readiness with which the diagnosis may be confirmed bacteriologically should make mandatory the examination of smears or cultures in every suspected case. If the practitioner does not have the time or facilities to make such examinations, he should submit smears for diagnosis to the nearest laboratory.

The following case, which was under observation at the Post Hospital, Fort Leavenworth, Kansas, for two months, is of interest as the first instance of sporotrichal infection, of which we are cognizant, that has occurred in the United States army.

CASE. G. A., private, Company I, Thirteenth U. S. Infantry, a young soldier enjoying robust general health, was admitted to the Post Hospital, Fort Leavenworth, Kansas, August 3, 1911, complaining of lesions on his left hand and forearm which he regarded as "boils." The family history and past medical history had no bearing on the case. Physical examination, except as it applied to the affected forearm, was negative. There were no subjective signs other than slight pain in the left forearm upon manipulation.

Present illness. Two weeks previous to admission a small "boil" developed on the anterior ulnar aspect of the left wrist, which was followed in two days by a similar lesion just above the middle of the forearm. The patient experienced some local discomfort, but otherwise felt as well as ever. The "boils" were opened and an antiseptic dressing was applied. The lesion did not heal, breaking down and sloughing continued, the forearm became brawny and discolored, and the patient was admitted to the hospital for observation. Sloughing had continued until ulcers remained at the sites of the original "boils." These ulcers were about 1.5 inch long and three fourths of an inch wide, were sharply defined, superficial, unhealthy, and indolent in appearance, and had irregular, raised, reddish blue edges. The floor of the ulcers showed exuberant granulations, which were bathed with viscid dirty gray pus. The ulcers were curetted and treated vigorously with tincture of iodine and hot antiseptic fomentations in turn, but they showed no tendency to heal. The infection spread along the lymphatics on the affected side of the arm and, one by one, nodules the size of a lima bean formed along this chain. The nodules became boggy, the overlying skin became livid, and as fluctuation occurred each lesion was incised and swabbed with tincture of iodine. Within three weeks the infection had spread up the arm to the axilla. The axillary lymph nodes became swollen and indurated, but did not go on to suppuration. At this point, the tentative diagnosis of sporotrichosis, which had been made clinically, was confirmed by isolating the sporothrix in pure culture from one of the lesions which had not broken down.

A culture of the organism isolated from this case was sent to the Bacteriological Laboratory, Army Medical School, Washington, D. C., where it was confirmed as the sporothrix of Schenck.

The patient was put on potassium iodide in increasing doses and the drug was pushed to the point of tolerance. Within a week the lesions began to heal, and after two weeks' treatment with the iodide the patient had nearly recovered. From this time on recovery was rapid and uneventful. At no time during the course of the disease did the patient manifest any systemic disturbance. His temperature remained normal. One leucocyte count showed a slight leucocytosis—13,000. Blood culture was negative as was the Wassermann test for syphilis.

ARTHRITIS DEFORMANS.*

Successful Treatment by an Autobacterin.

By H. M. GREENE, M. D.,
Portland, Oregon.

CASE. A man, aged forty-four years, began three years ago with an arthritis in the right wrist. The condition gradually extended, involving all the joints of the body. The condition was accompanied with continual pains in the joints and muscles and through the neck and chest, so that the patient was unable to obtain comfortable sleep during the night, or rest during the day. He had lost thirty-seven pounds in weight during the three years.

Three weeks ago I made an examination and found all the joints of the extremities greatly enlarged and partly ankylosed. The movement of the jaw was so limited that he was not able to put his false teeth into his mouth. His right wrist was almost completely ankylosed and there was marked deformity in the hand.

I drew five c. c. of blood from the median vein with a hypodermic syringe. The blood was placed in an incubator and allowed to remain for twenty-four hours. The serum was then poured off and plated by Professor E. F. Pernot, of the Portland

*Reported in detail to the Fortnightly Medical Club, March 19, 1912.

Bacteriological Laboratory, and placed in the incubator for another twenty-four hours. A number of colonies were visible. Examination showed two distinct organisms, a bacillus which was similar to the one described by Ballantyne, Wohlmann, and Bloxall, and a diplococcus, probably the same as Boynton and Payne had isolated from the synovial membranes in chronic arthritis.

A bacterin was prepared from these organisms and treatment was instituted on March 5th, with remarkable results. After two weeks, the man is able to sleep without disturbance during the night, and says his pain has entirely left him. The right wrist, which was apparently completely ankylosed, has markedly limbered up and the swelling has disappeared. The circumference has decreased three



Patient suffering from arthritis deformans after autobacterin treatment

fourths of an inch. He is able easily to insert his false teeth into his mouth. His appetite has returned, and he has gained one pound during the past week.

The patient keeps steadily improving. I saw him on April 10th and he was able to scratch the back of his head with ease; something, he told me, that he had not been able to do for a year. Other cases that I have under observation are also improving.

SCHOOL LUNCHES.*

Their Relative Physical Advantages in Elementary and Secondary Schools.

By IRA S. WILE, M. S., M. D.,
New York.

The general trend of present human progress is distinctly along the line of the conservation of field and forest, mine and stream, and at last attention is being adequately focused upon the conservation of childhood. With compulsory educational laws existent throughout the States, the responsibility of the latter for the safety and protection of childhood has been increased. To compel a child to go to school, by law, is to assume the responsibility for the care of the child during the period for which the child is within the custody of the educational authorities. Doctor Harrington has stated that "education must consider the student as the subject

of its teaching." To spend all the stress of thought upon curriculum, school buildings, school gardens, music, and art, is neglecting the most important phase of the educational problem, namely, the child who is to receive the education. In the broad conception of educational institutions, the curricula and the teachers are far less important than the problems of securing fresh air and good food for the boys and girls during the school age.

Medical inspection as related to the public school system makes note of many symptoms which are apparent among the children, but all too frequently fails to get down to the factors responsible for them. Preventive medicine demands a knowledge of causes in order to assure efficient prophylaxis. The intellectual development of children and their physical development are interdependent and do not represent isolated phases of child nature. A sound body and a sound mind are closely interrelated and are not mutually exclusive. It is in the interest of the educational system to develop the students in those phases of life to which the home gives inadequate attention. If, as a result, the school often seems to overlap the functions of the home, it is in the best interests of both the home and the school.

No one would deny that in any system of education the point of view should be such as to secure the greatest good to the greatest number of children. Taking New York city, for example, in the year 1910, there were in the elementary schools 693,246 children, while there were in the secondary schools only 50,902, of which number thirty-one per cent. failed to finish their course. It is striking to note that in the elementary schools only 31,341 children graduated, while in the sixth grade there were 68,514. In the special classes among the elementary school children there were 1,484 defectives, 432 cripples, 215 tuberculous, and sixty-two anemic children. It is all well and good to provide adequate attention for those abnormal children and to supply them with food and fresh air, as well as the mental pabulum, but it seems a much more rational procedure to give the same opportunity for the preservation of health to the normal school children instead of placing a premium upon ill health.

In the entire school system of New York city only 3.42 per cent. were over sixteen years of age, but there were 175,000 children over twelve years of age in the fourth grade, and above, 41,000 of them being in the eighth grade. The relation between mentality and good health has been well established. Porter, from St. Louis, has shown that well developed children take a higher rank than less developed children of the same age. The purpose of education is to fit children for life; and the knowledge that they may acquire and the use that they may make of it are equally dependent upon the health of the child during the course of education.

Puberty is a period of general acceleration of growth. There is an increase of height, of weight, of strength; there is a modification of the nervous system with the development of the emotional side of the child's nature, and a susceptibility to impressions such as occurs at no other period of life. In addition to this, puberty forms the period of the development of the sexual characteristics which bring to bear upon educational problems all the variations

*Read before the American Academy of Medicine at Lehigh University, Bethlehem, Pa., April 4, 1912.

that may come from the dominance of sexual emotions and the manifestations of sexual development. Physical education must embrace more than a question of muscles; it involves brains, sex life, and general stability. It is not a question as to whether a muscle is hard, or soft, or short or long, or thin or broad, but it is a question as to the general physical efficiency of the child, and this involves its mental as well as the ordinarily termed physical attributes. The opportunity to affect the pubertal development of the children is given only during the prepubertal period, and this represents the period of greatest activity of the schools, for the average age of graduation from the elementary schools of New York city is fifteen years.

Superintendent Maxwell, in his twelfth report, states: "Provision should be made in all schools for supplying food at cost price to the pupils in the middle of the day." This in a way is an acknowledgment from the head of the school system that there are many children for whom food is not available at home during the very period for which provision is made in the work of the day for them to go home for food. Educators well appreciate the necessity of full stomachs as a prerequisite to securing full minds. Nourishment supplemental to that of the home is now being supplied to cripples, anemics, and subnormal children for curative purposes. It is far wiser to extend the institution of making a food supply available in the elementary schools for the purpose of preventing the physical, mental, and often moral breakdown of the children during the period of elementary school life. Adequate and well selected nourishment is essential to the well being of children. The effect of food, as well as fresh air, may be readily understood from the experience of the anemic class of Public School 21, New York city, where during ten weeks the average gain in weight was three and a half pounds. In Boston eighteen pupils gained on the average four and a half pounds in three months with supplemental nourishment in a fresh air class, while their total absences for a period of three months were reduced from 583 to thirty-nine.

In every community there are many poorly fed children whose malnutrition is evidenced in part as anemia or in enlarged glands or in susceptibility to contagious diseases. For children of this character supplementing the home feeding is exceedingly desirable. There is no intent to suggest that free lunches shall be provided for public school children, as this would merely serve to relieve the family from the responsibility of feeding the children. Available lunches, however, are a boon to the family and a necessity in order to supply adequate food for the many children who cannot secure it at home. The responsibility of the family is not lessened, inasmuch as the available lunch is not given gratuitously, but is sold for a small sum, and the responsibility of the parents is heightened by impressing upon them the necessity of having their children take advantage of the lunch available at the school.

Physical training at the present time takes cognizance of the general development of the children, and even goes so far as to give marks for posture, chinning, and exercises of various kinds. Motor

training, however, is not merely muscular, but has nerve stimuli for whose prompt action good nutrition is essential. It is well known that in the course of training of athletes neuromuscular planes are developed through superalimentation. Endurance is not independent of food, and the physical training of children of the elementary schools requires for the successful development of the children an abundant, varied, and sufficient food supply.

Much attention has lately been given to the question of proper dentition. It is a striking thought that the permanent teeth of children are practically developed during the period of elementary school life. It might well be said, proper food means proper teeth. As has been suggested: "If children could be sent to a chewing school as they are now sent to a kindergarten, there would be a marked improvement in the race."

Dentition may be delayed or impaired by inadequate nourishment. The lack of lime salts in the daily dietary in the home is a large factor in early decay. The value of toothbrush classes for children whose permanent teeth have not yet erupted arises from the congestion produced in the gums, which adds to the general nourishment of the teeth in process of development. Good teeth depend upon adequate nutrition, and certainly adequate nutrition is dependent upon the teeth. Malnutrition is a large factor in the production of tuberculosis, adenitis, mental defects, anemia, defects in vision, protracted convalescence from diseases, and impaired resistance to the infectious diseases. The economic and educational value of nutrition may be appreciated from the fact that children with defective teeth take eight and a half years to go through eight grades of school, while children with enlarged glands require 9.2 years to go through the same grades. It hardly seems necessary to comment upon the rate of illness as it occurs among children in the primary schools and the secondary schools. A large factor in the retardation of children in their progress through the elementary schools, is the absences due to ill health, and a large part of this ill health is due to malnutrition of the child.

I recognize the fact that the home environment cannot be wholly remedied as far as sanitation, ventilation, facilities for sleeping and rest are concerned, but supplemental feeding will strengthen the home so as to lessen the dangers from the other unhygienic conditions. The school luncheon may supply foods yielding nutrients deemed necessary for growing children, but which are not contained in the home dietaries. With the careful adjustment of the feeding conditions not alone does physical growth ensue, but mental development must follow. Halleck has epigrammatically stated the problem by remarking that if a child has a skim milk diet, he will have skim milk thoughts.

Physical education must take account of factors that are related to physical development, and if one recognizes the wisdom of feeding the anemic, the tuberculous, and the crippled is it not equally desirable to feed the brothers of these same children to lessen the likelihood of their physical deterioration?

The principal of one of our large anemic classes

has called attention to the great mental improvement of the children in that class, in addition to their physical development. He notes that the children are better able to work in the late morning hours and in the afternoon than when they came to school. Miss Farrell, who has had charge of the ungraded classes, attests the advantages accruing to mental defectives who are returned to their grades after proper feeding. Superintendent Maxwell, in his tenth report, states that sixty per cent. of the defectives suffer from malnutrition. As an economic measure of reducing the number of special classes, it is much cheaper to supply school luncheons than to provide separate buildings and special teachers and in part disorganize the work of the school. Lord Dufferin has remarked that "our mental functions, our memories, our attention, our power of continuous application are even more dependent for vigor and vitality on the general condition of our health than is the play of our muscles." It becomes imperative to supply the foods essential for improving the general vitality of our school children in order that the educational system may be made most effective in giving the education for which they are established.

Underfed children are more vulnerable to disease, more susceptible to protracted colds and bronchitis and tonsillitis; are more likely to suffer from infectious diseases which occasion prolonged absences from the school and frequently lessen the efficiency of the school system. Weak musculature, sluggish circulation, chorea, and functional disorders of all kinds are far more common among the underfed than among any other type of children. The recognized underlying factor in chorea is a neurotic constitution, anemia, and some severe disturbance of nutrition. The New York Committee on the Physical Welfare of School Children, found 26.2 per cent. of chorea in children suffering from malnutrition as opposed to 3.6 per cent. for the 1,400 children studied. This same committee found that malnutrition occurred to the extent of 10.4 per cent among 1,400 children in October, and 12.9 per cent. in April among 900 children reexamined. This shows the deterioration of children during the course of a school year due to inadequate home feeding.

School luncheons in secondary schools really exist as a matter of convenience, and can in no way be regarded as part of the health question. A lunch room is provided for the elect of school children who come from homes better provided with the good things in life, and from families whose standard of living and income is such as to permit the continuance of the children at the school for a longer period of time.

At the present time we hear much regarding ventilation in the public schools, and there is a general movement to secure a lower temperature in the school rooms. Among well fed children it is easier to secure the reduction of temperature. It is practically an impossibility to place children in sedentary postures, in open air classes, without supplying a larger amount of food in order to supply the requisite amount of bodily heat that is essential to offset the climatic temperature. No open air classes at present exist without supplemental feeding. School lunches insure better digestion of food and

less bolting. There is no hustle, no fear of lateness, or running to school with articles of food to be eaten on the way. It is a practical measure for eliminating the unwholesome diets which are all too frequently secured from the pushcarts by those who are unable to receive a lunch at home.

Even the question of flat foot is not always a question of muscle, as much as it is a question of relaxation from undernourishment. It has been estimated that forty per cent. of our children in high schools suffer from flat foot and it is fair to assume that a still larger proportion of this difficulty is to be found among the children of the elementary schools who are twelve times as numerous.

The purpose of the school lunch is not to satisfy acute hunger, but to serve in part to relieve the chronic underfeeding of school children. It is rather difficult to secure figures showing the amount of undernourishment that there is among children in the elementary schools, but it is fair to take the statistics gathered by various observers. For example: Gershel has studied Jewish children, which figures are germane to New York city, inasmuch as there are over 650,000 Jews in New York. He shows that the dependent Jewish boys grow 14.86 inches from their fifth to their fifteenth year, while Bowditch shows that the Boston boys grow during the same period 20.8 inches, while according to Porter, St. Louis boys grow 18.1 inches and the English Anthropological Committee find twenty-one inches to represent the boy's growth during this period of life. At five years of age the average Jewish dependent boy is 1.6 inch shorter than Boas's average: At ten and a half years he is 1.68 inch behind; at eleven and a half years 3.40 inches; at fourteen and a half years 5.58 inches, and at fifteen and a half 7.9 inches behind the average for boys of the same age, according to Boas.

Gershel accounts for this by stating that during "the important age of puberty he had undergone many sufferings and privations at an age when freedom and proper nourishment are absolute essentials." The increase of weight is an excellent index of health as a general rule. It has long been known that boys of the favored classes are heavier than boys of the same age coming from the industrial classes. Imperfect nutrition may retard growth; and weight in itself is not a full index of good health. Burk has published the study of 68,000 children from Boston, St. Louis, and Milwaukee, whose average increase of weight was five pounds a year to the twelfth year. At twelve and a half it was 6.2 pounds, while Gershel's Jewish dependents increased 4.87 pounds; at thirteen and one half years was 7.9, Gershel's 4.39; at fourteen and a half years 10.4 pounds, Gershel's 4.46 and at fifteen and a half years 12.2 pounds, Gershel's 7.34. The retardation of weight for the dependent boys is especially noticeable from the tenth to the fourteenth year. The general gain in weight that may be brought about by a school lunch has been shown by the experience of the New York School Lunch Committee. In three months there was an average gain of ten and one half ounces for those children adjudged to be suffering from malnutrition who took the school lunch as opposed to three and two fifths ounces for the same period of time among the chil-

dren also adjudged to be suffering from malnutrition, but who failed to take advantage of the lunches at the school. The degree and underweight of the children adjudged to be suffering from malnutrition may be appreciated by the fact that out of 262 children only forty-four were at, or above the normal weight for their age.

The economic status of high school students according to the United States Bureau of Education, shows that only sixteen per cent. of the children in the secondary schools come from families with an income below \$750 per annum. This was based upon the reports from 1,473 schools which investigated the first twenty-five students in their freshman classes. The social status in our elementary schools reveals a far different economic standard.

At the present time elementary lunches exist in almost all civilized countries with the exception of the United States. In England, Denmark, Sweden, France, and Italy, the school lunches are regarded as educational measures. The educational advantages arise from the general improvement in the physical condition of the children taking the lunches. Of 2,051 children examined in two of our New York schools, 283 or 13.3 per cent. were said to be suffering from malnutrition. We found also that ten per cent. of the mothers of the children worked outside the home and consequently were not home at noon to offer food to their children. From an analysis of the dietaries used in the home for the children seventy-one per cent. of the families under observation were regarded as supplying insufficient nourishment for their children; sixty-four per cent. of the malnutrition cases came from families with an income below \$16 a week. The New York Committee on the Welfare of School Children found that forty-one per cent. of malnutrition of children arose in the children from families with incomes of less than \$16 a week. Seventy-three per cent. of the children taking luncheons came from families with incomes under \$16 a week. During 1909 and 1910, 252,254 children received thorough physical examinations. Malnutrition was found in 8,054: chorea in 821; tuberculous nodes in 997; pulmonary diseases in 1,964; orthopedic defects in 1,728; defective mentality in 691, a total of 14,255. Of defects of the teeth there were 135,186. Taking this proportion of defects found in only one third of the children of the elementary schools, and applying the same ratio to the entire number of children in the elementary schools there would be 42,765 children in elementary schools with these few physical defects exclusive of the dental disturbances. This represents almost as many children as there were in all the secondary schools of the city.

To promote physical growth and mental development are but two sides of the same problem, to accomplish the greatest good to the greatest number the most stress must be paid on the growth and development of the children during the prepubertal period or the years given to life and work in the elementary schools. As a factor in medical education the dietetic side of the child's life demands attention. For this reason an available school lunch is more essential in the elementary schools than in the secondary schools.

SALVARSAN THERAPY.

Present Status in Germany, with Report of Fifty Cases.

By HENRY H. MORTON, M. D.,
New York.

Professor, Genitourinary Diseases, Long Island College Hospital,
Genitourinary Surgeon, Long Island College Hospital, Kings
County Hospital, and Polhemus Memorial Clinic.

Before preparing the following article, the writer wished to acquaint himself by personal observation with the present status of salvarsan therapy in Germany, and for this purpose he spent some time in Berlin during the summer of 1911.

For much of the material contained in the following paper he begs to express his indebtedness to Surgeon Major Curt Roscher, of Berlin, and for practical demonstration and the opportunity of seeing the works in the Charité, to Doctor Goldbach, assistant to Professor Lesser.

The cases appended were treated in the Long Island College Hospital by the writer, and the records were made by Dr. J. Sturdivant Read.

In the last five years the knowledge of syphilis has made greater progress than during the preceding 400 years, during which the disease has been known and studied. In this short period the cause of the disease, *Spirochæta pallida*, has been discovered, cultivated, and inoculated; the Wassermann reaction has made diagnosis possible in its latent state, and with salvarsan or "606," now just one year old, we have a second remedy in our hands which is equal, and in some cases superior to mercury in destroying the organism upon which the disease depends.

Ehrlich's hope of being able to destroy at one blow with an injection of salvarsan all of the spirochetes, has not been realized, at least so far as the human being is concerned. In animals artificially inoculated with syphilis, it is possible to destroy all of the disease excitant with one dose of salvarsan thus accomplishing the sterilisation magna hoped for by Ehrlich, but in the human being a dose sufficiently large in proportion to the body weight to accomplish this cannot be given without causing poisoning. After seeing the local lesions of syphilis on the mucous membrane or skin disappear with almost magical rapidity, the question arises, Can we cure syphilis with salvarsan alone?

After a year's trial and experimentation with the drug, the opinion is that syphilis in general cannot be cured with salvarsan, but that in addition we must use mercury.

An exception to the general statement exists in the case of primary syphilis. Attempts to abort syphilis by simple excision of the chancre have always failed, but with excision of the chancre and the use of salvarsan followed by mercury for a short time, it is possible to obtain a negative Wassermann reaction which remains permanent—that is a cure.

Formerly, the invariable rule was to await the appearance of secondaries before beginning mercurial treatment, for it was found that severe relapses were more apt to follow when treatment was begun prematurely. Since the introduction of sal-

No.	Age.	Occupation	Date of Stage, chancre.	Symptoms.	Precious treatment.	Wassermann reaction.	Date.	Amount salvarsan.	Method.
1	42	Laborer	3d 1906, Jan.	Pangedemic ulcers of lip and nose	Hg. in all forms, K. I. to limit	+++ Jan. 3 +++ Jan. 13	Jan. 5 Jan. 18 Feb. 27	4 d gm. 6 d gm. 6 d gm.	1 secut. 2 secut. 1
2	27	Laborer	2d 1908, June	Ulcers nose, arm, and legs	Hg. and K. I. many months with temporary improvement	++ Mar. 4	Jan. 5	6 d gm.	5 secut.
3	25	Laborer	2d 1910, Nov.	Macular rash, typical glands	None	None	Feb. 2 Jan. 19	6 d gm. 6 d gm.	1 5 secut.
4	17	Sailor	2d 1910, Nov.	Macular rash, typical glands	None	+	Jan. 21	6 d gm.	1
5	24	Laborer	2d 1911, Sept.	Large macular patches, chest arm, and legs	Hg. pills for three months	+	Jan. 24	6 d gm.	1
6	35	Business	2d 1910, April		Hg. injections, Hg. inunctions	++ Dec. 1910 ++ Dec. 1910 ++ Feb. 1911	Jan. 16 Feb. 13	6 d gm. 6 d gm.	5 secut. 1
7	36	Laborer	2d 1910, Oct.	Lesions mucous membrane and chancre	Hg. pills for three weeks	++ Jan. 24 --- Mar. 1	Feb. 23 Mar. 6	6 d gm. 6 d gm.	5 secut. 1
8	32	Fireman	2d 1910, Feb.	Large ulcer on leg	Hg. injections to salivation in March, 1910, no treatment since. Hg. injections	++ Jan. 20	Jan. 24	6 d gm.	5 secut.
9	26	Laborer	2d 1910, Oct. according to history	Chancre		--- Jan. 22	Jan. 27	6 d gm.	1
10	23	Laborer	2d 1910, June	Condylomata	Hg. pills for three months	++ Jan. 26	Jan. 28	6 d gm.	1
11	42	Business	3d 1898	Pustular syphilides back of neck and head	Hg. and K. I. in large amounts during last thirteen years with temporary improvement	++ Feb. 9	Feb. 17	6 d gm.	1
12	14	Girl	Hereditary	Interstitial keratitis		+ Feb. 17 + April 10	Feb. 20	6 d gm.	5 secut.
13	22	Barber	3d 1900, Jan.	Tongue fissured stiff, tender corners of lips same condition. Moist papules on chin and scalp	Hg. injections about 200, K. I. to tolerance many times	+ Feb. 9 --- Nov. 15	Feb. 13	6 d gm.	1
14	31	Laborer	2d 1911, Jan.	Chancre, mucous lesions, anoma	None	+++ Mar. 28 --- June 10	Apr. 3	6 d gm.	1
15	37	Sailor	2d 1910, July	Mucous lesions. Condylomata. Severe headaches	Hg. inunctions, six months previous	None	Apr. 3	6 d gm.	1
16	35	Sailor	3d 1906, Feb.	Deep ulceration tonsils. Perforation soft palate. Uvula nearly eaten away at base. Severe headaches	Hg. pills for two weeks. Two years later Hg. injections (six)	+++ April 2 --- May 19	Apr. 3	6 d gm.	1
17	23	Sailor	2d 1911, Feb.	Chancre and mucous lesions	None	None	Apr. 17	6 d gm.	1
18	28	Sailor	2d 1911, April	Suspicious sore at corona. No spirochete found	None	None	May 5	6 d gm.	1
19	26	Laborer	3d 1909, April	Ulcers both legs which are spreading rapidly despite Hg. and K. I.	Hg. forty injections	++ April 29	Apr. 29	6 d gm.	1
20	41	Sailor	3d 1895	Necrosis nasal bones. Septum entirely destroyed. Perforating ulcer extending left to nostril to upper lip. Flesh of nose is red and thick	Liquid medicine for four months 18 years ago. Nothing since. Present trouble began three years ago. Given various local remedies	+++ May 8	May 10	6 d gm.	1
21	23	Sailor	Sore on penis for two weeks, one week later patch on scrotum.	No.	None	--- May 5	May 10	6 d gm.	1
22	31	Laborer	3d 1901, May	Deep ulcerations both tonsils. Not controlled by Hg. and K. I.	Hg. pills for two months. Nothing since till seven months ago	++ May 5 --- Dec. 3 Oct. 10	May 9	6 d gm.	1
23	25	Mate	2d 1911, Jan.	Chancre lip which is large and indolent Macular rash	None	None	May 1	6 d gm.	1
24	21	Engineer	2d 1911, June	Mucous lesions tonsils	Hg. and K. I. first 4 weeks	None	Dec. 6	6 d gm.	1
25	25	Engineer	3d 1906, Jan.	Headaches and insomnia, anemic	Hg. and K. I. for two years	None	Jan. 27, 1912	6 d gm.	1
26	24	Steward	2d 1911, July	Chancre spirochetes	None	None	Aug. 26	6 d gm.	1
27	27	Engineer	2d 1911, Aug.	Chancre, papular rash	None	None	Oct. 28	6 d gm.	1
28	22	Business	2d 1911, June	Chancre and macular rash	None	+ Aug. 15	Aug. 16	6 d gm.	1
29	30	Ship-captain	2d 1911, May	Chancre, macular rash	None	None	July 25	6 d gm.	1
30	42	Ship officer (Tables)	3d 1898, Aug.	Early tuberc symptoms	Hg. pills for six weeks	None	Aug. 9	6 d gm.	1
31	40	Business	3d 1908, Nov.	Deafness and discharge from ear	Hg. and K. I. for many years	+	July 11	4 d gm. intramusc. in iodine	1
32	25	Ship officer	2d 1911, July	Chancre	None	---	Oct. 4	6 d gm.	1
33	44	Business	3d 1892	Obstinate recurring ulcers lips and chin	Hg. and K. I. in various forms with temporary relief	+	July 24	6 d gm. intramusc. in neutral aqueous sol	1

No.	By effect after twelve hours.	Later.	Mercury given	Recur- rence.	Result and remarks.
1.	Pain—Temp. 101° F. Pain—Temp. 100° Temp. 102°	None None None	No No No	Yes Yes No	After third injection no recurrence for eight months, in better general condition than ever
2.	Pain—Temp. 101°	Same for one week	No	Yes	Rapid healing of ulcers in six days; recurrence in two weeks; after intravenous injection no recurrence in four months though drinking hard
3.	Temp. 101°; frontal headache Slight local pain	None None	No No	.... None in 4 mos.	Lost sight of Lost
4.	Cardiac palpitation; Temp. 101°	Precordial pain one week	No	....	Lost to sight after ten days, good general condition at this time
5.	Malaise Temp. 101°	Malaise for two days	No	....	Rash faded slowly; lost sight of after two months
6.	Much pain	None	Yes	....
7.	Dizzy 24 hours; Temp. 102° for 6 hours Severe pain; tumor one month None	None .....	.... No No	.... Yes No	March 1, deep ulcer in right tonsil No recurrence in six months
8.	Pain; excessive cardiac impulse for two hours	Pain over cardiac region for three days	No	....	Very little change; tumor at site of inspection lost
9.	None	None	No	....	Very little improvement in character of mixed sore on penis and diagnosis of lues not certain as Wassermann negative
10.	Temp. 102°; slight nausea	None	No	....	Condylomata disappeared in four days; lost
11.	Severe chill began half hour after injection; duration one hour; dizzy three days; Temp. 103° six hours after injection; normal after second day; slight dizziness for six days	.....	No No	....	Pustules disappeared in ten days; skin clean and soft for first time in twelve years; condition same at end of ten months; declines to have Wassermann
12.	Severe pain one week	.....	No	....	No improvement; in January, 1912, the persistent tumor noticed; all of salvarsan recovered and a complete sac of inflammatory tissue removed
13.	Temp. 101°; nausea	.....	No	No	In one week fissures of lip and tongue healed; can eat without pain; papules all healed in six weeks; no recurrence in one year
14.	None	.....	No	....	Considerable improvement in one week; no recurrence in three months
15.	None	.....	No	....	Disappeared
16.	Temp. 101° for six hours; no other symptoms	.....	No	....	All lesions healed by tenth day Disappeared
17.	Temp. 101°; no other symptoms	.....	No	....	Left hospital six weeks after salvarsan; all lesions healed; put on mixed treatment and has disappeared
18.	Nausea slight; Temp. 100° for twenty-four hours	.....	No No	No No	By latter; no recurrence in six months
19.	Slight nausea; Temp. 101° for six hours	.....	No	....	Left hospital third day; ulcers healing rapidly
20.	Temp. 101° for thirty-six hours; slight dizziness two days	.....	No	....	Doubtful case; disappeared
21.	Introduced into vein at right ankle	.....	....	....	Ulcer looking healthy on third day after salvarsan
22.	None	.....	None	....	Local lesion began healing in two days; headaches less severe; healing complete in fifteen days; left hospital with instruction for mercurial treatment; no subsequent history
23.	Temp. 101°; chill, sweat, cramps, pain along sternum at second and third ribs; two days later rash more distinct	.....	....	....	Leakage alongside vein; considerable swelling of leg
24.	Temp. 100°; slight nausea ten hours	.....	....	....
25.	Temp. 101°; much nausea three hours after injection for six hours	.....	....	....	Left hospital second day; could eat comfortably third day; no recurrence in six months; declines any further treatment
26.	Temp. 100°; nausea four hours; left hospital forty-eight hours after injection, feeling well; the fourth day after injection while at work, chill and severe nausea; returned to hospital; in bed two days; no treatment; left hospital feeling well; urine normal all the time	.....	....	....	Two weeks after, lesions three quarters healed; six weeks, healed; Wassermann test negative.
27.	None	.....	Yes	....	Mucous lesions much improved in forty-eight hours, disappeared
28.	Temp. 102°; nausea for six hours	.....	Yes	....	In one week headaches disappeared; anemia less
29.	Temp. 101°; slight cramps for thirty-six hours	.....	Hg. inunctions and injections	....	Edges of chancre healing in three days; chancre healed in ten days, looking well every way two months later; put on Hg
30.	Temp. 102°; chill	.....	Hg. inunctions and injections and K. I.	....
31.	None except slight local pain	.....	None	....	Left hospital fourth day; rash fading; disappeared
32.	None	.....	None	....	Reports from his physician to be in good condition
33.	Slight local tenderness	.....	None	....	Six months later; no lesions
					No appreciable change for three months; reports after six months, improvement every way; urination less tardy, bowels regular, numb feeling in feet has disappeared; general gain in health and weight and morals
					No change; ear condition probably due to other causes
					Left hospital third day
					Mild, glycosuria present, amount glucose not changed; lesions of face all healed; no recurrence in six months

No.	Age.	Occupation.	Stage, chancre.	Date of 1911, Feb.	Symptoms.	Previous treatment.	Wassermann reaction.	Date.	Amount salvarsan.	Remarks.
					Wassermann T.	Hg. injections	++ June, 1911		6 d.gm.	
15	29	Business	2d	1911, April	Macular rash, mucous patches, typical glands	None	++ Sept. 1911 + Dec. 1911 + + June, 1911 — Aug. 1911 + + May 15, '11	June 13	6 d.gm.	V
16	30	Police	2d	1911, Feb.	Macular rash, mucous patch tonsil	None		May 15		V
17	35	Ship officer	2d	1901, Feb.	Obstinate ulcer arm	Hg. and K. I. irregularly	+ Oct. 1911	Oct. 4		V
18	28	Carpenter	2d	1911, May	Chancre lip, Macular rash	None	+ Oct. 23, '11	July 3		V
19	49	Laborer	3d	1892, Oct. (18 years ago)	Osteoepic pains tibia	Irregular and inadequate treatment	— Jan. 30, '12	Oct. 24		V
10	57	Laborer	4d	1901, Dec.	Nasal bones and palate necrosis four years ago. Becoming deaf rapidly for last two months	"Druggist treatment"	None	Dec. 17		V
21	45	Cool	2d	1911, April	Chancre, macular rash. Mucous lesions throat	None		May 12	6 d.gm.	V
22	40	Sexton	2d	1 Feb.	Induration edge of glans penis; typical glands, mucous lesion tonsil	None	— Oct. 10 — May 16 — Oct. 10	May 18	6 d.gm.	V
23	28	Sailor	2d	1 March	Papular syphilides on entire body	None	None	May 15	6 d.gm.	V
24	25	Fireman	3d	1904	Deep ulceration palate tonsils, imperfect articulation	"A few bottles liquid medicine occasionally"	++ May 1	May 2	6 d.gm.	V
25	37	Housewife	3d	1892 (18 years ago)	Gumma of lip. Headaches	Thorough treatment inunctions and K. I. at two years' intervals. History of constant recurrences. Habits good. Otherwise healthy		June 5	6 d.gm.	V
26	31	Sailor		1911, May	Chancre lip	None	None	July 25	6 d.gm.	V
27	24	Driver		1911, April	Papulosquamous rash, typical glands	None	None	June 12	4 d.gm.	V
28	41	Fireman		1911, March	Macular rash, typical glands	None	++ June 11	Jan. 13	6 d.gm.	V
29	21	Engineer		1911, May	Macular rash, typical glands	None	None	June 15	6 d.gm.	V
30	33	Founder		1910, Nov.	Chancre. Spirochetes.	None	None	Dec. 16	6 d.gm.	V

+++ Strong P. ++ Med. P. + Faint P. — Negative.

V = intravenous.

varsan, it has been found that we can begin its use as soon as microscopical examination of the secretion from the primary lesion has disclosed the spirochete. We should, however, not depend upon the salvarsan alone, but follow it with energetic mercurial treatment and observe the progress of the case by repeated Wassermann reactions.

When the patient first presents himself for treatment in the secondary period, his first question is, How long will the treatment continue? Formerly, under mercury alone, we could answer that the duration of treatment was two and a half years, but now we can be less definite in our statement of time. We can only say that we believe and hope that the combination of salvarsan with mercury will shorten the duration of the disease more than if treated with mercury alone, but as salvarsan has only been used for a little more than one year, we cannot be more definite. On account of the combination of two antiseptic remedies, we hope that tabes and brain syphilis will be less apt to occur than with mercury alone. As to the dangers of salvarsan, it is possible to say that with proper application and healthy organs there is no danger to life. Blindness occurs very seldom and always clears up under mercury. Deafness is very unusual, but is sometimes permanent.

The conditions in which it is dangerous to use salvarsan are aneurysm and dilatation of the heart, in recent cases of myocarditis and valvular disease, when good compensation does not exist—for fear

of the high temperature following the injection causing a collapse. In brain syphilis, it must be used with extreme caution, for a swelling often occurs in the lesion following the use of the drug, causing dangerous cerebral pressure.

Salvarsan is especially indicated in the following conditions:

I. As an abortive treatment combined with excision of the chancre when possible and followed by an energetic course of mercurial treatment.

II. In cases where there is an idiosyncrasy against mercury and patients are too easily salivated.

III. Where mercury has had but little effect in healing lesions, or when relapses take place rapidly after using.

IV. In cases when after considerable mercurial treatment the Wassermann reaction still remains positive.

The effects of salvarsan may be studied under three heads:

I. As an antiparasitic, destroying the spirochete.

II. As affecting all the tissues of the body and increasing the nutrition.

III. For its effect on the nerves, causing an inflammation with consequent paralysis of the cerebral nerves, especially of the eyes and ears.

The theoretical grounds on which the combination of salvarsan and mercury is used are that salvarsan kills the spirochetes which are free in the tissues, and mercury is used to soften the deposits in which other spirochetes are encapsulated.

No.	By effect after twelve hours.	Later.	Mercury gluc.	Recurrence.	Result and remarks.
34.	Temp. 102°; nausea; moderate pain; very little absorption	.....	Yes	.....	No effect
35.	Temp. 101°; nausea six hours	.....	Yes	.....	All external lesions healed in four weeks; recurrence controlled by Hg.
36.	Temp. 102°; nausea	.....	Yes	.....	Headaches, controlled by Hg. and K. I.
37.	Temp. 100°; slight nausea	.....	No	.....	Ulcer edges healthy in forty eight hours; healed in ten days; lost sight of
38.	Slight chill for ten minutes, on hour after injection	.....	Yes	Slight injection Hg	Five months later syphilide, skin, and slight mucous lesion, tonsil
39.	None	.....	No	.....	Disappearance pains in one week; no return in five months
40.	Temp. 101°; nausea and vomiting for four hours	.....	Yes	.....	Hearing decidedly improved one week later; remained so for three weeks and then began to get worse; Hg.; final result end of three months; hearing improved one third
41.	Forty minutes afterwards severe chill of one hour's duration; Temp. 104° four hours later; felt entirely well next morning	.....	.....	.....	One week later all symptoms disappeared
42.	None	.....	.....	.....	One week all symptoms improved
43.	None	.....	None	.....	Disappeared third day, at which time syphilides fading
44.	Headache; nausea for six hours; Temp. 102° for twenty-four hours	.....	None	.....	In two weeks ulcerations nearly healed and articulations distinct; lost sight of
45.	Nausea and vomiting for six hours	.....	Hg.	.....	Gumma lip improving in two days; no recurrence in six months
46.	Slight nausea; Temp. 101° for two hours	.....	None	.....	Left hospital fourth day, chancre healing rapidly
47.	Congestion of face and dilatation of pupils after 4 dgm. injected; five minutes after stoppage of injection severe pains in abdomen and vomiting; (patient took heavy meal four hours previous;) three hours later felt entirely comfortable; Temp. 101°	.....	None	.....	Disappeared third day; rash accentuated for forty eight hours
48.	Dizzy half hour after injection; Temp. 100° three hours afterwards	.....	None	.....	Rash fading third day; disappeared
49.	Nausea half hour after injection; Temp. 101° three hours later	.....	None	.....	Rash fading third day; left hospital
50.	Slight nausea three hours after injection	.....	None	.....	Chancre softening in four days; left hospital in one week

in this way setting free in the circulation the few remaining organisms. Before a knowledge of the Wassermann test our treatment of syphilis was entirely empirical and based upon a routine plan, which, for want of more accurate diagnostic tests, was applied to nearly all patients alike, but at present we can really observe the course of the disease by the Wassermann reaction, and use salvarsan and mercury singly or together as the indications call for. The routine treatment of a case of syphilis as it should be followed in the light of our present day knowledge, might be roughly sketched out as follows:

In order to prevent deafness, Roscher advises beginning the treatment with mercury by using a couple of injections of sublimate or salicylate before giving salvarsan. Following the preliminary mercurial, the salvarsan should be administered by intravenous injection, and a few days later calomel injections once a week should be employed until six or eight injections have been given. Preference is given to calomel because of its activity. If in spite of the vigorous treatment the Wassermann reaction is still positive, a second intravenous injection of salvarsan should be used.

If the Wassermann reaction is negative, all treatment may be suspended for two to three months. If, after a couple of months, the Wassermann reaction becomes positive again, or secondary lesions appear, a repetition of the salvarsan and mercury, either alone or together, is called for, but the second course of treatment need not be as active as the

first. The Wassermann test should be repeated three or four months later and treatment instituted, or not, as the Wassermann reaction and symptoms indicate, during a period of two or three years.

In this way the treatment of syphilis, instead of being conducted as formerly upon a purely empirical and arbitrary scheme, is now based upon scientific observations, proving that by the effects of treatment, the poison upon which the disease depends is actually neutralized.

Potassium iodide has never been supposed to have an effect in destroying the virus of syphilis, but is used only to help the body rid itself of the newly formed round celled infiltration deposited in the tissues as a result of the irritation of the virus and to prevent arteriosclerosis. Its use is still called for in the late secondary and tertiary stages, and after several courses of mercury and salvarsan it is useful to give fifty grains a day for three or four weeks.

The effects of salvarsan on tabes and paresis have also been sufficiently studied to give a fair estimate of its value. In these conditions, it is logical to suppose that nothing can bring about a restitution after the nerve cells have been destroyed by the pressure of the newly formed connective tissue. Salvarsan will not cure such degenerations. Under its use however, the symptoms are improved and the lancinating pains and Romberg's symptoms are relieved for the time. The improvement is only temporary, and salvarsan must be again repeated. It is safer to begin with a small dose of 0.2 gramme, and if well borne use in larger doses. In such cases

mercury is of no use, but on the contrary decidedly harmful; potassium iodide, on the other hand, is without question helpful in conjunction with salvarsan.

MODE OF ADMINISTRATION.

As salvarsan has been known to cause deafness and disturbances of the nervous system, which always yield to mercury if given afterward, Roscher advises using a moderate quantity of mercury before the salvarsan is given, with the object of preventing these occurrences when the patient comes for treatment in the secondary period with lesions well developed.

The subcutaneous use of salvarsan is now entirely abandoned, for after injection it remains in the subcutaneous tissues without being absorbed and also causes, in nearly every case, a severe necrosis of the tissues with sloughing and loss of substance. In the Charité twenty subcutaneous injections were made with 25 per cent. of abscess formation. In the Long Island College Hospital we gave two patients salvarsan subcutaneously and in neither case was the dose absorbed. It had no influence on the lesions and remained for weeks as a hard infiltration under the skin.

The intramuscular injections are but rarely used and then only for some special reason, and never in acid solution, but always neutral. The disadvantages of the intramuscular method are the intense and persistent pains which they cause, and an infiltration that lasts a long time. These infiltrations appear like an abscess forming, but they never suppurate, probably on account of the bactericidal properties of salvarsan. It is also possible that the deposit of salvarsan may undergo changes in the tissues and cause intoxication.

Of the preparation of salvarsan suspended in sesame oil the writer can say nothing, as he has had no personal experience with it, but he has been informed by Doctor Goldbach that it had been tried in the Charité and abandoned because it did not seem to be effective; there was very little reaction, but relapses occurred frequently. As the matter stands to-day, the strong feeling among syphilographers is that the intravenous injection of salvarsan is the only method which deserves serious consideration.

The most convenient form of apparatus is the one devised by Assmy, and consists of two containers, one for salvarsan and the other for salt solution. After sterilization of the skin with green soap, alcohol, and ether or iodine, a towel tourniquet is placed around the upper arm. The cannula is then thrust into one of the swollen veins at the bend of the elbow. That the cannula is lying within the vein is demonstrated by the flow of blood through it. Salt solution is allowed to flow through the cannula first to make sure that the vein has not been wounded, and if no infiltration into the subcutaneous tissues occurs, the salt solution is turned off and the salvarsan is allowed to flow in; 150 c. c. of the solution should take from eight to ten minutes to enter the vein.

After the salvarsan container is emptied, from ten to twenty c. c. of salt solution is allowed to flow in to carry in the rest of the salvarsan, and the needle is withdrawn and the puncture dressed with gauze

and adhesive plaster. The patient is sent back to bed and kept on his back for forty-eight hours. After the lapse of this time, in nearly every case, he may be permitted to get up and walk about. The intravenous injection of salvarsan is absolutely out of the question upon an ambulatory patient on account of the serious risk to life which he would certainly run if permitted to walk home after an injection. The use of a hospital operating room where everything can be properly sterilized is also of the highest importance.

The intravenous injection is nearly always followed by a slight rise of temperature and sensation of a marked reaction, consisting of a chill, fever, headache, and vomiting. In two of the writer's cases the symptoms were so marked as to be alarming, but they subsided in a few hours and nothing further developed.

Wechselmann has noted that the use of freshly made salt solution and freshly distilled water was not followed by marked reaction, but that a reaction always followed the use of old salt solution, and he accounts for it by supposing that old solutions contain albuminous products as a result of the destruction by boiling of the organisms contained in the water. In consequence, he always filters and boils his salt solution shortly before using, and has had less trouble from severe reactions since adopting this practice. Since using distilled water the writer has had no trouble from severe reactions.

Investigations as to the elimination of salvarsan show that in four or five days it is eliminated from the blood, but that deposits of the drug are found in the glandular organs, particularly the liver, and its elimination is still going on months after the injection has been given.

32 SCHERMEHORN STREET, BROOKLYN.

A HISTORY OF SURGICAL HEMOSTASIS.

BY W. C. BORDEN, M. D.,
Washington, D. C.

Professor of Surgery, George Washington University; Surgeon in Chief, George Washington University Hospital.

(Concluded from page 377.)

The first half of the sixteenth century is of all periods the most important to medicine and surgery. Then appeared Paracelsus, Vesalius, and Paré. Though the work of each was foreshadowed by the lesser work and writings of their predecessors, yet it remained for them to be the true inaugurators of the medical reformation.

Paracelsus became a professor at Basel in 1527, and in his lecture room burned the works of Galen and Avicenna. He broke the long tyranny of Galen and his Arabian followers, and may be justly considered the Father of Modern Medicine.

The same service rendered to medicine by Paracelsus was rendered to anatomy by Vesalius, whose *De corporis humani fabrica*, which appeared at Basel in 1543, formed the foundation of the modern science of anatomy. Thus, after centuries of waiting, in the short interval between 1517 and 1590, the years of Paré's life, appeared the reformers of anatomy, of medicine, and of surgery.

Many of Paré's innovations in surgery were due to natural acuteness and independence of mind, influenced by environment, for, as a military surgeon often in the field, he had opportunity for observation and experiment. In fact, failure of the supply of oil in the army of Marshall Mont-Jan, with observation that gunshot wounds not treated by boiling oil did better than those so treated, led to his first surgical reform published in 1545 in his treatise *La méthode de traiter les playes, etc.* His ability and devotion to his work made him one of the greatest military surgeons. He was adored by the soldiers, and it was said of him that "his mere presence in a besieged town was enough to reanimate the garrison." Though adored by the army, and supported by the reigning kings, he was opposed by the faculty (surgeons of the long robe). When, in 1564, he published his discovery of the ligature, which he says substantially he was enabled to make through the special favor of the sacred Deity, he also defended its use by quotations from Galen and other ancients.

But notwithstanding Paré's eminence, the ligature made its way but slowly into favor. Indeed, Valsalva, 1666-1723, nearly two hundred years after Paré, is named as a pioneer in the use of ligation of bloodvessels instead of the hot iron to prevent hemorrhage during amputation. In 1712, Verduc advocated the use of viotril to check the bleeding in amputation of the breast.

Pieter A. Verduyn, of Amsterdam, near the end of the seventeenth century, in amputating, did not ligate the vessels, but treated the stump with styptics and covered it with an animal bladder upon which he placed, or pressed, a concave plate of iron or copper fastened to the posterior part of the thigh.

In England, Sharp, a surgeon to Guy's Hospital, in 1761, two centuries after Paré, published a work entitled *A Critical Enquiry into the Present State of Surgery*, in which he advocated ligation in preference to styptics or the cautery on the ground that "it was not as yet universally practised among surgeons residing in the more distant Counties" of England.

It may be asked why it took more than two centuries to bring into general use the best method of suppressing surgical hemorrhage. The answer to this is that the natural adherence to traditional methods, the slow dissemination of information at that time, the somewhat greater difficulty of ligation as against cauterization, and the frequent occurrence of secondary hemorrhage, were all factors in the slow acceptance of the ligature in surgery.

Even as late as the eighteenth century, on account of the limited number of printed books issued and their high cost, there was no ready means of general dissemination of knowledge. Printing by movable types was not invented until about 1450 and for several hundred years the presses were cumbersome, slow of operation, and comparatively few in number, and no periodicals were printed. Even as late as 1775, two centuries after Paré, there were but fifty printing houses in all the British colonies of America. Medical teaching for centuries after Paré was almost entirely disseminated by means of a few books, and by word of mouth and by written notes, and these latter were necessarily often im-

perfect and incomplete. Even the discovery of the circulation of the blood, which finally established for all time the basic reason for ligation was not announced by Harvey until 1628 one hundred years after Paré's thesis on the use of the ligature.

To the slow and imperfect dissemination of knowledge must be added the fact that most practitioners for centuries after Paré's time were either untaught or deficient in even the simplest operative procedures. Surgical operations, unlike the present day, were comparatively infrequent and were usually done only as measures of last resort. For unskilled men it was far more difficult to isolate and tie a bleeding vessel than to cauterize the surface of a wound with a hot iron, or apply styptics to the cut surface.

Then, too, although ligation appealed to the few who had the experience and the dexterity to find a bleeding vessel and ligate it, ligation itself was not an absolutely satisfactory procedure. On account of the suppuration which occurred in practically all wounds, made either accidentally or surgically, secondary hemorrhage was of frequent occurrence, and not until the factor of inflammation and suppuration was removed by *antiseptic and aseptic methods* was the final and one of the greatest factors in surgical hemostasis brought into use.

The tracing of the ligature up to its development as part of an antiseptic or aseptic procedure is of interest.

The neglected ligature of Avicenna was of "flaxen thread." Paré used a double thread "*bon fil qui soit en double*." Paré's double thread was passed around the artery by means of a curved needle. The artery was seized with forceps (pince à corbin and pince à patin) and the ligature tied upon a thin pledget of linen. He included the nerve in the ligature (mediate ligation), the danger involved not being known until the eighteenth century. From the time of Paré to that of Lord Lister no real advance in the ligature was made, although, as always, there were preliminary findings which later developed into real utilities.

In this connection it is worthy of note that to an American surgeon, Doctor Physic, of Philadelphia, is due the distinction of being the first to advocate the use of an animal ligature.

Doctor Physic's ligatures were made of chamois leather, cut into strips and rolled on a slab to make them round and hard. These ligatures had quite a vogue and were used in England by Sir Astley Cooper and probably others.

But from the time of Paré to Lister it was the common practice of the surgeon to hang a link of waxed thread, flax or silk, through his buttonhole, that ligatures might be handy during an operation.

During the years of supremacy of the thread, and before infection as a cause of secondary hemorrhage was known, endeavors were made to insure the permanency of the hemostasis. "Mediate ligation," or inclosing the artery with its surrounding tissues within the ligature, and "immediate ligation," or inclosure of the artery only, had each their advocates, but the former was finally abandoned as offering no additional safety over the latter, and this with many disadvantages.

In this connection may be cited the case of Lord

Nelson, the great British admiral, who suffered intensely for four months after the amputation of his arm from a nerve having been included with the artery in a mediate ligation.

The frequent occurrence of secondary hemorrhage in preaseptic days led to critical study of the technique of ligation and this resulted in advising the careful but firm tying of the artery so that both the internal and middle coat should be ruptured, the outer coat being left intact. The rupture and retraction of the interior coats of the vessel gave a greater surface for plastic exudate and the resulting adhesions extended further up the vessel than when its walls were simply approximated, thus giving a greater barrier against the softening effects of inflammation, and insuring less frequent occurrence of secondary hemorrhage.

Here improvement rested until the epoch making work of Lord Lister in establishing modern antiseptic and aseptic surgery. The facts of Lister's life and the tremendous importance of the results of his work are so recent and so well known that it is not necessary to detail them here. It is sufficient to say that, like Paré, he in his early work, met the bitter opposition of most of his confrères, and that, like Paré, his teachings established a new era in surgery.

The disadvantages and dangers of animal ligatures used under septic conditions had led to their disuse, and to Lister is due the honor of reintroducing them into surgical practice. Lister recommended that catgut be soaked in a one to 1,000 solution of chromic acid to which was added 200 parts of carbolic acid: thus, for the first time in surgery, making an animal ligature with the required elements of strength and asepticity.

Lister's chromic, carbolyzed catgut has been greatly improved, as have been all his methods, but only by perfecting the essentials of which he was the original expounder. Now we use catgut and other ligature material sterilized by heat or some germicide; notably, iodine.

Sterile ligatures in aseptic wounds, and infected wounds treated antiseptically, give to the modern surgeon the final hemostatic aid, i. e., *prevention of microorganismal interference with the processes of repair*.

Thanks to the development of Lister's theories we now know that occluding an artery without rupture of its inner coats, by means of a ligature which will be later absorbed, is all that is necessary to insure all possible hemostatic control; for natural process of repair, when uninterfered with by the invasion of pathogenic microorganisms, will firmly close the vessel and remove the ligature.

The methods of hemostasis other than the ligatures which are of historical interest, relative to direct application to bloodvessels, are heat, cold, torsion, and acupressure; relative to indirect compression of bloodvessels, is constriction of a whole limb or part by an encircling band or by a tourniquet; and, relative to direct application to wounds, are heat, cold, and styptics.

Styptics. The direct application of substances which cause contraction of bloodvessels is of great antiquity, as noted early in this paper. The first styptics were common substances such as ashes

(Antyllus), or salt (Hippocrates). Then artificial compounds were made and used. John Hunter terms "oil of turpentine the best, if not the only true styptic." Later such agents as perchloride of iron, tannic acid, alcohol, and many other astringents and irritants came into use, the last and most notable agent now employed locally being adrenalin in solution.

Cold, like heat, is probably one of the most ancient applications for arrest of hemorrhage, although no mention is made of it in existing writings until Celsus directs its use. Rhazes advised the application of snow for the same purpose.

Baron Larry, Napoleon's great surgeon, states that after the battle of Eylau, the mercury standing at about zero (Fahr.), ligatures were applied to the large bloodvessels only, in the operations generally, and that there was no trouble from hemorrhage, although the wounded, after having been cared for, were transported a great distance (*Memoirs*, vol. 11).

Heat. Hot applications were first doubtless made through hot water, burning fagots, hot stones, and later by boiling oil, and the cautery, which lasted for centuries, and was an iron instrument heated directly in the fire and known in France as *fer ardent*. The use of heat in this form still persists in the form of the galvanocautery and combined with crushing in the angiotribe.

Torsion is said to have been practised by Heliodorus (about A. D. 100), and was distinctly recognized by Galen, who proposed that the bleeding vessel be pierced with a needle and so twisted around. This twisting of the entire vessel, afterward termed "*free torsion*," was recognized by Aetius of Aegina, and Rhazes as a hemostatic measure of importance.

In 1829, Amussat, by experiments upon animals, devised "*limited torsion*," which method consists in fixing a vessel with one pair of forceps a short distance above the cut, and then with another pair of forceps twisting the free end until it is torn off. Although Amussat devised the method, Velpeau (1795-1868), whose name is familiar from the bandage devised by him, was the first to practise it on the human subject. It was tried with varying success by other surgeons, and its use aroused so much discussion and the subject was deemed of such importance that it was taken up by the Institute of France and referred to Baron Dupuytren. He reported against the method except for small arteries. Torsion then went out of use, to be revived again by Professor Syme. Its last notable advocate was Bryant, of England, whose textbook on surgery was much in use about 1880. In this he advocated its employment, even with the larger vessels, but the advent of Listerism rendered the ligature unquestionably the better method and torsion, as already recommended by Dupuytren, is now only used for the smaller vessels and only occasionally.

Acupressure, or compression of a vessel between a pin thrust beneath it through the tissues and an overlocking thread,—a hemostatic method of limited usefulness, but still occasionally employed—was first presented to surgery as a practical operation, in 1859, by Sir James Y. Simpson (1811-

1870), although Petit, inventor of the screw tourniquet a century before, had used acupressure as an experiment. Its inventor or rediscoverer, Simpson, is famous for being the first surgeon to use chloroform as an anesthetic and the first to use ether in labor, for which latter practice he brought down upon himself the denunciations of those religionists who believed that Divine command required women to endure the pains of parturition.

Tourniquets and indirect proximal compression of the vessels. A binder encircling the limb, as already stated, was first advocated in writings still existing, by Chrysippus and by Archigenes.

Fabriz von Hilden, of Byrne (William Fabriz), (1560-1634), introduced a form of tourniquet made by placing a piece of wood under a bandage encircling the limb. Von Hilden is generally considered the father of German surgery. He was a man of great acquirements and was the first learned German surgeon. He was distinguished for a classical education (quite rare for a surgeon of that day)—he even wrote Latin—for his knowledge of the ancient physicians, his rich experience, and skill in observation. He has the distinction of being the first to amputate the thigh, an operation which even Paré had not ventured. Yet he still employed a knife shaped cautery or hot knife to obviate hemorrhage (Grüdner), although he was acquainted with the ligature.

To Morel, a surgeon in the army of Louis XIV, is usually given the honor of inventing the tourniquet when he was serving at the siege of Besançon in the year 1674. Morel's invention, like that of Paré, was due to the exigencies of war, and was undoubtedly made without knowledge of Von Hilden's rude tourniquet or the binder of the ancients. In its original form, Morel's instrument, also known as the Spanish windlass or garrote, consisted of a thick compress, which was placed around the limb, and surrounded by a cord or small rope, under which were slipped two short sticks, by twisting which the cord was drawn very tight. Besançon, the place of the invention, is also celebrated as being the birth place not only of this achievement but of Victor Hugo; and, while Morel has the tourniquet, it is Emmerez, another surgeon of Louis XIV, to whom is given the distinction of performing another vascular achievement—that of the first transfusion of blood in man.

Morel's tourniquet was improved by Le Dran, by placing a pad immediately over the vessels, by using only one stick for twisting the cord, and by placing beneath this a piece of horn or leather to render the pressure on the skin less severe, and thus avoid risk of sloughing, which was sometimes caused by the Morel instrument.

But the greatest improvement was the invention of the screw tourniquet by another French surgeon, Jean Louis Petit (1674-1750); the *grand Petit* as he has been called to distinguish him from other less famous surgeons of the same name. Petit, like Paré and Morel, educated himself in practical surgery in the wars. His services extended over the whole field of surgery, including ophthalmology. He devised amputation *à deux temps*, and Werner maintains that he was the first observer to note the definitive *thrombus after ligation*, a matter of

moment in preaseptic days, as it was an additional barrier against secondary hemorrhage, while the tissues softened during inflammation and suppuration.

After Petit, many different forms of tourniquet were devised, all, however, on his principle. These instruments were of inestimable value in surgery and their use was deservedly continued until they largely gave place to the most modern form of the binder of Chrysippus and Archigenes, namely, constriction by an elastic band or tube of rubber, which method was brought authoritatively to the attention of surgeons by Esmarch (*Ueber künstliche Blutleere bei Operationen*) in 1873.

The invention of soft, vulcanized rubber by Charles Goodyear, of Massachusetts, in 1844, led to the manufacture of the many articles now made of that material and made possible the application and now general use in surgery of india rubber in the form of bands or tubes for encircling and constricting parts subjected to operation.

While Esmarch's bloodless method is now only occasionally practised in its entirety, its essential, i. e., proximal constriction of the part to be amputated or operated on, by means of a band or preferably by a tube of India rubber, is now a universally accepted part of a modern operative procedure, whenever temporary hemostasis prior to ligation is required.

The latest and most radical use of the elastic constrictor is that first proposed by Mombert, in 1908, whereby hemostasis below the waist is affected, and pelvic or other operations below the waist line carried on, or post partum hemorrhage checked by so tightly encircling the waist with turns of a rubber tube as completely to compress the abdominal aorta.

CONCLUSION.

We have now traced the history of surgical hemostasis to the perfected essentials in the operation of the present day, i. e., elastic compression, ligation, and asepsis, and the less important hemostatic measures, such as heat, cold, torsion, and acupressure.

In reviewing this history, we see that all the important surgical discoveries in hemostasis were preceded by suggestions or practices of a similar kind which, however, did not become of value until the flash of genius touched them. Also, we see that genius did not bring forth these facts until other conditions, such as opportunity, and more particularly the progress of invention and the advance of the sciences made their finding possible.

Opportunity gave to the acute and courageous mind of Paré the occasion to employ, and the high position authoritatively to recommend the ligature; known, but not used, by his predecessors.

The advance of anatomical knowledge after Vesalius and the physiological triumph of Harvey in discovering the circulation of the blood, completed the facts necessary firmly to establish the ligature in surgical practice.

The invention of rubber made possible Esmarch's advocacy of elastic constriction and its later wide application.

The researches of Pasteur led to the investigations of Lister and the establishment of antiseptic

and aseptic surgery and this, combined with the findings of the many workers in pathology and bacteriology, made possible the aseptic ligature and the clean wound, in which repair can proceed untroubled with the dangers of inflammation and suppuration, so completing our present day perfection of hemostatic control.

1801 CALIFORNIA STREET.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXV.—How do you treat gonorrheal "rheumatism"? (Closed August 15th.)

CXXVI.—How do you treat bronchial asthma? (Answers due not later than September 15th.)

CXXVII.—How do you treat pruritus vulvæ? (Answers due not later than October 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to Question CXXIV has been awarded to Dr. L. K. Hirschberg, of Baltimore, whose article appears below.

PRIZE QUESTION CXXIV.

THE TREATMENT OF STREPTOCOCCIC SORE THROAT.

By L. K. HIRSCHBERG, M. D.,
Baltimore.

An epidemic of streptococcus sore throat during the winter just past, swept through Boston, New York, Baltimore, Chicago, and other places. More than 10,000 persons were the victims in Chicago alone. Of 622 cases investigated, eighty-seven per cent. were caused by the use of milk from one dairy. In each city, the first cases started from a certain dairy, then extended by contagion. Mastitis in cows, with the particular streptococcus, prevailed in New York, Boston, Baltimore, and other cities.

Among the complications and sequelæ of streptococcus sore throat were observed local and general glandular enlargement, mastoiditis, otitis, parotiditis, nephritis, appendicitis, peritonitis, septicæmia, arthritis, cystitis, multiple abscesses, curious forms of sensory neuritis, and even pneumonia.

The management of these cases, some of which proved fatal in each city, had for its object the prevention and treatment of both the malady and the sequelæ. Defective pasteurizing plants must be repaired and watched in the large dairies, the farmers and milkers with sore throats or soiled hands must

be kept from the cows, and all cows with suspicious nipples isolated from the herd. Above all, during an epidemic, order all milk boiled.

Each patient should be quarantined as in cases of scarlatina—which it resembles with the rash absent—and preventive gargles and inoculations of streptococci vaccines, are advisable for the rest of the household.

When the disease has once developed, the internal administration of hexamethylenamine should be begun at once. We found the complications and sequelæ reduced in a remarkable and dramatic way, when this formaldehyde preparation was begun early.

Then ice packs or cold, alcohol cloths are placed around the neck and against the tonsils, while frequent alcohol water sponges are given, even in cases where an extensive rise in temperature was present. This has a tonic tendency to stir up the phagocytes and tissue antigens, also to keep sequelæ down.

Calomel, in half grain doses, proves to be the best eliminant. It is both a good purgative, and liberates the antiseptic mercury in the saliva and glands. Except calomel and the formaldehyde compound, other internal medicines are rarely helpful. Still there is no objection to the physician's using others. Acid sodium phosphate undoubtedly aids the action of hexamethylenamine, when nephritis or cystitis seems impending.

The complications and sequelæ seem to occur earlier and oftener, when sodium salicylate and the other coal tar drugs are given to relieve pain or lower the fever. Ice bags, mustard plasters, the Paquelin cautery, lead and laudanum water, as well as fly blisters alleviate local distress.

There are many available gargles, any of which is more or less an aid, but the movement necessary in using the gargle often dislodges clumps of vicious streptococci from the tonsil, and whips them into the general circulation, thus producing what it was hoped to avoid. Hence local applications of guaiacol or creosote, one per cent. carbolic acid, or compound tincture of benzoin are preferable. Cracked ice in abundance should be kept constantly in the mouth.

The alert attendant must watch the ears, joints, and peritoneum rigidly. At the slightest suspicion of trouble, increase the dose of hexamethylenamine from five grains every three hours, to ten grains every four hours. Drop three drops of a twenty per cent. carbolic acid in glycerin solution into the ear, if the trouble begins there.

If in the mastoid, have it opened at once by an aural surgeon, while, if the cervical or other glands suppurate, which rarely occurs if ice applications have been kept up, incise them with major surgical precautions.

In vain we opened two patients whose cases were diagnosed as appendicitis. At the operation it was discovered that a general diffuse septic peritonitis had set in. Since then abdominal ice packs, saline infusion, and neosalvarsan intravenously have been tried in two cases without success.

Of all the malignant sequelæ of streptococcus sore throat, these fulminant types of peritonitis and septicæmia were the most fatal. It is assured in my mind, however, that the large doses of hexamethyl-

enamine, with calcium lactate or chloride in twenty grain doses, undoubtedly prevented some of these from making their appearance.

1937 MADISON AVENUE.

Dr. William L. Rhodes, of Kansas City, Kansas, asserts that—

Having determined by both clinical and microscopical examination that the cause of the sore throat is due to streptococcal infection, treatment should be instituted to eradicate the disease, and at the same time guard against impairment of the middle ear, as a sequel. My treatment would be at once thoroughly to open the bowel by giving quarter grain doses of calomel, every three hours, until effect is obtained, and repeat every third day so that there will be no absorption of fecal toxins from a costive bowel.

Locally I should employ the phenol alcohol swab as follows: Make two cotton swabs, saturate one with carbolic acid, and one with absolute alcohol. Have patient lie on side upon which treatment is to be made, protect tongue and gums with waddings of absorbent cotton, and apply swab of carbolic acid to affected tonsil, followed with a thorough swabbing with absolute alcohol as soon as tissue begins to turn white. This neutralizes the acid and lessens the caustic action on the tonsil. Treat the opposite tonsil in the same manner if infection exists. Repeat as often as symptoms warrant.

A spray every two hours with Dobell's solution will be of help in preventing the spread of the disease. Gargling with ice water is beneficial in reducing inflammation and is soothing to the patient. Swabbing the throat once or twice daily with equal parts of tincture of iodine and glycerin is of help in destroying the organism, thereby preventing infection of the Eustachian tube and middle ear, with the impairment of hearing which occasionally occurs.

Systemic treatment should consist of the administration of hexamethylenamine in five grain doses, every four hours, during the most active stage of the disease, gradually lessening the dose as convalescence ensues. As an adjunct to the foregoing treatment I should most certainly employ the anti-streptococcal serum treatment, injecting ten c. c., every five hours, until the most severe stage of the disease is past, then give ten c. c. per diem, or every other day, until the symptoms warrant suspension of the serum treatment.

The antistreptococcal serum may be introduced into the deep muscles of the thigh or arm, immediately under the skin, or directly into the blood stream by the intravenous method. The latter method is in all probability the most efficacious, as the serum is thrown directly into the blood stream and comes in contact with the offending organism in larger quantity, thereby having a more highly developed bactericidal power than if given by either the intramuscular or the subcutaneous method, wherein absorption is slower and the bacteria have time to adjust themselves to the new condition of the blood.

Metchnikoff asserts that the successful resistance of an animal against bacteria depends upon the power of certain white blood corpuscles, known as

phagocytes, to destroy the invading germs, the process of destroying bacteria by the animal cells being called phagocytosis. Sir A. E. Wright, of London, demonstrated that the power of leucocytes to incorporate and destroy bacteria is dependent upon substances in the blood called opsonins. Opsonins contained in the blood serum combine with the bacteria, rendering them capable of being taken up and destroyed by the phagocytes.

The technique of the intravenous method is very simple; after rendering the site of injection aseptic with alcohol, followed by iodine, place a constricting band above the site of the injection, have patient clench his fist, thereby causing veins to show prominently under the skin, then with a scalpel make a slight cut of the skin over the median basilic vein, being careful not to cut *through* the skin, thus avoiding a possible cutting of the vein and the consequent annoying venous hemorrhage. Pull the skin to one side of the vein and cut through the skin, then allow the skin to slip back to the natural position, whereupon the vein will show plainly in the opening. Insert the needle gently into the lumen of the vein and inject the serum slowly.

Keep the patient in bed, keep the bowels open with calomel, give light nutritious food in generous quantity to keep up the patient's strength, give plenty of water, both externally and internally. Control high temperature with cold sponge baths.

Dr. Maurice H. Tallman, of Boise, Idaho, writes:

The treatment of septic sore throat in view of the possible sequelae is a much disputed subject. The present trend in the opinions of experienced clinicians is that an acute streptococcal infection of the tonsils predisposes to various sequelae, viz., endocarditis, pericarditis, polyarthritis, peritonitis, meningitis, and pleuritis.

Just what constitutes the various metastatic processes we are not able to determine at this time. The intimate relationship between the lymphatic glandular system and the endothelial structures is recognized by all, in fact, all are a part of the same embryological formation.

In the treatment of this important subject we must look first of all to the prophylactic measures which increase the resistance to anginal infections. Careful details in these lines will not only prevent much suffering, but will save many lives and insure to posterity a healthier, hardier race.

Chronic inflammatory processes in the buccal, nasal, and pharyngeal cavities offer to the invading agent a tissue of low vitality and lessened resistance, and also produce a chronic toxemia impairing the general nutrition of the individual. Hypertrophied turbinates, adenoids, and tonsils are often but compensatory on the part of Nature to protect us from the evil influences of bad hygiene, yet surgeons will remove these structures with never a thought of their function, nor a word in regard to correcting pernicious habits. In a few months not a few patients return with the vault full of recurring adenoids, or consult another physician much to the chagrin and discredit of the former. The slogan is, operate, removing the offending obstructions instead of removing the vitiating causes of this disorder.

We realize that there are many cases where it is absolutely necessary to relieve the obstructions by surgical means; especially is it true of adenoids. My plea is not to be satisfied with the simple destruction of these tissues, but to ascertain and remove the condition causing their formation.

The importance of fresh air cannot be too strongly emphasized; the open schools are demonstrating the wonderful efficacy of pure, oxygenated air. Air vitiated by the toxic exhalations of our lungs should be as repulsive as the ingestion of the other excrements of the body, still we find those who religiously bolt and fasten every door and window in a sleeping room, filling their lungs with the poisonous by products of metabolism at a time when cell reconstruction is most active. In these strenuous days we should have the purest of fresh air for the regeneration of our spent forces.

In chronic inflammatory lesions drainage will accomplish more than all other forms of treatment. A fossa or cavity which is not thoroughly drained becomes a breeding place for all forms of bacteria; the adjacent tissues are overwhelmed with toxins and cannot react; a resulting chronic intoxication of the whole system ensues, which sooner or later opens the pathway to a more serious trouble. Following acute attacks, a careful search should be made to be sure that all such lingering infections are cleared up.

The treatment of an acute attack of streptococcus infection will be divided into: 1. Local; 2, systemic; 3, postfebrile.

Rest in bed is essential. This should be impressed upon the patient, as it lessens the time of the acute attack and decreases the danger of sequelæ.

The local treatment consists in frequent douches of the throat with hot normal salt solution. During the waking hours the throat should be washed every half hour; it affords great relief and aids materially in reducing the amount of septic absorption. Every three hours a 25 per cent. solution of hydrogen peroxide in equal parts of water and alcohol, will assist in removing membranes and prevent an extension of the inflammation. Caution should be used in the use of powerful irritant and caustic applications, as they have a tendency to denude large areas of mucosa, making a new field for infection instead of benefiting the condition. Ice applied externally is useful in relieving pain and retarding inflammation.

The medical treatment varies according to the individual case and the personal factor of the attendant. We are often discouraged with the poor results obtained.

The free use of the salicylates will reduce temperature, quiet pain, and relieve the systemic distress, yet the end results are often questionable and their beneficial action is open to dispute. Personally, I use, and with marked success, a polyvalent vaccine (an autogenous is to be preferred, if obtainable) combined with the biniodide of mercury, in doses ranging from one twenty-fifth to one fiftieth grain every four hours, with aspirin, grains five to ten at the same time, until pain is relieved. The bowels should be kept open.

The postfebrile care especially in those predis-

posed to sequelæ, should be emphasized; rest in bed should be insisted on for several days after all febrile symptoms have disappeared to avoid overexertion and unnecessary exposure.

An autogenous vaccine judiciously used throughout the disease and well into convalescence, will increase the individual resistance and render the patient practically immune to metastatic involvement.

Dr. Louis L. Hoff, of Springfield, Mass., observes:

It has been found that this infectious condition of the throat is due to the ingestion of milk from cows which have mastitis or any of the other infectious diseases to which they are prone, and also to the uncleanness, etc., on the part of the milkers. This septicemic condition may also be transmitted from one person to another by direct contact and for these reasons I may state here that the remedy lies in the better inspection of cows and their milkers and boiling or efficient pasteurization of this milk. Beside this, we must remember that this condition is both local and systemic.

Before going into the treatment of this serious infection when thoroughly established I will name some of the complications and sequelæ that may follow the sore throat. They are middle ear disease, myringitis, mastoiditis, in its various forms according to the virulence of the infection, meningitis, adenitis, and sometimes abscesses, arthritis, etc., so that in treating cases of sore throat of whatever cause, particularly when we feel that the sore throat may be due to the causes mentioned above, the proper treatment lies in prophylaxis or the cleansing of the passages, the oral cavity, nasopharynx, and external auditory canal with any of the mild antiseptics, Dobell's solution, liquor antisepticus, or hydrogen peroxide, diluted in its proper proportions, or the passages may be irrigated with a normal saline solution, warm.

When this condition of sore throat is thoroughly established, the treatment required is thorough isolation, in a room well lighted, with fresh air and good nursing. These cases oftentimes will so resemble other conditions of the throat, such as diphtheria, by the finding of a dirty membrane resembling that of diphtheria that microscopical examination of smears and smegma is essential to make doubly sure of the diagnosis.

The symptoms that occur in streptococci sore throat need not be enumerated here, but as we know what part of the anatomy we are to deal with, the treatment mentioned above is sufficient, with attention to the rise of temperature by sponging, etc.; this same gives cleanliness and makes the patient feel more comfortable. Phenacetin, camphor, and caffeine citrate may be given, also calomel, cascara sagrada, or phenolphthalein. For the dysphagia that occurs in these cases we have the patient swallow pieces of ice, or else apply the liquor plumbi et opii or unguentum belladonnæ and opii. I see to the proper emptying and flushing of the kidneys, etc., by the administration of water in sufficient amounts. Nutritious feedings will support these very sick patients during the whole disease. I must not forget here that the milk when given should be boiled during the whole disease.

Certain cases may show a predominance of cer-

tain symptoms, and these should be treated accordingly.

In closing I would say that the treatment really lies in the careful pasteurization or boiling of milk given during the disease, good nursing, and the strict isolation of the very sick patient.

Therapeutical Notes.

Treatment of Snake Bites.—Henry Tucker, in the *Therapeutic Gazette* for May, 1912, states that the presence of more than two punctures at the seat of injury strongly indicates that the wound is not one made by a venomous snake; the head of the snake should, however, wherever possible be kept for identification. In regard to the treatment, the author offers the following recommendations:

If, as is generally the case, the bite is on an extremity, tie one or more ligatures—preferably of broad rubber bands—above the injury. Incise deeply, cutting across the puncture for at least one inch, and well beyond the depth reached by the fang. Next, wash in running water, manipulating the part to promote free bleeding. If running water is not available, suck the wound, then rinse the mouth thoroughly with a solution of postassium permanganate. Now wash the wound well, and use in and around it the postassium permanganate solution; or inject a one to 100 solution of chromic acid, being careful to infiltrate completely, not only the wound, but also the surrounding tissues.

Do not give ammonia. Stimulate with small doses of whiskey, if indicated, but do not overdose, as more persons have been killed by taking large quantities of whiskey than by snake bite.

When positively certain that the poison has been removed from the wound, loosen cautiously the ligatures, that nearest the heart first, but do not remove them, so they may be again tightened if symptoms recur. In all cases the victim must have the best surgical care, and the wound should be kept open by packing with wet antiseptic gauze, as sepsis and local gangrene are very apt to follow the injury.

Treatment of Ascariasis.—Railliet, in *Bulletin médical* for April 17, 1912, is quoted by Plicque as recommending the combined use of santonin and calomel for the removal of ascarides in children over three years of age. In preparation for the action of these drugs, a light diet, consisting chiefly of milk, should be prescribed for a few days, and on the day before the drugs are given the lower bowel should be cleaned out with simple enemas, morning and evening. Some cinchona preparation or Fowler's solution may be advantageously given before the vermifuge as a tonic in markedly anemic and rundown patients. The essential measure is the administration of powders each containing 0.005 gramme santonin and 0.025 gramme calomel for every year of the child's age, mixed with 0.5 gramme of milk sugar. Six such powders are ordered, of which two are taken at an hour's interval on three successive mornings. They should be taken in a little milk and on an empty stomach.

On the third day further purgation should be carried out by means of jalap, scammony, or an additional dose of calomel.

Alkaline beverages should be avoided during the treatment, as they facilitate absorption of santonin from the alimentary tract. Acidulous fluids, such as lemonade, on the other hand, tend to produce the opposite effect and also serve more or less to reduce the nausea and dizziness often induced by the vermifuge.

Where santonin is not well borne or ineffective, and in older children, a combination of oil of chenopodium and menthol is useful:

R Olei chenopodii, 0.6 gramme;
Mentholis, 0.1 gramme.
M. Divide in capsulas No. vi.

The doses given are suitable for a child ten years old. Three capsules should be administered at intervals of two hours on two successive days, and fifteen grammes of castor oil given in addition on the second day.

An Ointment for Burns and Ulcers.—*Tribune médicale* for April, 1912, recommends the following ointment for use in burns, ulcers, and parasitic skin affections of various kinds:

R Zinc peroxide, 6.5 grammes;
Balsam of Peru, 35.0 grammes;
Petrolatum, 58.5 grammes.
M. ft. unguentum.

Hydrated wool fat may be substituted in part for the petrolatum.

Treatment of Pain in Tuberculosis.—H. Pailard, in *Progrès médical* for February 3, 1912, advises the use of subcutaneous injections of boiled water in cases of pain of neuralgic type in pulmonary tuberculosis or other affections. He has given several hundred injections of this kind, and finds that the procedure may be depended upon in all cases to give relief within one half to one hour, provided that the injection is made exactly at the point where most pain is elicited by palpation. The discomfort caused by the injection itself is very slight. Not more than one or two c. c. of water should be injected. Generally the pain does not return for several days to a week, or even longer. Occasionally it does not reappear at all. In other instances the injection should be repeated. That the effect of this measure is not a psychic one is indicated by the recent experiments of Surmont and Dubus, who showed in rabbits that injection of distilled water in the vicinity of the sciatic nerve brings about edema of the nerve, with infiltration of fluid between and around the fasciculi and sometimes congregation of leucocytes locally.

Treatment of Chronic Gonorrheal Vaginitis.—Dolérès, in *Paris médical* for May 4, 1912, is credited with the following preparation, which is to be applied locally by means of tampons:

R Benzoini,
Camphoræ, } ana 5 grammes;
Cubebæ, }
Petrolati, 25 grammes.
M. ft. unguentum

Injections of a solution of potassium permanganate should also be administered.

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NATIONAL HEALTH LEGISLATION.

The question of national health legislation seems to have been settled, for the time at least, by the passage last week of a law enlarging the scope of a well known service and abbreviating the name to United States Public Health Service. The scope of the new service we indicated, in part, last week; in addition, it includes the previous laws relating to quarantine, the eradication of epidemic diseases, the medical inspection of immigrants, the control of vaccines, antitoxines, etc., as well as the various investigations provided for in bacteriology, pathology, chemistry, pharmacology, medical zoology, etc., which thus give the Public Health Service a wider scope than that of similar services in any of the other leading nations of the world. Some may be disappointed that the enforcement of the pure food law was not transferred thereto, but the purely commercial and economic interests involved in this question are so great that it may have been wiser to leave it to the Department of Agriculture, which has to do with the production of foods; this seems to be the experience, not only of several foreign countries, but of many of our own States and is evidently the view of Congress, for Representative Mann, who secured the passage of the food law in the House, is the author of the present public health bill.

Physicians will be gratified to see that members of their professions will administer the public health laws; also that none of those clauses which practically constituted a recognition of all sorts of irregular practitioners and "healers," and which were inserted into some of the other bills recently before Congress in a frantic but ineffectual effort to gain support, are to be found in this new law.

This legislation is the culmination of an agitation which has been carried on for some time for a larger Federal health service, although some of this agitation has delayed rather than aided the passage of the present measure. This resulted from the impracticable demands originally made; the earlier bills introduced for this purpose would have disrupted nearly every existing department of the Government and were met with prompt and effective opposition, not only by members of Congress, but by President Roosevelt, the Cabinet, and nearly all of the twenty-five or more bureaus and divisions which it was proposed to consolidate into one new department. The impracticability of these earlier plans was soon recognized by their promoters, and the subsequent bills, which followed in quick succession, called for less and less, until the more recent ones were almost devoid of any real constructive legislation, certainly containing much less than does the present law. Much misinformation, moreover, was displayed by some of their advocates; thus reference was frequently made to the "great health departments of the leading European countries," although, as was pointed out long ago in this JOURNAL, there are no such departments in these countries; and efforts were made to belittle our own already very efficient health service. It is not surprising that none of these measures received serious consideration.

While some of the advocates of these impracticable bills were indulging in theory, the physicians of the Public Health and Marine Hospital Service were facing facts and going steadily ahead with their work of preventing and combating disease, at what cost to themselves is shown by the fact that during this period at least four laid down their lives. The late Surgeon General Wyman might also be added to this list, for, although suffering from two fatal maladies, he gave himself no rest, but remained in Washington during all of last summer, patiently administering his office and preparing arguments for the continuance of the already too meagre appropriations. It is gratifying that Congress has recognized the services of these physicians and by a unanimous vote of both houses placed them in charge of the Public Health Service.

It is to be hoped that the passage of the present law will mark the beginning of a new era in the dis-

cussion of health work; and that henceforth the energies of those interested in this subject will be devoted to aiding the normal growth and enlargement of the new service; there is certainly little need now for agitation for a more comprehensive law. There is need, however, of liberal appropriations and the moral support both of the medical profession, which should look upon the activities of the service as a part of their profession's work, and of the public, which the organization will serve without discrimination as to creed or condition.

THE PREVENTION OF BUBONIC PLAGUE.

The presence of bubonic plague, though to a limited extent, in Venezuela and other countries with which our ports are in direct and constant communication, renders Assistant Surgeon General Rucker's remarks on the eradication and prevention of this disease in *Report 88* of the Public Health Service particularly valuable and timely. The San Francisco epidemic has shown how readily bubonic plague can invade our territory; it has demonstrated, moreover, how difficult it is to eradicate this disease once it is allowed to gain a foothold. As it affects primarily rodents, and secondarily—accidentally we might say—man through parasites, its eradication lies in the destruction of the carriers of the latter.

The rat and the chipmunk, or ground squirrel, are the common carriers of the infective flea, but the ground squirrel is regarded as a negligible factor, while the rat, through his presence on practically all ships and in enormous numbers in cities, is the pernicious intermediary to which practically every case can be traced. The ubiquitous rat thus becomes the legitimate target of all preventive measures.

The effort to exterminate rats by infecting them with *Typhi murium* has not proved certain or satisfactory. Of the chemical poisons, on the other hand, arsenous acid and phosphorus have given very good results, phosphorus being the better. Arsenous acid should be given "in lard, sweetened with sugar, flavored with oil of anise or musk, and colored a light pink." Phosphorus may be incorporated with glucose, alternating with cheese, lard, mutton fat, corn meal, and ground fish, such as salmon. The mass should be spread on slices of bread which are then cut into cubes about three eighths of an inch square. Great care should be taken in distributing the pieces in such a way as to keep them out of reach of children or domestic animals. A careful record should be kept of their location, and those remaining should be removed

when it is decided to cease poisoning in a given neighborhood.

Traps present advantages over poisoning, but rats are cunning and wary; the baits should be changed frequently, attractive and odorous morsels being used. The snap, guillotine, or dead fall traps seem to give the best results. They should be set in the narrow roadways of the rodent and beside a wall. A very effective trap is a barrel half filled with water and having a lid which tilts and precipitates the animal into the water beneath. A piece of rancid cheese attached to the middle of the lid serves to attract the rat, whose approach is facilitated by means of a board, the off end of which rests on the floor. Destruction by means of their natural enemies, cats, dogs, ferrets, etc., is also effective, but this means should be used only when no epidemic is present, since these animals can also harbor fleas from the rodent and thus transmit the disease to man. Electricity, shooting, clubbing, the destruction of rodent habitations, ratproofing by means of concrete basements, flooring, etc., starvation by preventing access to food, adequate disposal of refuse, etc., are additional measures available.

None can do more than the physician, whether in the course of family practice or through his connection with hospitals, sanatoria, asylums, barracks, passenger ships, etc., to protect the country against the scourge by urging, and enforcing, if necessary, Doctor Rucker's recommendations wherever it is possible for him to do so.

MEDICINE VERSUS SURGERY IN THE TREATMENT OF EXOPHTHALMIC GOITRE.

In our Therapeutical Notes, in the issue for July 20th of this JOURNAL, we referred to the treatment of exophthalmic goitre by a combination of electrotherapy with drugs, as recommended by Hertenberg. While it is obviously impossible for us to lend unqualified support to every new treatment of this disease, nevertheless we believe that the general practitioner should pay more rather than less attention to the purely medical methods for, although the great diversity of alleged cures indicates that as yet there is no specific, there is such a uniformity of belief that marked amelioration of the symptoms can be brought about by purely medical measures, as to justify a full inquiry into the possibilities of medicine before resorting to surgery.

In a posthumous article published in the June (1912) number of the *American Journal of Medical Sciences*, Dr. John Herr Musser stated his conviction that "the surgeon does too much and the

'internist' too little in the treatment of goitre." Contrary to popular belief, he was of the opinion that death from exophthalmic goitre is not of frequent occurrence. Chronic invalidism, however, is the invariable consequence and every effort should be put forth to relieve the distressing symptoms associated with disturbances of other secretory organs. Musser pointed out the fact that the surgical death rate of three per cent. was practically the same as that following medical treatment, and that the ultimate result was no better, for in both cases rigid and prolonged after treatment was necessary before the cure was finally accomplished.

It seems then, that other things being equal, surgery should be the last resort. As lending further support to the correctness of this opinion, it is worthy of note that even so great an advocate of operative procedures as Kocher, out of a total of 46,000 operations on goitres of all kinds, found only 780 of the exophthalmic variety which he considered to be surgical cases.

FISH AS CARRIERS OF CHOLERA BACILLUS.

Max Pettenkofer, the well known hygienist of Munich, made the observation, years ago, that ground water played an important rôle in infectious disease; upon rising of the ground water the virulence of the disease decreased, while a fall of the water carried with it an increase. The rise of the ground water is preceded by a turbidness of the river system, when the bed of the river acts as a filter; by the fall of the ground water the river bed becomes a poor filter and the microbic organism can more easily enter the ground water. This theory enlisted as many friends as enemies, and well known is the controversy between Pettenkofer and Koch, who, in 1884, discovered the comma bacillus. Among these infectious diseases cholera is included. Drinking water, milk, fresh, uncooked vegetables, and raw fruits are considered the most common carriers of the virus, and India is taken to be the place where the disease originates; it is there endemic.

All these facts are well known, but interesting, although not entirely new, is a theory which was promulgated for the first time about twelve years ago in Batavia, by a Swiss physician, C. O. Gelpke, who for thirty-two years served as a surgeon in the Dutch East Indies. Doctor Gelpke has returned to his home country, where he now practices, and has written a short essay upon his theory, which appears in the *Correspondenz-Blatt für Schweizer-Aerzte* for July 20, 1912. He believes that fish are great carriers of cholera and that

through fish and their spawn the virus is carried from the source of the river to its mouth. He does not think that man himself and his fomites or feces play an important rôle in the migration of cholera. To diminish the danger of an epidemic, cities have now been supplied with pure drinking water and good filter stations; the drinking water is not taken from rivers flowing past cities, but from wells or rivers whose systems have been isolated. His theory is that the bacillus enters the soil, is carried to the ground water, and thence to the river, where fish and spawn receive and carry it along the current of the river. He has not been able to prove his theory bacteriologically.

MORAL CHARACTER AND THE TROPICS.

Whatever be the exact cause, the consensus seems to be that a tropical climate does not contribute to longevity in white races; the degeneration of tissue is probably quicker and the resisting power of the organism is more speedily sapped. With this there seems to be a strong tendency to moral degeneracy. We do not learn from records of arctic exploration any treatment of the Eskimos comparable to the shocking torture inflicted on the natives of Mexico, Peru, and the Congo, in the search for rubber. From the time of Cortez the hunt for riches in the tropics has been one long story of murder, rape, rapine, and torture. Cited from the notorious British blue book, one typical example of the treatment of the natives will suffice; it equals anything ever brought to the attention of the House of Commons concerning the alleged exploits of the "unspeakable Turk." When a male native was thought to have brought in an insufficient supply of rubber, it was customary to stand him on his head, spread apart the thighs, and then, with a heavy club, beat upon the testicles until life was extinct. Death under these circumstances is a matter of moments only; doubtless, judging by analogy with other practices of these pioneers of civilization, were not the overseers very busy men, means would have been found to prolong the agony.

MAMMARY CANCER IN THE MALE.

In *Presse médicale* for August 7, 1912, de Graene is stated to have reported to the Société d'anatomie de Bruxelles a case he noted in a middle aged man of a nodulated cancer of the left breast as large as a plum, but not ulcerated; a year and a half later, a similar tumor was observed on the right breast. The nodules were extirpated, and microscopical examination showed them to be of typical carcinomatous structure. There was no sign of axillary metastasis.

THE PLAGUE SITUATION.

Plague is still prevalent in Porto Rico, as shown by the *Public Health Reports* for August 23, 1912, which gives from August 6th to 16th two new cases, making a total of forty-nine cases up to August 20th. The work of eradicating the infection among the rodents, however, also remains. This will take some time, as it necessarily includes the poisoning and trapping of rats over a sufficiently long period markedly to reduce their numbers, and the general ratproofing of all buildings which might otherwise harbor rodents. As there have been no new cases in Havana since July 27th, the restrictions placed upon passengers coming from that port to the United States have been removed, except as regards persons who have resided in Havana between Cuba Street and the water front. The restrictions on vessels and cargoes, directed against the importation into the United States of infected rodents, remain unchanged. How thoroughly the extermination of rats is carried on in Havana is shown by the report, that from June 24th to August 10th, 6,216 rats have been examined without finding any infected. Very important antirat ordinances have been passed in Oakland, California, and in Seattle, Washington.

Obituary.

JAMES EDWARD NEWCOMB, M. D.,
of New York.

Doctor Newcomb died at his summer home, in Lake Kushaqua in the Adirondacks, on August 27th. He was born in New London, Conn., August 27, 1857, and had consequently just completed his fifty-sixth year. He was educated at Bulkeley School, graduated from Yale University in 1880, and completed the three years' medical course of that time at the College of Physicians and Surgeons in New York, in 1883. Subsequently he was interne at Bellevue Hospital, and since then practised in this city, restricting his efforts in recent years to diseases of the nose, throat, and ear. He was lecturer in laryngology at Cornell Medical School and consulting laryngologist to Roosevelt Hospital. Doctor Newcomb was an extensive writer on his specialty, both of textbooks and of original contributions to the *NEW YORK MEDICAL JOURNAL* and other scientific periodicals. He leaves a widow, the founder of Stonywood Sanitarium, to which the late physician was consultant.

Medical Law.

VIII. CIVIL MALPRACTICE.

(Concluded from page 390.)

Doctor Gibbs, a physician and instructor of many years' experience, who examined the foot more than a year after amputation, testified that in his opinion the foot might have been saved. Upon cross-examination he said in part:

Q. Would you venture, from the professional skill that you have had in the years that you have been practising your profession, an opinion of that kind without knowing the exact condition of the patient at the time he was

brought to the hospital? A. If I was in the fix that I am now, I would. Q. What do you mean by "fix"? A. With a foot that has been in alcohol for a year, how could I do otherwise? If I could have seen the flesh conditions of the boy's foot when injured, it would have been a different thing. Q. If you knew the conditions of the boy when the operation was performed, that might alter your opinion entirely? A. I cannot tell; it might, of course. Q. Not knowing how the condition was, you still venture an opinion that that foot ought not to have been amputated? A. On the conditions I find there I base my opinion. I say on the conditions I find there, and nothing else. I don't know whether the circulation had entirely stopped in the foot or not. On the condition I saw I am ready to give an opinion. Other conditions might entirely influence my opinion; if I saw the end of the artery was torn out, and the circulation entirely stopped, it might alter it. I don't know whether the bone protruded from the foot after the injury. There is a longitudinal cut there, and I don't know how much was done by the accident. I don't know after the injury, after the boy was taken to the hospital, whether the foot was perfectly cold and the circulation had ceased entirely. If two hours after the injury the foot was still cold I would wait twenty-four hours, to see whether collateral circulation set in. Q. That would be for the judgment of the attending surgeon, assuming he was a competent surgeon? A. I suppose so. Q. That is a fact? A. That would depend upon where he was educated. There are a good many competent surgeons, but they look upon things with a different eye. They are not all taught the same. Q. Assuming that the man was a competent surgeon, and he was called in to attend this case, he would have to rely on his best judgment? A. Yes, sir. Q. Taking everything into consideration? A. Yes, sir. . . . Q. A surgeon finds himself on the horns of a dilemma, and when he finds himself between a shock killing the patient, and a decision between that and the possibility of dangers which are incurred by delay, he has to use his best judgment? A. No, he calls in two or three more surgeons. Q. Suppose he calls in one or two more, and they all agree? A. Then it is hard on the patient. Q. Then he is doing what seems best? A. Yes, sir. Q. To those who have examined the patient at the time? A. Yes, sir. . . . Q. Suppose the boy remained unconscious three quarters of an hour, what would that indicate? A. It would indicate a certain amount of shock; nothing very serious with the state of the part. Q. Would that three quarters of an hour unconsciousness, would that indicate pretty severe shock to that boy's system? A. It would mean a shock, but nothing but what he could recover from. Q. Are you sure of that? A. I am not sure of anything. Q. What would the pulse be? A. I don't know. Q. How high a pulse should indicate a rather serious condition as to shock? A. In that boy? Q. We are not talking of any other boy? A. I don't know. I can't say from what I know or from what I have seen of the injury. Q. How high a pulse? A. I don't know what it would be, in this case. Q. Could you from your experience tell what pulse would indicate a serious condition? A. No, considering what it is about twenty years since I have had a case of that kind. Q. That pulse is a very important matter in the necessity of an operation? A. Yes and no. Q. You could not tell? A. You have to fit in each case that you have. You cannot give a general statement. Q. You are giving a general statement without considering those facts? A. I would not. Q. Do you want to eliminate the question of the boy's pulse in deciding the necessity of an operation? A. I am giving my opinion of what I have seen of the injury and what I have heard of the case. My opinion is not based on anything I don't know. Q. You would have a good deal more faith in your own opinion if you had attended to the boy at the time? A. Yes, sir. Q. You would have a good deal more faith in some other competent surgeon's opinion that had attended the boy at the time? A. Than what? Q. Than your own now? A. Of course, a competent surgeon attending it. Q. His opinion would be better than yours? A. Yes, I think it would.

A third expert, called by plaintiff, testified as follows:

Q. In order for you as a surgeon to come to an in-

telligent conclusion whether an operation was necessary, would it be necessary to know the condition of the wound, the condition of the pulse, the temperature, the condition of the shock, and to know whether the wound was clean or dirty, how much hemorrhage there had been, and indication of that sort, before you could form a correct conclusion in your own mind what was necessary to do? A. I told you without seeing the case I could not give a positive opinion as to that, because there are always other circumstances. An injury might be very small, and for all that it would be absolutely necessary that there should be an amputation for the very fact that there are extraneous matters injected into the wound, and I have had small ones and lost a life, and I have had large ones that you would think it almost impossible to save and saved them, so you cannot go by the magnitude of it. While larger ones always appear most aggravating, you have to take into consideration all the matter connected with it. There is no surgeon competent to give a decision. He is incompetent to decide or give a positive answer whether it is absolutely necessary at the time of that operation or not indications might be that it was, and indications might be that it was not. The indications that would appear there that would make it absolutely necessary would be extreme. There would be cessation of the circulation, etc., and also extraneous matter. You cannot cleanse the wound any too quickly, and you should always cleanse the wound and tend to that thoroughly. You have to treat each case according to all appearances. Q. If as a skilled surgeon you had seen the patient, seen the foot torn and open, and observed his condition, the shock, the condition of the wound, his pulse, and all that, and you concluded that the operation was immediately necessary, would you feel that your opinion was better and more apt to be correct than that of a surgeon or a doctor who saw the foot after the amputation had taken place? A. That can be answered in this way: That a man that made all those examinations and saw it, he might not be as competent after that to judge as some one else who had more experience and had seen those things often, and yet he might be absolutely correct, but his chances would be superior undoubtedly to the man who did see it. Still, although the foot afterward might not indicate the necessity for amputation, yet the necessity may have existed. Q. A surgeon who saw it afterward would not know anything about it afterward, whether it was necessary or not? A. He would not know whether it was necessary for amputation so far as that is concerned, but the question would be whether an immediate operation would be necessary; that would be the question. The tarsal and metatarsal bones were dislocated, also the two cuneiform bones. The scaphoid bone was gone. That bone is still farther in the rear from the tarsal bones. The flesh was all denuded off the top and simply covered by some tendons—a few tendons here—and the muscular tissues were all gone. Q. There is often, from a severe traumatic injury, an injury from external violence; is there a serious condition from shock? A. Most always, lacerated wounds cause more severe shock. Shock is an interruption of the current of the nerve fluid which produce a reaction upon the circulation. Severe shock produces death many times. Q. Have you found in your practice that shock is continued and is progressive on account of the serious condition of the wound? A. Yes, I have seen it; yes, sir. Q. That fact is what makes surgical attendance immediately necessary? A. Yes, sir; and that is where immediate attention does come in, and sometimes.

Mr. Justice Brooke, in summing up the legal effects of this testimony, said:

Taking all the testimony on behalf of the plaintiff and considering it broadly, it amounts, at most, to this: That by following a different course plaintiff's foot might have been saved. While they disagree upon some details, they apparently all agree that the proper course for a surgeon to pursue, when confronted by such an exigency, is to consult with another or others, and then exercise the best judgment and skill of which he is capable. This seems to have been the course followed by defendant. The four house surgeons, after consultation with defendant, concluded, with him, that an immediate operation was necessary to save plaintiff's life.

Two experts, Doctor Kennedy and Doctor Brodie, surgeons of very wide experience, testified that in their opinion an immediate amputation was necessary to insure the plaintiff's life. It stands uncontradicted upon this record that the circulation in the foot was completely interrupted; that the foot was wholly devitalized; that the plaintiff was in a condition of profound coma from which the attending surgeons were unable to arouse him. It is also uncontradicted that death from shock frequently results from severe traumatic injury.

Taking into consideration the condition in which the plaintiff was when the defendant reached him, we have no hesitation in holding that defendant was amply justified in treating it as a case of emergency, and his conduct should be viewed in the light of the legal principles governing such cases.

While, as hereinbefore pointed out, the testimony offered on behalf of the plaintiff was insufficient, in our opinion, to raise a question of fact for the determination of the jury as to whether the defendant was guilty of negligence through an error in judgment, the plaintiff's case would not be aided even if that issue were determined in his favor. In an ordinary action for negligence, the fact that defendant has acted according to his best judgment is no defense. His act is to be judged by the standard of conduct of an ordinary prudent man under the circumstances. In conduct, resting upon judgment, opinion, or theory, however, a different rule has been recognized. This distinction has been well pointed out in the case of *The Tom Lysle* (D. C.) 48 Fed. 690, where it is said: "The distinction between error of judgment and negligence is not easily determined. It would seem, however, that if one, assuming a responsibility as an expert, possesses a knowledge of the facts and circumstances connected with the duty he is about to perform, and, bringing to bear all his professional experience and skill, weighs those facts and circumstances, and decides upon a course of action which he faithfully attempts to carry out, then want of success, if due to such course of action, would be due to error of judgment, and not to negligence. But if he omits to inform himself as to facts or circumstances or does not possess the knowledge, experience, or skill which he professes, then a failure, if caused thereby, would be negligence. No one can be charged with carelessness, when he does that which his judgment approves, or where he omits to do that of which he has no time to judge. Such act or omission, if faulty, may be called a mistake, but not carelessness."

It would be unreasonable to hold a properly qualified physician or surgeon responsible for an honest error of judgment, where, as in the instant case, he is called upon to act in an emergency and must choose between two courses of action either one of which involves the possibility of the gravest hazard to the patient. As was said by Upton, J., in *Williams vs. Poppleton*, 3 Or. 139: "In cases like this the court and jury do not undertake to determine what is the best mode of treatment or to decide questions of medical science upon which surgeons differ among themselves."

It is, we think, very clear upon this record that the question presented to the defendant, at the moment he was called upon to act, was one of judgment only. Instant action of some sort was imperative. In reaching a conclusion as to the proper course to be pursued, the attending surgeon must necessarily be influenced by many considerations: The physical character of the wound, the fact that there was a compound dislocation of the bones of the foot, the entire absence of one of these bones, the stripping off of the flesh from the anterior part of the foot leaving the tendons bare and shiny, the fact that the foot had become wholly devitalized, the presence of hemorrhage, the danger from blood poisoning at the time or from future infection, the character and quantity of foreign matter, dirt, cinders, etc., in the wound. To a consideration of these matters must be added a careful attention to the general condition of the patient, the degree and cause of the existing shock, the apparent ability or inability of the patient to resist shock, the condition of the temperature, pulse, and respiration, and the reaction or lack of it produced by the administration of stimulants. Called upon to act under such circumstances, and to determine which of two courses (one entailing certain mu-

tilation and the other probable death to the patient) should be followed, it is apparent that the defendant is not bound by the ordinary rules, of negligence, but is entitled to insist that, having used his best judgment, he is not liable.

The effect of the absence of consent to operate, in this case in particular, and in this class of cases in general, the Justice aptly expressed as follows:

There is nothing in this record to indicate that, had the parents of plaintiff been present at the operating table, they would have refused their consent to the operation. Indeed, it is inconceivable that such consent would have been withheld in the face of the determination of five duly qualified physicians and surgeons that it was necessary to save the plaintiff's life. But defendant testifies, and in this he is not contradicted, that he made inquiry for relatives of the plaintiff and was told that none were in the hospital. Suppose that his informant was in error (which is not certain), the defendant had a right to rely upon the information and to act in the emergency upon the theory that to obtain consent was impracticable. In *Pratt vs. Davis*, 224 Ill. 309, 79 N. E. 565, 7 L. R. A. (N. S.) 609, 8 Ann. Cas. 197, it was said: "In such event a surgeon may lawfully, and it is his duty to perform such operation as good surgery demands without such consent."

The fact that surgeons are called upon daily, in all our large cities, to operate instantly in emergency cases in order that life may be preserved, should be considered. Many small children are injured upon the streets in large cities. To hold that a surgeon must wait until perhaps he may be able to secure the consent of the parents before giving to the injured one the benefit of his skill and learning, to the end that life may be preserved, would, we believe, result in the loss of many lives which might otherwise be saved. It is not to be presumed that competent surgeons will wantonly operate, nor that they will fail to obtain the consent of parents to operations where such consent may be reasonably obtained in view of the exigency. Their work, however, is highly humane and very largely charitable in character, and no rule should be announced which would tend in the slightest degree to deprive sufferers of the benefit of their services. The judgment is affirmed.

News Items.

Bronx Medical Association.—A meeting of this association will be held at the Brownson Club, 348 East 146th Street, on Wednesday evening, September 4th. Dr. George L. Rohdenburg, of Manhattan, will read the paper of the evening, his subject being Clinical Studies of Precancerous Conditions.

Smallpox in Carbondale, Pa.—It is reported that there is an epidemic of smallpox in Carbondale, Pa. Up to August 22d nineteen cases had been reported, and vigorous steps are being taken by the board of health to prevent further spread of the disease. Dr. C. J. Hunt, of the State Department of Health, is investigating the outbreak. One case has been reported at Forest City.

German Physicians to Visit America.—The German Central Committee for Physicians' Study Travels will sail from Hamburg for America on September 7th on the steamer *Cincinnati*; there are about 250 physicians in the party. They will visit Philadelphia, September 20th and 21st, where an elaborate programme of entertainment has been arranged by the Philadelphia Committee on Reception and Entertainment, of which Dr. James M. Anders is president and Dr. Albert Bernheim, secretary general.

New York and New England Association of Railway Surgeons.—The twenty-second annual session of the New York and New England Association of Railway Surgeons will be held at the Hotel Astor, New York, on Wednesday, November 13, 1912. A very interesting and attractive programme has been arranged. Dr. John B. Murphy, of Chicago, will deliver the Address in Surgery. Railway surgeons, attorneys, officials, and all members of the medical profession are cordially invited to attend. Walter Lathrop, M.D., president, Hazelton, Pa.; George Chagee, M.D., corresponding secretary, 338 Forty-seventh Street, Brooklyn, New York.

Physicians Wanted in the Service.—The United States Civil Service Commission announces that an examination will be held on September 11th to secure a list of eligible persons from which to make certification to fill vacancies occurring in the position of physician in the different services. Among the vacancies to be filled are the following in the Indian Service, unless it is found to be in the interest of the service to fill such vacancies by reinstatement, transfer, or promotion: Colville Agency, Washington, \$1,200 per annum; Fort Lapwai Sanitarium, Idaho, \$1,000; Navajo Agency, New Mexico, \$1,000; Navajo Springs Agency, Colorado, \$1,000; Pueblo Day Schools, Albuquerque, N. Mex., \$1,000; Tongue River Agency, Montana, \$1,000; Walker River Agency, Nevada, \$1,000; Western Shoshone Agency, Nevada, \$1,000; Winnebago Agency, Nebraska, \$1,200. For full information regarding the examination, applicants should write at once to the United States Civil Service Commission, Washington, D. C., for a copy of the Manual of Examinations, and Form 1312.

Personal.—Dr. S. R. Klein, of Valhalla, N. Y., has gone to Chicago to take charge of the new research laboratories of the Hahnemann Medical College. Doctor Klein will also be connected with the department of materia medica of the college.

Dr. John M. J. Raunick has been elected health officer of Harrisburgh, Pa., and secretary of the board of health, to succeed Dr. John C. Hutton, who resigned recently on account of ill health.

Dr. George B. Landers, of Brattleboro, Vt., has been appointed assistant superintendent of the Presbyterian Hospital, New York.

Dr. Arthur A. Howard, of Boston, Mass., has accepted a position on the staff of Drake Medical College, Des Moines, Iowa, and will assume his new duties on October 1st.

Dr. Joseph A. Goodson, of Dixon, Ky., has been appointed superintendent of the Eastern Kentucky State Hospital, at Lexington, succeeding Dr. C. A. Nevitt. Dr. H. P. Sights has been reappointed superintendent of the Western Kentucky State Hospital, at Hopkinsville, for a term of four years.

Dr. Frank Fraser, of the Rockefeller Institute for Medical Research, has gone to Buffalo to study the outbreak of infantile paralysis in that city.

Dr. Charles M. Dennison, of Niagara Falls, N. Y., has been appointed medical superintendent of the Binghamton City Hospital.

Dr. C. A. Kreutzer has been appointed dean of the Wisconsin College of Physicians and Surgeons, to fill the vacancy caused by the resignation of Dr. Thomas C. Phillips.

Poliomyelitis in Buffalo.—Passed Assistant Surgeon Wade H. Frost, of the United States Public Health Service, who, upon the request of Dr. Eugene H. Porter, State commissioner of health, was detailed to cooperate with the State and local health authorities in a study of the outbreak of poliomyelitis in Buffalo, reports as follows: The first recorded outbreak of poliomyelitis in Buffalo occurred in the summer and fall of 1910. During the year there were reported to the health department 24 cases, a number altogether unknown in previous years. In 1911 only 9 cases were reported. During the present year cases have been reported as follows:

January	2
May	1
Week ending June 29	3
Week ending July 6	4
Week ending July 13	4
Week ending July 20	13
Week ending July 27	27
Week ending August 3	28
Week ending August 10	18
Week ending August 17	33
Total	131

These figures give an approximately accurate idea of the course of the epidemic. Of the cases reported so far, 11 have terminated fatally, but it is probable that this mortality will be increased, as a considerable number of cases are at present under treatment in the acute stage of the disease. A careful investigation is being made of each case with a view to obtaining such information as is possible regarding the source of infection, but these investigations have not yet progressed far enough to justify any definite conclusion as to the origin and spread of the epidemic. In addition to the cases in Buffalo, fifteen cases have been reported from neighboring municipalities.

Pith of Progressive Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL

August 15, 1912.

1. JOHN C. BERRY: Medicine and Humanity: Physician as Promoter of Civilization.
2. ALEXANDER C. EASTMAN: Our Present Knowledge of the Physiology and Chemistry of Gastric Digestion as Applied to Vomiting in Infancy.
3. W. J. RICE: Pneumonia Not Rare Complication of Heat Prostration.

3. **Pneumonia Complicating Heat Prostration.**—Reid has collated 160 heat cases and finds that pneumonia occurred in seventeen, or 10.7 per cent. There were forty-four deaths from all causes, nine of them from pneumonia; therefore pneumonia caused twenty per cent. of all the deaths. The heat cases are divided into those of heat exhaustion, heat prostration, and heat stroke, the pneumonias into lobar and bronchial, and a further analysis is made along these lines. He states that medical textbooks minimize, or fail to mention the importance of pneumonia in this connection.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

August 17, 1912.

1. GEORGE H. FOX: Broader View of Pythiasis rosacea.
2. EDWARD J. LEE and WILLIAM D. MURPHY: Experimental Study of Treatment of Cancer with Body Fluids.
3. A. L. BOWEN: State Institutions; Problems which Medical Men May Help to Solve.
4. MARCUS HULSE: Bacterial Etiology of Acne Vulgaris.
5. F. BROOKE BLAND: Sarcoma of Vagina.
6. LEONARD W. ELY: Pathology and Classification of Chronic Joint Disease.
7. JOSEPH GOLDBERGER and JOHN F. ANDERSON: Recent Advances in Knowledge of Typhus.
8. ISAAC LEVIN: Immunity and Specific Therapy in Experimental Cancer.
9. MATHIAS NICOLL, JR., CHARLES KRUMWIEDE, JR., JOSEPHINE S. PRATT, and JESSE G. M. BULLOWA: Typhus Fever (Brill's Disease) in One Family; Successful Inoculation into Guinea-pigs and Monkey.
10. ALEXIS CARREL: Preservation of Tissues; Application in Surgery.
11. ABRAHAM SOPHIAN and I. BLACK: Prophylactic Vaccination against Epidemic Meningitis.
12. GEORGE A. MOLEEN: Erythromelalgia.
13. L. DUNCAN BULKLEY: Diet and Hygiene in Diseases of Skin.
14. ESPY WILLIAMS: Intramammary Injections of Oxygen in Treatment of Eclampsia.
15. FRANK SMITHIES: Peptid Splitting Agent in Human Blood Serum.
16. J. L. VALLEY: So Called Precocious Menstruation Combined with Occurrence of Milk in Breasts of Infant; Hereditary Features.
17. GASTON TORRANCE: Endohepatic Hemorrhage of Traumatic Origin; Operation; Recovery.
18. ISRAEL BRAM: Suspended Heart Action in Acute Dilatation; Cardiac Massage; Recovery.
19. GUSTAV J. BECKNER: Hernia of Diverticulum of Bladder.
20. ROY K. SMITH: Another True Hermaphrodite.

4. **Bacterial Etiology of Acne Vulgaris.**—See this JOURNAL for June 8th, page 1230.

5. **Sarcoma of Vagina.**—Bland considers favorably a clinical division of sarcoma of the vagina into two classes, those occurring, generally in early life, as a more or less grapelike or polypoid tumor, with tendency to early degeneration, and those occurring late in life, as a firm, more or less circumscribed tumor. The former are the so called sarcoma botryoides. The writer regards all genital discharges in the infant with grave suspicion and recommends careful search of the cause, which should include not only the collection of cover glass smears and their microscopical examination to determine the presence or absence of gonococci, but also a careful inspection of the vaginal canal through a speculum, under chloroform anesthesia. We should regard with suspicion and fear all tumors of the vagina in infants, and a haphazard diagnosis should be avoided. In every case the diagnosis of vaginal tumors should be verified by microscopical

examination. The writer concludes that sarcoma botryoides vaginæ is most deadly, and but little hope is offered, even after early radical extirpation.

7. **Recent Advances in Our Knowledge of Typhus.**—See this JOURNAL for June 8th, page 1218.

8. **Immunity and Specific Therapy in Experimental Cancer.**—See this JOURNAL for June 8th, page 1219.

9. **Four Cases of Typhus Fever (Brill's Disease) in One Family.**—Nicoll, Krumwiede, Pratt, and Bullowa report four cases of typhus fever (Brill's disease) in a family of the poorer class which had been in the country for about eight months. One case gave positive results in two guinea-pigs whose blood, injected into a monkey, caused a typical typhus fever temperature curve, and prove the inoculability of so called Brill's disease, or endemic typhus, into monkeys. This direct transmission to guinea-pigs is an additional point of similarity to the endemic type occurring elsewhere. Negative results followed the inoculation of cerebrospinal fluid.

10. **Preservation of Tissues and Its Application in Surgery.**—Carrel concludes an examination of this subject by Tuffier, Magitot, and himself with the statement that human tissues preserved in cold storage can be used in human surgery. He hopes that future investigators will make known in what measure grafts may be made from the tissues of infants. From the fresh cadavers of fetuses and infants, grafts in large quantities could be easily taken and preserved in petrolatum in cold storage. This would simplify the transplantations of skin, bone, periosteum, and aponeuroses, for a supply of these tissues in latent life would be on hand for instant use, and these tissues enclosed in tubes could be transported, in small refrigerators of the vacuum bottle type, wherever and whenever needed.

11. **Prophylactic Vaccination against Epidemic Meningitis.**—See this JOURNAL for June 8th, page 1218.

12. **Erythromelalgia.**—Moleen says the syndrome of erythromelalgia is seen in association with diseases of the spinal cord and peripheral nerves, occasionally, however, in a pure form. It resembles the neurotic edemas and is often difficult to differentiate. In some cases the pain is apparently referable to a disturbance in the peripheral nerves, the posterior roots, or possibly, the lateral columns of the cord, while in others the burning and aching might be caused by a mechanical irritation of the peripheral nerve endings, primarily. Since the pain is aggravated by the upright position, the patient naturally seeks rest in bed, especially in the more severe cases. The apparent benefit following the use of suprarenal substance in the author's case seems to confirm the vasomotor theory in the production of vasoconstrictor paralysis, and to justify its use in uncomplicated cases. To overcome the results of inactivity and confinement, constitutional treatment is generally indicated. The use of a rubber bandage sometimes facilitates locomotion with less discomfort, and thus improves the patient's general condition.

13. **Diet and Hygiene in Diseases of the Skin.**—See this JOURNAL for June 15th, page 1295.

MEDICAL RECORD.

August 17, 1912.

- J. LEONARD CORNING: Diagnostic Significance of Abnormally Quick Fatigue (Apocamnosis) of Orbicularis Oris Muscle.
- CECIL K. AUSTIN: Dental Developmental Anomalies, with Cyst Formation.
- IRVING W. VOORHEES: Surgery of Hypophysis with Especial Reference to Intranasal Method of Hirsch.
- ARISTIDES AGRAMONTE: So Called Parasite of Yellow Fever (Seidelin).
- J. L. KIRBY-SMITH: Bullous Dermatitis Following Vaccination.
- M. ZIGLER: Facial Asymmetry Occurring in Scrofuloderma.
- DAVID WEBSTER: Sarcoma of Orbit.
- F. P. HOOVER: Cellulitis of Orbit.

1. Diagnostic Significance of Abnormally Quick Fatigue (Apocamnosis) of Orbicularis Oris.—Corning believes that general conditions that tend to lessen cerebral energy, as a whole, or of its cortical (motor) neurones in particular, will manifest their effects more promptly in the facial muscles than in other parts of the motor system. The kinetic condition of the orbicularis oris may be regarded as representative of the facial muscles. While structurally independent, the voluntary and the involuntary muscles are amenable to such general conditions, so that the degree of endurance displayed by the orbicularis oris, when voluntarily contracted, may serve as an index of the innervation efficiency of that muscle and hence of the other muscles of expression, when, under emotional incitement, the latter are contracted involuntarily (reflexly). Loss of endurance of the orbicularis oris is an important sign in emotional depression, especially when somatic symptoms are a marked feature. It follows that the degree of endurance exhibited by the ring muscle of the mouth upon voluntary contraction may afford confirmatory evidence as to the subject's emotional condition under certain circumstances, more especially when associated with other signs. Loss of voluntary endurance of the orbicularis oris occurs rather early in the diffuse meningoencephalitis of the general paralysis of the insane. We may increase or diminish the endurance of the orbicularis by the use of certain drugs (small doses of opium and strychnine increase, relatively large doses of nicotine, alcohol, ether, and the bromides diminish). The phenomena of the orbicularis will prove of most use, when they are associated with other symptoms. When unsupported by other and further evidence they will only exceptionally prove of assistance.

BRITISH MEDICAL JOURNAL.

August 10, 1912.

1. W. G. SMITH: Physics and Biochemistry in Relation to Dermatology.
2. A. WHITFIELD: Acne and Seborrhoea, Causation and Treatment.
3. L. DE BEURMANN: Sporotrichosis.
4. J. L. BUNCH: Treatment of Nevus.
5. G. G. S. STOFFORD-TAYLOR: Types of Dermatitis seborrhoeica.
6. J. E. R. McDONAGH: Rational Method of Treating Syphilis.
7. J. G. TOMKINSON: Vacuum Electrode in Neurodermitis.
8. F. C. MADDEN: Lymphangiomata of Scrotum with Multiple Pectechial Spots on Trunk and Limbs.
9. D. WALSH: Chronic and Recurrent Maladies of Skin in Relation to Heart Disease.
10. G. N. MEACHEAN: Systematic Study of Morbid Condition of Nails.
11. L. SAVATARD: Sebaceous Carcinoma; Relation to Rodent Ulcer.
12. L. SAVATARD: Fibrosarcoma on Lupus Scar Tissue.
13. M. C. ORAM: Xanthoma multiplex.

2. Acne and Seborrhoea.—Whitfield holds that the genesis of acne is as follows: 1. Seborrhoea, a nonbacterial abnormality; 2, comedo formation, due to the infection of the mouth of the follicle by the microbacillus of Sabourand; 3, suppuration around

the comedo, due to growth of *Staphylococcus pyogenes*. Other pyogenic organisms may at times be the cause of the suppuration.

3. Sporotrichosis.—De Beurmann gives a very comprehensive account of this newly recognized disease, discussing its etiology, occurrence, pathology, symptomatology, diagnosis, prognosis, and treatment. Its direct cause is infection of the lymphatic or vascular stream by the sporothrix of Beurmann. The organism lives naturally on several species of vegetable, in the earth, and occurs as a spontaneous disease in several animals, so that the sources of possible human infection are very abundant. Infection usually occurs through a wound of the skin, but may enter by way of the buccal or gastrointestinal mucosa. The typical lesion is a gumma, and the different stages of its development may all be seen in one patient, rendering the lesions highly polymorphic. A patient may present at one time, gummata, syphilitic, and tuberculouslike lesions, ecthymatous, rupial, and furuncular lesions, fistulous openings, large ulcerations with undermined edges, crateriform, punched out ulcers, etc. The gumma is, however, always the fundamental lesion. The disease affects only those somewhat below par in general health and is most frequently associated with tuberculosis. In itself it is very rarely fatal and is of a very chronic nature. De Beurmann gives the following points for the clinical diagnosis of the affection: The large number of lesions contrasted with a good state of general health. Partial cup shaped softening of a node, at first indurated, but the centre of which breaks down. Slight ulceration which undergoes secondary enlargement. Undermined, irregular, violaceous edges covering subcutaneous recesses, in which pus accumulates. The contrast between the small area of ulceration and the large gumma whence it arises. Coexistence of several contiguous ulcerations, separated by a slender bridge of violaceous skin, over a single gumma. Viscous pus or lemon yellow serous discharge. Ready autoinoculation. "Cold" and indolent evolution. Cicatrization of the skin over an abscess. Brown pigmented area around the smooth, elastic cicatrices. Constant absence of enlarged glands. De Beurmann gives several bacteriological and serological means of diagnosis, the best of which is culture in the cold on glucose peptone gelatin. The disease responds promptly and completely to the internal administration of the iodides and the local application of iodine.

4. Treatment of Nevus.—Bunch has treated over 2,000 nevi by solid carbon dioxide, and believes that this is the best treatment yet devised. The best results are obtained in stellate, capillary, cavernous, and flat pigmented nevi; treatment is less satisfactory for the linear and verrucous forms, and least successful in the port wine stains with nodular, irregular surface and warty projections.

9. Chronic Maladies of the Skin and Heart Disease.—Walsh finds that a large proportion of chronic and recurrent affections of the skin are associated with grave cardiac disease. The heart disease is usually valvular, and so long as full compensation is maintained exercises little or no effect on the skin trouble. The prognosis in skin disease is largely dependent upon the state of the heart.

LANCET.

August 10, 1912.

1. S. F. MURPHY: Points in Decline of Birthrate and Deathrate.
2. L. ROGERS: Diagnostic and Prognostic Value of Leucocyte Counts in Cirrhosis of Liver.
3. H. J. GAUCHER: Surgical Tuberculosis, Needs and Treatment.
4. D. FRESHWATER: Mercurial Administration: Some Uncommon Methods in Treatment of Syphilis.
5. T. W. TODD: Vascular Symptoms in "Cervical" Rib.
6. J. J. LEIGHTON and A. L. DYKES: Multiple Gammata with Unusual Deformity of the Liver.
7. H. BLACKWATER: Congenital Absence of Gallbladder, Imperfect Development of Pancreas, Imperforate Anus.
8. H. R. JONES: Indicated Employment of Married Women: Influence on Birthrate and Sex Ratio at Birth.
9. H. CAMPBELL: Observations on Neurone (Part IV).

1. Decline of Birthrate and Deathrate.—

Murphy observes that the decline in the deathrate from infectious diseases is responsible for nearly thirty per cent. of the decline in deathrate from all causes. The decline in the number of deaths from phthisis is enough to account for one sixth of the decline in deathrate from all causes. The decreased mortality from both of these groups is due to natural causes and in no way attributable to the efforts of man. That this is true of tuberculosis may be questioned, but careful analysis shows that such a decline was well marked many years prior to Koch's discoveries. The remaining half of the total decline is due to the other causes of mortality, those for which particular methods of prevention as applied to communities and populations have hardly been discussed. Cancer is almost the only disease which has shown no appreciable decline in mortality, and from this there has been a rise. He believes that the decline in the mortality from tuberculosis has been due to the gradual natural elimination of those susceptible to the disease. As affecting the different social classes, the decline seems to have been greatest in the lowest classes and least in the highest. The decline in the birthrate is found to run parallel to that of the deathrate as regards social class. The decrease has been the greatest in the least favored class and the least in the most favored. The decline in the birthrate has not been caused to any extent by intentional restriction, but, like the deathrate, has been due almost solely to the influence of natural causes, the precise nature of which is not understood.

2. Leucocyte Counts in Cirrhosis of the Liver.

—Rogers finds that a relative increase in the leucocytes in cirrhosis is of great and immediate prognostic value. Of a total of fifteen cases showing an actual or relative leucocytosis, sixty per cent. ended fatally in a short time, while other patients were discharged without any improvement. On the other hand, in nine cases without any leucocytic increase the mortality was only eleven per cent. The differential count in the cases having a leucocytosis shows a polynucleosis up to ninety-three per cent. Rogers takes this as an indication of the development of a terminal bacterial infection, due possibly to *Bacillus coli communis*.

5. Vascular Symptoms in "Cervical" Rib.—

Todd draws the following conclusions as the result of careful anatomical study: 1. Any explanation of the vascular phenomena may be found inadequate if it depends only on direct pressure on the subclavian artery. 2. Clinical and anatomical evidence suggests that the vascular symptoms may be trophic in character and caused by a lesion of the sympathetic fibres in the lower portion of the

brachial plexus. 3. Certain anatomical facts indicate that damage to the sympathetic fibres to the arm may occur in the situation where a lesion of the spinal fibres is likely to occur in cases of cervical rib. 4. The anatomical disposition of the parts around the subclavian artery as it passes from thorax to axilla, indicates that this cannot be the site of injury to the vessel or to the sympathetic nerves surrounding it.

8. Industrial Employment of Married Women.

—Jones comes to the conclusion that the employment of married women in industrial occupations tends to diminish the birthrate; that such employment tends to the birth of a larger proportion of female infants; that low birthrates in themselves tend to the production of a large proportion of girls; that the rate of infantile mortality is higher as the proportion of employed married women rises.

BULLETIN DE L'ACADÉMIE DE MÉDECINE.

July 10, 1912.

GAUCHER, EMILE, and DESMOULIERE: Cholesterol Content of Blood Serum in Syphilis.

Cholesterol Content of Blood Serum in Syphilis.—Gaucher, Paris, and Desmoulière found that no evident relation existed between the cholesterol content of the serum and the result of the Wassermann reaction. No influence of mercurial or arsenical medication upon the cholesterol content was clearly distinguishable. In early syphilis changes in the cholesterol content from the normal are slight and variable; in syphilis of long standing, on the other hand, hypercholesterinemia seemed to be the rule. Whether, as Chauffard believes, hypercholesterinemia occurring in infectious diseases is to be regarded as an evidence of a reaction occurring in the system and resulting in the gradual development of immunity, or whether, as Lemoine and Gérard maintain, hypercholesterinemia plays an important rôle in the production of arteriosclerosis and atheroma, cannot as yet be stated. These two views, indeed, may be reconciled, at least in the case of syphilis, without much difficulty.

JOURNAL DE MÉDECINE DE PARIS.

August 3, 1912.

1. SCHEFFLER: Cardiovascular Medication.
2. PAUL GASTOU: Technique of Ultramicroscope.
3. REYNESE: Iodine Values in Guineology.
4. CHARLIER: Practical Radiology.

1. **Cardiovascular Medication.**—Scheffler recalls that digitalis, undoubtedly the best of cardiac tonics, does not always work. In such cases caffeine, which acts like electricity on the heart, may be useful, especially when combined with sodium benzoate. Strophanthus is in the second rank only. Convallaria acts mainly on the cardiac nerves. Sparteine sulphate acts more promptly on the myocardium than digitalis itself. Adonis vernalis may be used if all other remedies fail. Cactus grandiflora is unreliable, but sometimes raises arterial pressure.

LYON MÉDICAL.

Juin 21, 1912.

E. GRAND-CLÉMENT: Value and Manner of Employment of Cyanide of Mercury in Prevention or Care of Exogenous or Endogenous Infections of Eye.

Mercury Cyanide in Eye Infections.—Grand-Clément states that frequently repeated irrigations of the eye with a one to 2,000 solution of mercury

cyanide for the three days preceding cataract operations eliminates all possibility of suppuration in the organ, 1, by killing all microorganisms on the conjunctiva, and, 2, by causing the formation in the interior of the eye of antitoxic bodies, preventing the action of any germs which might have gained an entrance. Subconjunctival injections of the same solution constitute the most effective measure available to arrest or cure cases of chronic iritis or iridochorioiditis and, in particular, cases of atrophic chorioretinitis, for which hitherto no good remedy has been at hand.

PRESSE MÉDICALE

July 27, 1912.

1. F. JEANSELM: Cytology and Serology of Leprosy.
2. L. BAUMEL: Osseous Dystrophy.
- July 31, 1912.
3. TREFFIER: Transfusion of Blood.
4. WITOLD ORLOVSKI: Exploration of Liver by Percussion.

2. **Osseous Dystrophy.**—Baumel shows that this is not an achondroplasia nor rickets nor osteomalacia, although it resembles them all, but is characterized by lesions of the periosteal ossification in the cranial bones and the middle part of the clavicle. The teeth are defective and irregular. There may be nanism, deformations of the hands, and fractures of the extremities. The etiology is obscure; the x ray has shown enlargement of the sella turcica. Baumel accuses the nervous system and points to an alcoholic heredity in one of his cases. He has tried calcium phosphate, and advocates pituitary extract and the continuous current to the affected bones.

4. **Percussing the Liver.**—Orlovski has used this method in over 500 patients. Profound silence is needed in the room and the procedure begins by the administration of an enema of some eighteen ounces of water to empty the bowel. He follows the right mammillary line and the linea alba. Percussion is as valuable as palpation. If the right kidney is floating, it must be replaced before trying percussion. If there is dullness over the right hypochondriac region, the intestine should be filled slightly with air. If the lower border of the liver is soft or sharp, or if the adjoining coils of intestine are swollen, percussion determines the position of the lower border somewhat nearer to the hypochondrium than it is in reality. The greater the consistence of the organ, the more accurate are the results of percussion.

SEMAINE MEDICALE

August 7, 1912.

- G. MARINESCO: Respiratory Hysteria with Contracture of Vocal Cords.

Respiratory Hysteria.—Marinesco, realizing how the study of hysteria bristles with difficulties, makes a detailed and profound study of a case of respiratory neuromimesis that came under his care. If the preponderating rôle of suggestion is taken into consideration, he thinks this unconscious suggestion frequently is carried out by means of involuntary reactions. This is why the hysteric subject under suggestion does not fully understand the cause of her troubles and believes in the reality of the accidents to which she is liable. In the case under discussion the hysteria affected the respiratory function of the vocal cords, and contraction

was noted by means of the laryngoscope; this contraction, according to the writer, belongs to the phenomena not voluntarily realizable by the patient.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT.

June 6, 1912.

1. E. VON ROMBERG: Treatment of Chronic Nephritis.
2. CHLENHUTH, J. MULZER, MAX KOCH: Histopathological Changes in Experimental Syphilis of Rabbits.
3. H. JANS: Tuberculosis Vaccination with Dead Bacilli Enclosed in Pouches Made from Reed.
4. STEPHAN SZÉCSLI: Some Modern Romanovsky Blood Stains.
5. GUSTAV SINGER and GUIDO HOLZNEF: Objective Symptoms of Colapsus.
6. PAUL HARTWICH: Relation of Cirrhosis of Liver and Tumor of Spleen (*To be concluded*).
7. Y. NUKADO: Increased Urine Secretion in Crisis of Pneumonia.
8. J. LOEWY: Influence of Iodtropin upon Arteriosclerotic Troubles.
9. RICHARD MÜHSAM: Substitution of Urethra by Saphenous Vein.
10. A. VON PLAUT: Infantile Diatheses and Great Alpine Elevations.
11. ERNST MÜLLER: Use of Raw, Hard Coal Tar in Diseases of the Skin.
12. BERGER and M. SCHWAB: Therapeutical Effect of Röntgen Rays in Struma and Basedow's Disease.
13. VON DRIGALSKI: Prophylaxis in Scarlet Fever.
14. PRUHL: Robert Koch as Investigator (*To be concluded*).
15. MAINLOFF: With Naproxon in Russia (*Conclusion*).

June 13, 1912.

16. A. BIER: Improvement of Treatment of Surgical Tuberculosis with Staungens Hyperemia.
17. H. KIONKA: Treatment with Radium Emanation.
18. H. SCHIDOVSKY and W. REIM: Practical Use of Acid Agglutination of Bacteria.
19. ROBERT FEULEN: Technique of Treatment of Phthisis with Artificial Pneumothorax.
20. ARNO E. LAMPE: Blood Changes in Basedow's Disease According to Latest Researches.
21. D. B. KAROFF: Source of Error in Estimation of Quantity of Feces.
22. PAUL HARTWICH: Relation of Cirrhosis of Liver and Tumor of Spleen (*Concluded*).
23. LYNDEN SUSENTHUT: Surgical Treatment of Prostatic Atrophy.
24. ALBERT SEIFEL: Ascending Infection of the Urinary Passages in Newly Married Women.
25. RISSMANN: Intramuscular Injections of Ringer's Solution in Tokemia, Especially in Toxicodermas of Women in Pregnancy and Labor.
26. OSKAR JAEGER: Reduction of Pain in Labor.
27. ISAKOWITZ: Diseases of Eye from Binding by Sun.
28. JULIUS GORBERG: Latent Lues.
29. HENRY HUGHES: Latest Progress in Inhalation Therapeutics.
30. JOSEF SELLE: Importance of Vaccination Therapeutics in Urology; Remarks on Reiter's Communication Which Appeared in No. 18 of the *Wochenschrift*. HANS REITER: Answer to These Remarks.
31. EBERMAYER: Medical Law.
32. W. HABERLING: Did the Ancient Egyptians Know of Sun Baths?
- June 20, 1912.
33. H. COENEN: Gangrene of Lungs after Extensive Resection of Stomach and Duodenum.
34. PAUL MANASSE: Chronic Suppuration of Middle Ear and Cholesteatoma.
35. WECHSELMANN: Anaphylaxis after Repeated Intravenous Injections of Salvarsan.
36. A. L. GRUNFELD: Neosalvarsan.
37. ERNST KUNZE: Treatment of Climacteric Hemorrhages with Röntgen Rays.
38. H. BRAUN and HUSLER: New Technique for Examination of Fluid from Lumbar Puncture.
39. MAX KÄTHER: Diagnosis of Organic Diseases of Brain.
40. ERICH KLOSE: Intermittent Hourglass Stomach.
41. ALBERT E. STEIN: Medical Photographic and Cinematographical Views.
42. W. ROERDANZ: Examination of Injection Syringes.
43. MUGDAN: Social Status of Nurses and Propositions for Improvement.
44. EBERMAYER: Medical Law.
45. PRUHL: Robert Koch as Investigator (*Concluded*).
46. GUSTAV FRISCH: Mr. Galton as Defender of Darwin. Answer to a Communication in No. 17 of the *Wochenschrift*.
47. FRANZ BARNAHIZI: Alfred Pribram.
48. W. WALDEYER: Schiller's Skull.

June 27, 1912.

49. L. BACH: Pathology and Therapeutics of Glaucoma.
50. R. VON MASCHKELO and VESPERFERN: Histological and Experimental Investigations into Death from Strychnine.
51. MAX ROSENBERG: Serological Diagnosis of Carcinoma.
52. RUDOLF KRAUS and GUSTAV HOLLER: Biologic of Tubercle Bacilli in Peritoneum of Normal and Tuberculous Guinea-pigs.
53. OSSIAN SCHULMANN: Early Symptoms and Pathogenesis of Pernicious Anemia.
54. T. A. MAASS: Pharmacological Examination of Aleudin. New Hypnotic and Sedative.
55. GORBERG: Improvement of Aspirin. Soluble Aspirin.
56. G. ZUELLER: Collapse Effect of Hotwater.
57. W. KRAUSS and F. SAUERBACH: Labiomedial Eidermoid of Frontal Region of Brain. Rupture into Orbit; Extirpation; Cure.
58. ERICH EBERSTEIN: Gout Tophi on Eyelids.
59. JOHANNES BIERERFELD: New Pharmaceutical Remedies of Past Year.
60. P. MISERKINITSKY: New Formulations of Radium Emanation.
61. ENGLEN: Local High Frequency Treatment.
62. A. THEILHABER: Doctrine of Spontaneous Cure of Carcinoma.

63. ZERNIK: New Remedies and Patent Medicines.
64. M. SCHALL: Improvements in Medicine, Public Health, and Nursing.
65. H. F. STELZNER: Female Physicians.

26. Reduction of Pain in Labor.—Jaeger favors the combination of pantopon and scopolamine in labor pains. These pains will be very much diminished, and the remedy is entirely without danger for mother or infant if the following rules for doses are observed: The maximum dose of pantopon should not exceed 0.03 gramme, the average dose would be 0.02 pantopon and 0.0003 scopolamine hydrobromide, both given in one subcutaneous injection. The best places for the injection are the intracavicular spaces, where absorption takes place very quickly. The effect will be usually noted after fifteen or thirty minutes and will remain about three or five hours or even longer. If the effect of this injection is unsatisfactory, a second injection should be given, but only of half the amount; that is, 0.01 pantopon and 0.00015 scopolamine. Jaeger bases his observation upon two hundred cases.

50. Histological and Experimental Investigations of Death from Salvarsan.—Von Marschalkó and Veszprémi observe that the so called cases of encephalic death after salvarsan infusion are caused through the toxic effect of the remedy itself, as similar results can be produced in animals through intravenous injections of salvarsan, in which intoxications the clinical picture, as well as the pathological changes, are absolutely identical with those found in necropsies on man. In these intoxications we do not find real inflammation of the brain, but multiple hemorrhages produced through hyperemia, stasis, and thrombosis; unconsciousness, epileptiform fits, in short, all clinical symptoms can be explained through these hemorrhages. An important change in the nerve substance is absolutely missing. The so called water error (*Wasserfehler*) does not play a rôle in these intoxications, as the toxicity of salvarsan is not influenced in animal experimentation through very high doses of endotoxines from water bacteria. The intoxications seem to be produced through a too high and carelessly given dose, especially as the limit of the *dosis tolerata* of salvarsan is much lower in animals than was at first announced. From this the authors conclude that we should change to smaller, more carefully given doses, especially in the first intravenous infusions. This can be easily done, as we shall have the same curative effect with smaller doses more often repeated, while small doses will not carry with them the danger of intoxication found in one large dose, or repeated large doses.

52. Breaking Down Tubercle Bacilli in Peritoneum of Normal and Tuberculous Guinea-pigs.—Kraus and Hofer have made interesting experiments which prove the parallelism of tuberculosis with other infectious diseases; that is, the tuberculous organism produces bacteriolytic bodies which are especially solvent for tubercle bacilli. These bacteriolytic bodies can be shown in the serum, but their nature has not been determined. From this fact, furthermore, can be explained spontaneous cure in tuberculosis, as well as certain immunity phenomena.

54. Pharmacological Examination of Aleudrin, a New Hypnotic and Sedative.—Maass states

that he has found in aleudrin a new narcotic and sedative which will prove of great value. Aleudrin is the carbamin acid ester of alpha alpha dichlorisopropyl alcohol; it is a white, tasteless substance, easily soluble in alcohol, benzol, chloroform, ether, glycerin, and fatty oils; in water it is very hard to dissolve. A two per cent. aleudrin solution can be produced with water to which is added two per cent. glycerin and then heated. The dose is given as 0.5 gramme, which can be increased to 1.0 gramme, and even up to 3.0 grammes, without dangerous after effects.

55. An Improvement of Aspirin, Soluble Aspirin.—Görges describes aspirin soluble as the potassium salt of aspirin which, water free, contains about ninety per cent. of aspirin and ten per cent. of potassium. It is a white powder, easily soluble in water. To increase this solubility 0.15 gramme starch is added to each tablet, which contains 0.5 soluble aspirin. The author is very much in favor of this new preparation.

ZENTRALBLATT FÜR GYNÄKOLOGIE.

July 6, 1912.

1. P. ZWEIFEL: Prevention of Purulent Ophthalmia in Newborn.
2. G. WALCHER: Technique of Vesical Antiseptization.
3. KUNTZSCH: Delivery by Means of Vacuum Cup.
4. L. M. BOSSI: Gynecological Prophylaxis in Insane.

July 13, 1912.

5. R. FRANZ: Dermatoses of Pregnancy Cured by Blood Serum from Umbilical Cord.
6. C. A. WAGNER: Operation for Extensive Prolapse of Gentiana.
7. L. GUSAKOFF: Retrocervical and Extraperitoneal Echinococcus Cyst as Obstruction to Spontaneous Delivery.
8. P. FJALLA: Pantopon Scopolamine Narcosis in Gynecological Operations.

1. Prevention of Purulent Ophthalmia in the Newborn.—Zweifel again calls attention to the great value of prophylaxis in regard to infection of the eyes following childbirth. In order to determine the best solution for use by the midwives, one that would not cause damage if carelessly used, the author experimented on the web of frogs' feet with solutions of silver nitrate, silver acetate, argentin, protargol, and silver acetate, followed by salt solution and "sophol." Of these the silver acetate is recommended, as not more than a one per cent. solution can be made at ordinary temperatures. It also does not become concentrated at the usual temperature and can be preserved indefinitely. In experimenting with silver nitrate it was found that as a result of evaporation the solution increased in the course of five months from a one per cent. to an eight per cent. concentration. In an open bottle it increased from one to three per cent. within two days.

4. Gynecological Prophylaxis in the Insane.—Bossi is confident that many women who are considered insane, can be cured by gynecological treatment; also, that by means of prophylactic local treatment many may be saved from the insane asylum. The author calls attention to the fact that severe gynecological lesions need not be present, but that comparatively slight disturbances may be sufficient to bring about psychic changes.

5. Dermatoses of Pregnancy Cured by Blood Serum.—Franz holds that the intoxications of pregnancy are due to poisoning by products of albuminous decomposition which appear in the blood. As some investigators have found that the fresh serum of man and some animals has the power to inhibit the poisonous action of the extract from

fresh placenta, attempts have been made to heal eclampsia by the intravenous injection of horse serum. Others have tried the same treatment on the dermatoses. Franz reports a case of erythema multiforme exsudativum occurring in a pregnant woman, that was cured by the intramuscular injection of serum obtained from blood of the umbilical cord.

8. Pantopon-Scopolamine Narcosis in Gynecological Operations.—Putjatina gives in brief outline a review of fifty cases; he believes that vomiting is less common, and that the amount of ether or chloroform necessary for narcosis is distinctly decreased.

RIFORMA MEDICA.

July 13, 1912.

1. E. TEDeschi: Circulatory Perturbations in Tuberculous Patients Caused by Muscular Work.
2. G. LIBERTINI: Measuring Pancreatic Secretion by Fecal Amylase.
3. A. CIPOLLINA: Personal Reaction Capable of Demonstrating Excess of Hydrochloric Acid in the Gastric Juice.
4. C. PAVESIO: Sarcoma of Uterus.
5. E. MAGNI: Advantages of Inguinal Method of Radical Cure of Strangulated Inguinocrural Hernia.

August 3, 1912.

6. T. CARPENTIER: Aneurysms of Sinuses of Valsalva.
7. C. FATHALLAH: Acute Meningitis Cured. Hypertrophic Chorioid Acrocyonosis.

ROUSSKY VRATCH.

May 16, 1912.

1. V. PH. ORLOVSKY: Examination of Liver by Percussion.
2. E. N. MALUTIN: Salvarsan and Deafness.
3. N. I. LEPORSKY: Pathogenesis of Kernig's Sign in Tetanus and Aneurysm of Cerebral Artery.
4. PH. D. RUMJANTSEFF: Nephritis in Scarlet Fever.
5. V. JA. GUSEFF: Presentation and Prolapse of Cord.
6. V. S. LEVIT: Closing of Duodenum Following Extensive Esection of Stomach.
7. N. M. LAVJAGIN: Methods of Chemicoalgebraic Investigations.

May 26, 1912.

8. A. I. ILIN: Ascending Infection of Kidneys Following Implantation of Ureters into Colon; Means of Prevention by Vaccination and Bacterial Therapy.

9. A. N. SOLOVJEFF: Action of Neosalvarsan.

10. U. A. FINKELSTEIN: Experimental Syphilis in Rabbits.

11. V. I. LISANSKY: Pathology of Upper Proximal End of Large Intestine.

12. V. ZAVADSKY: Action of Gastric Secretion on Blood in Pretended Feeding.

13. M. O. ROMM and A. I. BALASOFF: Specific Causes of Epithelial Dysentery.

1. Percussion of the Liver.—See this JOURNAL, page 447.

2. Salvarsan and Deafness.—Malutin reports three cases of syphilis treated with salvarsan, in which deafness followed the injection. He cautions against the employment of salvarsan in individuals with defective hearing.

3. Kernig's Sign.—Leporsky describes two cases of tetanus and one of aneurysm of a cerebral artery, in which there was no meningeal involvement, yet Kernig's sign was present. Its pathogenesis is still obscure and requires further elucidation.

5. Prolapse of the Cord.—Guseff presents the following conclusions based on observations on 353 cases: Prolapse of the cord is favored by a contracted pelvis, premature labor, premature rupture of the membranes, hydramnion, multiple pregnancies, a long cord, marginal presentation of the placenta, unusually roomy pelvis, and prolapse of fetal extremities. Treatment comprises: 1. Efforts to replace the cord by hand or instruments, which are not recommended; 2, with sufficient dilatation, labor should be terminated rapidly by version or forceps;

3, if the os is not sufficiently dilated Cæsarian section should be performed.

8. Prevention of Infection of the Kidneys.—Il'in emphasizes the frequency of ascending pyelitis and pyelonephritis following implantation of the ureters into the bowel, and reports his results with bacterin therapy in eleven cases. He employed *Bacillus coli* bacterins after the usual drugs and diet failed. In two cases the infection was entirely relieved; in one, there was considerable improvement, and in one, the treatment was discontinued on account of an acute attack of pyelitis. (No mention is made of the other seven cases.) In view of the desirability of preventing infection, the author performed implantation of the ureters into the bowels of fourteen dogs, seven unilateral and seven bilateral. Before the operation, the animals received a mixture of *Bacillus coli* and polyvalent staphylococci bacterins. Of the seven animals with bilateral implantation, two died on the third day from peritonitis and the remaining five escaped infection.

9. Neosalvarsan.—Solovjeff, basing his conclusions on sixty-seven cases, with 105 injections, is of the opinion that neosalvarsan is a decided improvement over salvarsan, possessing the following advantages: 1. It is readily soluble in distilled water, thus eliminating the troublesome procedure of the older method; 2, it is neutral in reaction and requires no neutralization; 3, it acts in the same quantities as salvarsan, and the dose may be safely increased one and one half; 4, it does not produce local irritation of the tissues, and therefore is better adapted for intramuscular injection.

10. Experimental Syphilis in Rabbits.—Finkelstein succeeded in inoculating twenty-four out of forty-five rabbits with syphilitic virus, using the testicle as the site of inoculation. He reproduced all the stages of syphilis, closely resembling those in man. He found that the syphilitic virus increases in toxicity by passage through rabbits, and that the serum of syphilitic rabbits contains lues reagin, but no agglutinins or curative substances. The facility of reproducing syphilis in rabbits would make possible further investigation of different phases of syphilis, such as hereditary transmission, study of new antisyphilitic remedies, and the production of a strong virus in pure culture.

12. Effect of Loss of Gastric Juice on the Blood.—Zavadsky produced an esophageal and gastric fistula in a dog and determined the effect of abstraction of gastric juice, following pretended feeding, on the chlorine contents of the blood. He found that the loss of gastric juice produces thickening of the blood plasma and loss of chlorine in the red cells.

AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

July, 1912.

1. A. J. RONGY: Use of Field Serum to Cause Onset of Labor.
2. A. B. DAVIS: Modern Methods in Cesarean Section.
3. ROSS McPHERSON: Indications for Abdominal Cesarean Section.
4. PALMER FINLEY: Multigravida without Cesarean.
5. L. J. LADINSKI and L. SELL: Prolapsed Complicating Delivery of Monstrosity.
6. W. H. ALLPORT: Some Seventeenth Century Obstetricians and Their Books.
7. B. B. WECHSLER: Umbilical Clamp.
8. J. G. WILLIAMS: Diagnosis of Fractures about Elbow Joint in Children.
9. I. LOURIA: Acute Inflation of the Stomach Complicating Pneumonia in Child.

June, 1912.

2. **Modern Methods in Cæsarean Section.**—Davis discusses the advantages of this operation when compared with other obstetrical procedures, such as high forceps, accouchement forcé, etc. He then gives in detail the technique followed by him in the operation, laying stress upon the advantages of a small abdominal opening in the mid line wholly above the umbilicus. The author asserts that such an incision passes through no important structures in the mid line, but opens the abdomen at a point where the tissues are normally thin and elastic late in pregnancy. The small wound, from three to four inches long, is ample for the delivery of the child and all necessary manipulations, but it does not allow the ready escape or undue manipulation and exposure of the abdominal contents. After the operation there is no possibility of adhesive union between the wound in the abdomen and that in the uterus. Hernia is less liable to occur in the high abdominal scar, because it is above the location of greatest strain in the abdominal wall. The author has never seen hernia following this method of operating.

3. **Indications for Abdominal Cæsarean Section.**—McPherson emphasizes the importance of adopting this operation early and not waiting till other methods have been tried and have failed, and the patient is exhausted. His conclusions are: 1. Cæsarean section is the preferred method of delivery under conditions where a viable child may not be delivered by normal ways and provided that the mother can bear the surgical risk. 2. The mortality statistics show that early examination, freedom from previous manipulation and from other efforts to deliver, are important points for the best results. 3. The fact that the patient has been some time in labor need not preclude the efficiency of the operation. 4. Conditions should be satisfactory for this operation, as it requires a particular technique with skilled assistants for the best results. 5. The important points are: High incision; nondelivery of the uterus from the abdominal cavity; absence of any method of constriction to prevent bleeding, as such is unnecessary. Given the proper conditions, and eliminating those patients who would die under any method of treatment, the mortality may not exceed two per cent.

4. **Menstruation without Ovaries.**—Findley reports a case of a woman of thirty years, who continued to menstruate after both ovaries had been removed. The explanation is that adhesions had formed, binding the omentum and other pelvic structures to the uterus and in this way continued the vascular connections with the uterus, this in turn acting as sufficient stimulus to bring on a menstrual flow.

AMERICAN MEDICINE.

May, 1912.

1. A. W. COLCORD: Diphtheria, Epidemics and Public School.
2. J. T. AINSIE WALKER: Inefficient Disinfectants.
3. HUGH F. ROYER: Sphygmometer. Place in Diagnosis. Significance of Blood Pressure.
4. OSCAR ROTTER: Attempt to Cope with Economic Problem within Practice of Medicine.
5. EDWIN R. BENNETT: Place of Antitoxine and Intubation in Treatment of Diphtheria.
6. HENRY W. FRAUENTHAL: Experience in Wreck of Titanic.
7. LOUIS C. AGER: Achondroplasia.
8. J. L. MURDOCK: Treatment of Measles and Scarlet Fever.
9. G. R. WILLIAMS: Permanent Mounts of Microscopic Preparations.

10. BROOKS H. WELLS: Repair of Injuries to Pelvic Outlet.
11. S. MARK: Pyloric Due to Faulty Position and Presentation.
12. HERMAN J. BOLDT: Treatment of Abortion in Presence of Fever.
13. SAMUEL W. BANDLER: Cæsarean Section.
14. A. J. ROUGY: Four Interesting Obstetrical Cases.
15. E. S. GOODRUE: Altitudes.
16. FELIX VON OFFERTZ: Abyssinian Superstition in Gynecology.
17. ARNOLD BRAY: Visual Memory.
18. LUCETTA MOORE: Dispensary Patient.
19. BEVERLY ROBINSON: Appendicitis and Best Time to Operate.

4. **An Attempt to Cope with the Economic Problem.**—Rotter treats of the various conditions that tend to make the general practitioner's lot anything but a bed of roses, and shows the elements at work that militate against the acquirement of a competency, and, in many instances, make existence barely possible. The fact that the members of the profession are hard worked and underpaid is emphasized. The abuse of dispensary charity by a host of people who are able to pay for services, and who would be willing to do so were they not supplied, without money, without price, and without question, at many of the institutions created and supported for the benefit of the really poor, is clearly set forth. The activity of the health board is encroaching on the preserves of the physicians, by taking away nearly all cases of vaccination, by opening up dispensaries, and sending its physicians and nurses to the bedside of patients without taking any more trouble to limit the public charity to the really poor than do the hospitals or dispensaries. The evils of lodge or contract practice are squarely put up to the profession, who are urged either to refuse it or engage in it on terms of fair and sufficient remuneration. The competition with various unqualified practitioners, who are unable to make a diagnosis, and who use freak nonmedical or nonsurgical methods, is dwelt upon. In this class fall the hydropaths, neuropaths, Christian Science healers, dietists, fasters, masseurs under the cloak of osteopaths, etc. Counter prescribing is touched upon, but this can be easily abolished, as the interest of physician and pharmacist are in many respects identical. Finally, the writer deplores the absence of a uniform basis of reciprocity or mutual recognition of State licenses or medical college diplomas conferring the right to practise medicine between the different States. To pass a State board examination one must undergo a repetition of his college examination, an impossibility to one who has practised for some years, without months of study. His suggestion is that the college diploma be accepted as proof of a systematic theoretic knowledge, and that the examination be a clinical one.

ANNALS OF OPHTHALMOLOGY.

July, 1912.

1. A. ELSCHNIG: Simple Senile Cataract Extraction with Incision of Root of Iris.
2. ARTHUR J. BEDELL: Another Case of Chloroma.
3. OSCAR WILKINSON: Early Symptoms and Ocular Findings in Cerebral Tumor.
4. EDWARD A. SHUMWAY: Secondary Glaucoma in Interstitial Keratitis.
5. F. DEUTSCHMANN: Sympathetic Ophthalmia.
6. W. H. LUENDE: Congenital Absence of Both Lower Puncta Lifelong (Double) Dacryocystitis Apparent Cure from Dacrycystorrhinostomy.
7. W. M. C. BRYAN: Submucous Dacrycystorrhinostomy for Persistent Dacryocystitis.

7. **Submucous Dacrycystorrhinostomy.**—Bryan describes the following operation: A vertical incision was made through the mucous membrane of the nose in front of a prominence of the lateral

nasal wall, just anterior to the nasal side of the median wall of the saccus lacrymalis, and the mucous membrane was elevated from the bone to a line just behind the region of the fossa saci lacrymalis, or just in front of the anterior end of the attachment of the middle turbinate, extending up to the level of the lacrymal sac. This mucous membrane was cut free above and turned down over the lower turbinate. The median wall of the fossa saci lacrymalis was then removed under the guidance of the eye by sharp curettes and punch forceps. After the removal of the bone the membranous wall was cut away. The upper posterior angle of the mucous flap was removed to correspond to the opening made, the rest replaced and secured in position. Healing was prompt and resultant drainage proved to be good.

CLEVELAND MEDICAL JOURNAL.

July, 1912.

1. J. L. BUBIS: Hemorrhage from Premature Separation of Normally Situated Placenta.
2. L. A. POMEROY: Separation of Lower Epiphysis of Fibula.
3. A. J. SKEEL: Cleveland's Maternity Dispensary System.
4. I. A. TRIPP: Traumatic Cataract of Unusual Origin.
5. J. B. MCGEE: Present Status of Therapeutics.
6. W. T. MILLER: Syphilis in Pregnancy.
7. J. D. PILCHER: Some of the Later Advances in Pharmacology.

1. **Placental Hemorrhage.**—Bubis reviews the entire available literature of this condition, and from this material and four cases of his own he draws the following conclusions: 1. Statistics to date are still unsatisfactory, but with modern diagnosis and the greater interest in reporting cases they are becoming more accurate. 2. There is no disease which has a greater variety of causes. 3. Placental apoplexy, like placental infarct, is a cause of this complication of pregnancy and is not a disease. 4. The condition of the cervix is the guide to the treatment and prognosis. 5. Complications are numerous and dangerous. 6. Prophylaxis should be the watchword of both patient and physician. 7. The hospital is the best and safest place for the patient. 8. There is no routine treatment. Each case must be treated *per se*. 9. Transfusion is of acknowledged value. 10. The value of the Momborg belt is still questioned. 11. Pubiotomy, after preparation of the cervix, should be done if the child is living and the head engaged. 12. In concealed hemorrhage, with threatened shock due to increased intrauterine tension, release the liquor amnii slowly through a pin point opening and use the Kristeller method. 13. Most authors are in favor of using ergot. Bubis gives a bibliography of seventy-five references, which alone is of very considerable value to the student of this condition.

2. **Separation of Epiphysis of Fibula.**—Pomeroxy reports a case of this rare injury occurring in a girl of fourteen years, as the result of a fall on the inverted foot. Over the outer malleolus there was a circular area of edema about four cm. in diameter. All movements of the ankle caused slight pain. Some tenderness was felt over and just above the external malleolus. Pressing the tibia and fibula together in the upper third of the leg caused considerable pain just above the external malleolus. Immobilization in a pillow splint for one week, starch bandage for two, and adhesive plaster thereafter gave an excellent result.

6. **Syphilis in Pregnancy.**—Miller remarks that in every case within his knowledge in which

there has been undoubted syphilis of the fetus or placenta, the mother has given the Wassermann reaction. He believes, on this account, that it is highly probable that no woman gives birth to a syphilitic fetus without herself being subject to the disease. The burden of proof falls upon those who contend that she receives the disease from the fetus, but whether from fetus or husband she is nevertheless infected.

INTERNATIONAL JOURNAL OF SURGERY.

July, 1912.

1. W. PEARCE COUES: Acute Lymphangitis.
2. A. W. COLCORD: Fractures and Their Treatment (Concluded).
3. JAMES ALMORD DAY: Postoperative Complications and Their Treatment.
4. E. RODNEY FISKE: Case of Hydatidiform Cyst.
5. FRANK HENRY KNIGHT: Drainage of Abdominal Wounds.
6. R. H. NEWBLER: Safety Devices and Resulting Benefits.
7. J. H. TAYLOR: General Paresis and Importance of Early Diagnosis to Railway Surgeon.
8. D. W. KINGSBURY: Little versus Much Technique and Apparatus in Bone Surgery.

1. **Acute Lymphangitis.**—Coues has seen a number of cases of acute reticular lymphangitis in which no neighboring suppurative trouble was present and no atrium of infection demonstrated. The question as to whether in a given case the lymphangitis is "pure" or is secondary to, and attended by suppuration, deep or superficial, is important, though difficult. The leucocyte count may help, but the temperature is not of much value. *Tactus eruditus* and the history are of chief value. As a rule, the matted area in lymphangitis gives rise to a different feel than the induration over deep pus. It seems more in the skin; red areas appear and disappear at intervals. When in doubt as to fluctuation, one should incise into the seemingly fluctuating point, but never carry the incisions above the line of infection. Rest to the body and the part affected is essential in the treatment. Lymphangitis of the extremities should be treated as though a fracture were present, by splinting. Hot compresses may be used to improve the circulation and assist Nature in throwing off the infection. Simple cases almost invariably improve without incisions. Pyogenic infection is not a common complication in the primary form. Lymphatic glands enlarged as a result of lymphangitis, should never be incised.

2. **Treatment of Fractures.**—Colcord believes that excessively prolonged immobilization has been responsible for many bad results in fracture treatment. While no rules can be laid down for all fractures, massage of soft parts and mobilization of neighboring joints should be begun early, gently at first. In the ordinary Colles' fracture Colcord massages the forearm and hand and makes passive motion of the fingers from the start. Movements of the wrist are begun about the fourth day and continued daily, or on alternate days, during the whole treatment, full range of motion being attained in two or three weeks. In other fractures where bones are freely movable, greater caution is necessary, but there always comes a time when massage and passive motion may be used with safety and benefit, viz., when the bones are firmly united, but the soft parts have not fully recovered from stiffness, soreness, and swelling. Return of function will then be hastened by hot air (Bier's hyperemia) for twenty minutes, followed by twenty minutes of massage daily, especially in fractures near joints, with ankylosis. The most frequent cause of de-

layed union in Colcord's experience, is syphilis. The epitrochlear glands of every fracture patient should be examined, and if they are found enlarged and other evidences of syphilis present, appropriate treatment given from the start. Tuberculous fracture cases should be given fresh air treatment, anemic ones iron and arsenic, etc. In the many patients who will not endure the Sayre adhesive bandage in fractured clavicle, the Du Puy woven wire splint should be tried. Colcord treats compound fractures of the fingers and hand with a constant wet dressing of Ochsner's fluid (alcohol, one part; saturated boric acid solution, three parts) for several days. The Du Puy splint is also convenient in these cases.

JOURNAL OF BIOLOGICAL CHEMISTRY.

July, 1912.

1. T. BRAILS福德 ROBERTSON: Extraction of Substance from SpERM of Sea Urchin (*Strongylocentrotus purpuratus*) which will Fertilize Eggs of that Species.
2. ARTHUR I. KENDALL and CHESTER J. FARMER: Bacterial Metabolism.
3. T. BRAILS福德 ROBERTSON: Refractivity of Products of Hydrolysis of Casein, and a Rapid Method of Determining Relative Activity of Trypsin Solutions.
4. WALTER JONES: Formation of Guanylic Acid from Yeast Nucleic Acid.
5. EDWARD H. GOODMAN: Excretion of Iron in Urine in Pneumonia.
6. E. H. WALTERS: Studies in Action of Trypsin: II. (a) Influence of Products of Hydrolysis upon Rate of Hydrolysis of Casein by Trypsin; (b) Autohydrolysis of Caseinates.
7. FREDERIC FENGER: Presence of Active Principles in Thyroid and Suprarenal Glands before and after Birth.
8. ROBERTS BANKS GIBSON: Nature of So Called Artificial Globulin.
9. R. C. COLLISON: Inorganic Phosphorus in Plant Substances.
10. WILLIAM C. ROSE: Experimental Studies on Creatine and Creatinine. IV. Estimation of Creatine in Presence of Sugar.
11. THOMAS B. OSBORNE and LAFAYETTE B. MENDITT: Feeding Experiments with Fat Free Food Mixtures.
12. CARL O. JOHNS: Researches on Purins. On 2-oxo-6, 8, 9-trimethylpurin, 2-oxo-6, 9-dimethylpurin, and 2-oxo-8, 9-dimethylpurin.
13. R. J. ANDERSON: Phytin and Pyrophosphoric Acid Esters of Inosite.
14. FRANK P. UNDERHILL: Influence of Sodium Tartrate upon Elimination of Certain Urinary Constituents during Phlorrhizin Diabets.
15. P. A. LEVEY and DONALD D. VAN SLYKE: Picolonates of Mono aminoacids.
16. OTTO FOLIN and W. DENIS: Protein Metabolism from Stand-point of Blood and Tissue Analysis.

6. **Excretion of Iron in Pneumonia.**—Goodman observes that the amount of iron excreted with the urine has been found to be decreased in chlorosis as well as slightly in catarrhal jaundice, and to be increased in pernicious anemia, leucemia, nephritis (parenchymatous form especially), malaria, gout, gastric cancer, fever in general, typhoid fever, erysipelas, cholelithiasis, hepatic cirrhosis, and chronic alcoholism. In four cases of pneumonia Goodman found the urinary iron excretion to be diminished during the height of the disease and increased at the crisis or during the first succeeding day. These variations correspond, respectively, to a segregation of enormous numbers of erythrocytes in the lungs in the stage of hepatization, and to autolysis of the exudate, with liberation of iron pigment from the red cells, during the stage of resolution.

8. **Active Principles in Thyroid and Adrenals before and after Birth.**—Fenger found by a study conducted in cattle that both the thyroid and adrenals of the fetus contain active principles within a few weeks after conception. The epinephrine in the adrenals seemed to be present in larger and more uniform proportions than the iodine in the thyroids. The latter did not seem to have any definite sex relation, whereas the quantities of epinephrine in the adrenals appeared to be

slightly greater throughout in the female than in the male gland. Weekly analyses of the thyroid glands of sheep and hogs showed, in addition to decided individual variations in the amount of iodine present, a relationship between the iodine in the glands of the pregnant animals and those of the corresponding fetuses. While the thyroid does not materially enlarge in pregnancy in the sheep and hog, the iodine content was in some instances found higher than in nonpregnant animals. An estimation of the diastatic power of the desiccated pancreas of fetuses was made for purposes of comparison with the condition of the thyroid before birth. The pancreas from full grown hogs showed a diastatic power 140 times greater than the fetal pancreas, whereas the thyroids from pregnant hogs contained only from one half to one third more iodine than the corresponding fetuses. In view of these findings, and bearing in mind that hepatic and renal activities, different from the secretory functions of the digestive organs, are established at an early period of intrauterine life, Fenger believes it reasonable by analogy to assume that both the thyroid and adrenals of the fetus take a distinct and active part in the development of the unborn animal.

JOURNAL OF INFECTIOUS DISEASES.

July, 1912.

1. M. C. SCHROEDER: Bacteriological and Sanitary Condition of Milk Supply of New York.
2. E. O. JORDAN and E. E. IRONS: Rockford (Ill.) Typhoid Epidemic.
3. J. A. KOLMER: Diphtheria Bacilli with Special Reference to Complement Fixation Reactions.
4. J. A. KOLMER: Bacteriology of Diphtheria.
5. A. F. HESO: Obtaining Cultures from Duodenum of Infants.
6. E. E. IRONS: Cutaneous Allergy in Gonococcal Infections.
7. E. C. ROSENOW: Toxic Substances Obtainable from Pneumococci.
8. E. R. HARDING and ZENO OSTENBERG: Endo's Medium; Differentiation of Bacilli of the Paratyphoid Group.
9. C. W. DUVAL and C. WELLMAN: Organisms Cultivated from Lesions of Human Leprosy, with Consideration of Their Etiological Significance.

1. **The Milk Supply of New York.**—Schroeder reports in detail the results of an extensive examination of the bacteriological and sanitary conditions of the milk supply of New York. The conclusions based upon an analysis of the work done are as follows: 1. The greater portion of the milk is delivered by the dairymen to the creameries with a low bacterial count, namely, less than 50,000 bacteria in the cubic centimetre. Out of 20,334 samples 14,389 were below the figure given. 2. The greater portion of milk sold in New York as raw milk, whether in cans or bottles, contains from 50,000 to 1,000,000 bacteria to the cubic centimetre and a considerable proportion contains over 1,000,000 bacteria to the cubic centimetre. 3. The pasteurization of milk by the holding process, though still leaving much to be desired, reduces greatly the number of bacteria, beside destroying any pathogenic varieties. 4. Ice is not sufficiently used to cool the milk. The average temperatures of the milk as delivered to the creameries by the dairymen, with the exception of the winter months, is still too high, and has an unfavorable influence upon the milk by aiding the growth of bacteria. 6. Greater care should be observed to obtain clean milk by sterilizing the cans and bottles. 7. The greater part of the milk sold is from thirty-six to forty-eight hours old, but a considerable portion is from seventy-two to ninety-six hours old, and some even more than

ninety-six hours. This is true of both raw and pasteurized milk.

3. **A Study of Diphtheria Bacilli.**—Kolmer undertook to determine the possibility of differentiating the various members of the diphtheria group of organisms by complement fixation reactions. Particularly to determine the relaxation of Hoffmann's bacillus, also termed the pseudodiphtheria bacillus, to the true diphtheria organism. His experiments show that complement fixation reactions with homologous antigens and immune sera of different types of diphtheria bacilli from a variety of clinical conditions, including a true Hoffmann's bacillus, indicate that these organisms are all related. The true Hoffmann's bacillus is probably an example of "mutation" and is able to transmit its new qualities from generation to generation.

4. **Bacteriology of Diphtheria.**—Kolmer presents very clearly the importance of bacteriological examinations and the necessity of cooperation between practitioners and public health officers. He also lays stress on the relative value of the different types of diphtheria bacilli as far as their virulence is concerned.

6. **Cutaneous Allergy in Gonococcal Infections.**—Irons found that the cutaneous inoculation of glycerin extracts of autolyzed gonococci in patients infected by the gonococcus produces a well defined reaction. This reaction is not usually obtained in normal persons, nor in those suffering from other infectious diseases. In persons recently infected, the reaction is negative and increases gradually during the course of the disease. In cases of severe infection, such as extensive arthritis, the reaction may be negative. Later, when improvement occurs, the reaction becomes positive. In general, a positive reaction is obtained in patients with gonococcal infection at some time during the course of the disease.

7. **Toxic Substances Obtainable from Pneumococci.**—Rosenow, in previous articles, has shown that the appearance and then the disappearance of toxic substances in suspensions in salt solution of pneumococci and other bacteria, when kept at 37° C., are associated with proteolysis. As a result of further experiments he believes that recovery from pneumococcus infections, the crisis in lobar pneumonia, for example, probably occurs when the toxic substances of the pneumococci have been digested beyond the toxic stage. The factors which seem to be concerned in this process are the autolytic ferment of the pneumococcus, the increased proteolytic power of the serum, the proteolytic action of the leucocytes, and the increased opsonic power of the serum, with a consequent greater phagocytosis.

9. **Organisms Cultivated from Lesions of Human Leprosy.**—Duval and Wellman report that from the leprous lesion two varieties of acid fast bacilli may be cultivated, one a chromogenic pleomorphic organism which grows readily upon the ordinary laboratory media after it has become accustomed to a saprophytic existence; the other, a moist, growing, nonchromogenic bacillus resembling, tinctorially, the tubercle bacillus, morphologically, the diphtheria bacillus, and multiplying only upon special media. The rôle played by the chromogenic bacillus in the production of leprosy is as yet un-

settled, although the authors are at present inclined to ascribe to it a minor if not a negligible part. The nonchromogenic strain, while behaving according to most of our notions regarding a pathogenic organism, has likewise not up to the present been conclusively proved to be the cause of leprosy. The writers, however, are impressed with the probability of such a rôle being eventually attributed to it and consider that it deserves more serious attention than any organism so far cultivated from the human leprous lesion.

JOURNAL OF MEDICAL RESEARCH.

July, 1912

1. H. T. KARSNER and R. M. PEARCE: Antibodies Produced by Various Constituents of Dog's Bile.
2. J. A. KOLMER: Comparative Study of Antibodies.
3. A. T. HENRICI: Primary Cancer of Lung.
4. L. S. MILNE and H. LE BARON PETERS: Atrophy of Pancreas after Occlusion of Pancreatic Duct.
5. L. S. MILNE and H. LE BARON PETERS: Glycolytic Power of Blood and Tissues in Normal and Diabetic Conditions.
6. M. FABYAN: Pathogenesis of *Bacillus abortus*, Bang.
7. C. G. PAGE: *Bacterium ozaenæ* (Abel); Fermentation Reaction with Eleven Sugars, Differential Diagnosis, and Use as Vaccine for Treatment.
8. G. S. GRAHAM: Ovarian Pregnancy.
9. A. C. ABBOTT: Induced Variations in Bacterial Products.
10. S. R. HAYTHORN: Metaplasia of Bronchial Epithelium.
11. P. G. WESTON and GRACE H. KENT: Determination of Cholesterol Content of Human Serum by Colorimetric Method.

3. **Primary Cancer of the Lung.**—Henrici reports in some detail a case occurring in his own practice, and comes to the following conclusions: 1. Primary carcinoma of the lung is a rare affection, occurring approximately once in 1,600 autopsies. 2. Probably the majority of so called cancers of the lung are in reality of bronchial origin. 3. Squamous celled cancers of the lung probably arise in the majority of cases from bronchial epithelium which has undergone a metaplasia.

4. **Atrophy of the Pancreas.**—Milne and Peters, as the result of their investigations concerning the changes in the pancreas after occlusion of the pancreatic duct, find the following conditions: In the atrophy of the pancreas which follows, some of the islands may persist unchanged, but for the most part the islands atrophy with the adjacent acini, or else assume appearances indistinguishable from the atrophying catarrhal acini. The great majority of the structures which persist after ligation of the pancreas are really the remnants of the atrophied acinous pancreatic tissue, and collectively represent a sufficient amount of pancreas tissue to prevent diabetes. They are cut off from any external secretion and lose their typical physical appearances, but do retain that special function of the pancreas which is indispensable to metabolism.

6. **Pathogenesis of *Bacillus abortus*, Bang.**—Fabyan very completely reviews work done with this organism, and reports as well a large amount of investigation done by himself. The chief peculiarity of this organism is that it is neither an aerobe nor an anaerobe, but lies in an intermediate group requiring a pressure of oxygen less than air. Methods of cultivation are discussed and the pathological conditions are presented. That this organism may be of importance in human conditions has been shown recently by Larson, who has reported some interesting results from applying the complement deviation tests to human serum. Fabyan's article is well illustrated with a number of plates.

7. ***Bacterium ozaenæ* (Abel).**—Page gives the fermentation reactions of this organism with eleven

sugars, and shows how these tests offer a means of distinguishing Abel's bacillus from the bacillus of Friedlander. He also states that autogenous vaccines made from this organism are giving encouraging results in cases of atrophic rhinitis.

9. **Induced Variations in Bacterial Functions.**—Abbott gives a brief report concerning the functional variations among definite species of bacteria, mentioning for example four strains of staphylococci that came from suppurative processes in man. These grow with more or less orange color and cause typical abscesses and fatal septicemia in rabbits after intravenous injection. They, nevertheless, differ in certain important features from one another and from the type organism as ordinarily described.

10. **Metaplasia of Bronchial Epithelium.**—Haythorn reports four instances in which the normal columnar cells in some of the bronchi have been replaced by stratified squamous epithelium. The examination is against the theory of direct metaplasia, but would indicate, to some extent, that the metaplastic cells are newly formed and come from the growing layer. It also appears that these cells are less highly specialized than the normal cells. It may be that when the bronchial mucosa is destroyed beyond the hope of specific regeneration, it seeks to protect itself with the best reparative cells it can produce in its exhausted state.

JOURNAL OF NERVOUS AND MENTAL DISEASE.

July, 1912.

1. W. N. BULLARD: New Era in Neurology.
2. SOLOMON C. FULLER: Alzheimer's Disease, Senium præcox (To be concluded).
3. CHARLES W. BURR: Angioneurotic Edema Cured after Administration of Salvarsan.

August, 1912.

4. FREDERICK TILNEY and J. FRANCIS MORRISON: Pseudobulbar Palsy.
5. SOLOMON C. FULLER: Alzheimer's Disease, Senium præcox (Concluded).

1. **New Era in Neurology.**—Bullard, in his presidential address to the American Neurological Association, remarks on the advances and changes in the realm of the specialty of neurology, the development of new problems, and a new era. With the passing of the great era of diagnosis and localization, neurologists must now turn to another class of questions, especially to those relating to many great subjects of basic importance to the public health. The early recognition and care of the insane, provisions for the mentally deficient, the prophylaxis of nervous breakdown, and many other questions are pressing for careful and scientific study. "The enlargement, the widening, and deepening of neurology to include psychiatry and its cognate subjects is necessary and is approaching."

3. **Angioneurotic Edema Cured after the Administration of Salvarsan.**—Burr calls particular attention to several interesting features in his report of a case of severe angioneurotic edema. The patient, a man of forty-eight years, with a syphilitic history, had suffered for several years from perioritis which was resistant to treatment. More recently he had had many attacks of angioneurotic edema which was apparently caused by the mercurial treatment, but which closer observation proved to be independent of it. One administration of salvarsan cured both the attacks of edema and the bone disease.

4. **Pseudobulbar Palsy, Clinically and Pathologically Considered.**—Tilney and Morrison present a statistical analysis of 173 recorded cases of pseudobulbar palsy, and discuss the various symptoms of this condition and those frequently associated with it. The authors also contribute the clinical histories of five additional cases. It is noted that the onset is sudden in eighty-eight per cent. of the cases, over sixty per cent. are associated with hemiplegia; in about fifty per cent. the symptoms first appear between the ages of forty and sixty years. Speech defects are among the most prominent symptoms. In fifty per cent. of the cases there was disturbances in emotional expression, in two per cent. it was absent, while in forty-eight per cent. it was not mentioned. Post mortem records were available in ninety-seven cases, and of these the lesions were of many different types, usually multiple, some cases having nine or more foci of disease scattered throughout the brain. The argument is made against the existence of any relationship between the optic thalamus and corpus striatum and the functions of emotional or mimetic expression, since the clinical histories could not be correlated with the pathological findings on that basis.

5. **Alzheimer's Disease, Senium præcox.**—Fuller contributes a very careful and complete report of a case of Alzheimer's disease, as well as abstracts of all of the cases so far recorded (thirteen in number), the first of which was published by Alzheimer in 1906. The disease is characterized clinically by a general mental weakening progressing toward dementia, which begins about middle life or a little later, developing slowly in some cases and fairly rapidly in others. Pathologically, gross focal lesions and arteriosclerosis are usually absent, though there is often some degree of cortical atrophy. Microscopically, the most striking features consist in the presence of large numbers of milium plaques, scattered throughout the cortex and sub-jacent white matter, and the occurrence of partially degenerated ganglion cells with a basketlike arrangement of the intracellular neurofibrils (Alzheimer's degeneration).

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL.

July, 1912.

1. CHARLES F. CRAIG: Parasitic Amebæ of Man, Relation to Disease.
2. WILLIAM SCHEPPENRELL: Tonsils and General Health.
3. P. J. O'KELLEY: What General Practitioner Should Know about Nose.
4. R. L. LYNN: Role of Ear as Complication to General Manifestation of Disease.

August, 1912.

5. G. I. ANONYM: Gonorrea.
6. E. S. GOODHUE: Pellagra in Hawaii.
7. CROFTON WELLMAN: Principles of Tropical Medicine.
8. JOSEPH HOLT: Problems in Education, with Applied Science. Only Defense against Pestilence.
9. SOLON G. WILSON: Summer Diarrheas.
10. HOMER DUFFY: Chronic Laryngeal Stenosis: Treatment by Specially Designed Tubes.

1. **Parasitic Amebæ of Man and Their Relation to Disease.**—Craig gives a summary of our present knowledge of the parasitic amebæ of man, describing the species, the mode of cultivation, and their causal relation to disease. He finds that in the human subject there are at least three species of entamebas, of which two are the causal agents of amebic dysentery, while the third, entirely harmless, is frequently found in healthy persons, and in those who have other diseases. The determination

of the species of ameba present is important for the diagnosis of amebic dysentery, but not otherwise justifiable. The importance of this latter is emphasized when we call to mind the fact that in the tropics and subtropics at least thirty to fifty per cent. of healthy individuals show harmless *Entamoeba coli* in the feces. While it is not always possible for the practitioner to differentiate *Entamoeba coli* from the pathogenic species, there is generally some one competent to do this in most localities and when such facilities are available, failure to make use of them makes one derelict in duty. It is possible to become familiar with the morphology of *Entamoeba coli* by first administering a saline cathartic and then studying the amebas found in the stools of the healthy. The writer's observations have made it clear that amebic dysentery is due to strictly parasitic species, and that disinfection of the feces of dysenteric patients is absolutely necessary to prevent the infection from spreading. Neglect of this precaution has been frequently observed, infection being spread by the encysted stages of the entamebas reaching food and water.

5. **Gangosa.**—Angeny defines this disease as one characterized by destructive ulcerations of the oral, nasal, or pharyngeal mucous membrane, of the skin surfaces of the body, and, more rarely, the osseous tissues may be involved. This disease has been prevalent in Guam and several other islands of the Mariana group for more than a century. Several theories have been proffered as to the cause of this disease, the most careful investigations by numerous competent medical men, however, have failed to reveal any bacterium or other organism as a causal agent. *Treponema pallidum* has not been found. Histological study of the lesions have proved fruitless. The theory that gangosa is a distinct entity has been reached by exclusion, as it resembles no other known disease. The theory that gangosa is a tertiary manifestation of yaws, although among the first to be advanced, is weakened by the fact that a tertiary stage of yaws has not been clearly established, and further because some few gangosa patients deny ever having had yaws. The theory that gangosa is hereditary syphilis owns the most adherents, but the disease presents a number of features which are not in accord with this diagnosis. For twelve years or more, gangosa has been under close observation. During that time no case of primary or secondary syphilis has been seen in any native. There is no evidence of transmission by sexual relations. Analysis of the family history of gangosa patients generally shows an absence of the disease as far back as ancestry can be traced. Brain and spinal syphilis, syphilis of the circulatory system, deafness, chorioiditis, Hutchinson's teeth, and arthritis absolutely do not occur. Insanity and imbecility are almost never observed. Keratitis, when seen, is usually secondary to corneal ulcer, is unilateral, and very unlike the keratitis of congenital or hereditary syphilis. However, the administration of mercury and the iodides resulted in cure in a large number of cases, and eighty-three per cent. of a series examined by Odell gave positive Wassermann reactions. The observations of Odell are apparently very conclusive in the diagnosis of syphilis.

OPHTHALMOLOGY.

July, 1917.

1. EDWARD L. OATMAN: Arteriosclerosis of Retinal Vessels (Angiosclerosis).
2. CHARLES W. MAY: Treatment of Trachoma with Radium. Use of Radium Coated Plates.
3. PAUL BEFFREMIUS: Retinal Detachment of Myopes. Cured by Simple Sclerotomy. Technique of Operation.
4. F. W. ALTER: Metastatic Purulent Ophthalmia of Puerperal Origin.
5. AARON BRAV: Sympathetic Iridocyclitis Following Cataract Extraction.
6. JOHN NEELY RHOADS: Tripling Distance of Test Cards by Catoptics.
7. A. A. BRADBURN: Alternative to Strabismus.
8. E. W. ALEXANDER: Pathological Conditions of Eye Secondary to Disease of Lymphatics of Neck and Throat.
9. FREDERICK W. LAMB: Rational Method of Removing Fragments of Iron from Interior of Eye.

2. **Treatment of Trachoma with Radium.**—May finds the results obtained in a given time by radium are inferior to those obtained by the use of bluestone; in no case was the result equally good. Used in the form of radium coated celluloid plates, the results do not warrant the adoption of this remedy.

8. **Pathological Conditions of the Eye Secondary to Disease of the Lymphatics of the Neck and Throat.**—Alexander says that obscure and recurring inflammations of the eye are often due to soluble toxic products from diseased tonsils, adenoids, or cervical glands, which reach the eye by way of the lymphatics or the general circulation, especially in children and in tuberculous affections of the eye.

SURGERY, GYNECOLOGY, AND OBSTETRICS.

July, 1917.

1. E. FAHEND: Mesenteric Chyle Cysts.
2. A. V. MOSCOWITZ: Pathogenesis, Anatomy, and Cure of Pro-lapse of Rectum.
3. J. RANSOHOFF: Gastroenteroptosis. When Is Surgery Indicated?
4. E. B. DAVIS: End Results in Gallbladder Surgery.
5. J. E. MOORE: Infection of Retroperitoneal Lymphatics.
6. REUBEN PETERSON: Present Status of Abdominal Cæsarean Section: When and How Should the Operation Be Performed?
7. H. P. NEWMAN: Surgery of Cervix Uteri.
8. W. W. GRANT: Chronic Infective Tenosynovitis.
9. L. E. BARRINGTON-WARD: Some End Results of Intestinal Stasis in Children.
10. WILLIAM M. HARSHA: Bilateral Resection of Jaw for Prognathism.
11. J. EIDENBART: Bilateral Resection of Mandible Posterior to Second Molars for Correction of Prognathism.
12. P. M. PILCHER: Renal Varix.
13. A. P. HEINECK: Hernias of Ovary, of Fallopian Tube, and of Ovary and Tube.

3. **Gastroenteroptosis.**—Ransohoff gives an interesting presentation of this subject and brings out very clearly the importance of the x ray in the diagnosis of this condition. A couple of illustrative cases are introduced and the article closes with a summary of the author's views on the operative treatment of certain visceral ptoses.

6. **Abdominal Cæsarean Section.**—Peterson devotes his article to the consideration of the following points: 1. In contracted pelvis is Cæsarean section, or induction of labor, most advantageous for mother and child? 2. Under what conditions is craniotomy on the living child indicated in preference to Cæsarean section? 3. In what cases of contracted pelvis is pubiotomy preferable to Cæsarean section? 4. Under what septic conditions is Cæsarean section indicated and when under similar conditions is the operation unjustifiable? 5. The types of the operation to be selected in different cases.

9. **Intestinal Stasis in Children.**—Barrington-Ward calls attention to the fact that constipation and autointoxication are by no means uncommon in children, but, owing to a variety of factors, the end results of the stasis rather tend to fill the pic-

ture, and it is not until more careful investigation is made that the background of the intestinal condition is discovered. Such children are either dull and lethargic, or querulous. They are usually thin and weakly with feeble metabolism. The condition is well represented by a number of x ray pictures taken at varying periods after a bismuth meal.

10 and 11. Bilateral Resection of the Jaw for Prognathism.—Harsha reports a case that was operated in by him with successful results.—The paper by Eisenstaedt takes up in much detail the dental conditions present, giving the results of his examination. Following this is a brief expression concerning the etiology and diagnosis. The treatment is considered from two points, nonsurgical and surgical.

JOURNAL OF LARYNGOLOGY, RHINOLOGY, AND OTOTOLOGY

July, 1912

1. P. MAURICE CONSTANTIN: Technique of Auditory Examination in Infancy.
2. H. BELL TAYSE: Congenital Occlusion of Right Posterior Naris.
3. RAYMOND VÉREL and J. MILNE DICKIE: Reports for the Years 1910 and 1911 from the Ear and Throat Department of the Royal Infirmary, Edinburgh.

JOURNAL OF TROPICAL MEDICINE AND HYGIENE.

July 1, 1912.

1. C. M. WENYON: Insufficiency of Posterior Nucleus as Specific Distinction in *Trypanosoma rhodesense*.
2. C. M. WENYON: Supposed Peculiarity in Structure of Leishmania from Skin Lesions in South America.

July 15, 1912.

3. W. J. SIMPSON: Observations of Etiology of Vaccinia and on Cultivation of Microbe of Variola.

3. Vaccinia and Variola.—Simpson reports experiments carried out to elucidate the relation of vaccinia to smallpox, and tending to prove the identity of the etiological agent in the two conditions. He states that any one who examines *post mortem* a virulent case of smallpox in the human subject and then a case of cattle plague or rinderpest, as seen in Calcutta in a buffalo or cow, cannot fail to be struck by the similarity in the naked eye appearances and seat of the lesions. From a buffalo suffering from a fatal attack of *gotee* (smallpox) and pronounced by several observers to be covered by a varioloid rash, Simpson isolated a diplobacillus. From subcultures of this organism two calves were inoculated; from one of these, lymph was taken from a secondary vesicle, inserted into a third calf, and from the vesicles in the latter children were successfully vaccinated and rendered immune to ordinary vaccine lymph. The same results followed with the second calf. These and many other experiments clearly showed the possibility of successful vaccination by cultures made from cattle suffering from diseases variously known as rinderpest, *gotee*, etc. It was also shown to be possible to produce vaccine by the passage of human smallpox virus through the cow, and to vaccinate children successfully from this source. The many different opinions hitherto held concerning the relation of vaccinia to smallpox appear to Simpson explainable by varying degrees of maturity of the vesicle produced at the site of inoculation or by the production of secondary vesicles. The article is illustrated.

REVUE MÉDICALE DE LA SUISSE ROMANDE

June, 1912.

1. C. THÉLIN: Extrauterine Pregnancy at Term.
2. HENRY PERRIER: Sarcocarcinomas of Breast.
3. E. COTTIN: Hemiplegia with Onset during Exploration of Pleura.

1. Extrauterine Pregnancy at Term.—Thélin reports the case of a woman in whom, at the eighth month of pregnancy, abdominal symptoms occurred, which suggested first the presence of typhoid fever, later of ectopic gestation with peritonitis. The unusual length of the cervical canal indicating that the uterus was empty, an x ray picture was taken, which confirmed the presence of a fetus. At operation the latter was found macerated and enclosed in a large fibrous sac in contact with the anterior abdominal wall. The result of the intervention seemed about to be successful, when intestinal obstruction developed and caused the patient's death. The diagnosis was complicated in this case by the fact that the uterus could not be palpated owing to abdominal rigidity. The autopsy appeared to prove the case to be one of primary abdominal pregnancy.

2. Sarcocarcinoma of Breast.—Perrier describes a case of tumor of the breast in which, while the general appearance of the growth was that of sarcoma with large polymorphic cells and homogeneous fibrillar ground substance, clearly defined nests of carcinoma cells were also visible. He reviews the evidence so far collected on the question of independent origin of the two types of tumor cells, and concludes for the present it must be considered that in man sarcocarcinomas arise from a combination of two kinds of germ cells, epithelial and connective tissue.

BEITRÄGE ZUR AUGENHEILKUNDE.

June, 1912.

1. FRITZ BRANDENBURG: Typical Partial Pareses of Oculomotor Nerve in Abscesses and Tumors of Temporal Lobes.
2. R. DEUTSCHMANN: Ophthalmoplegia interna in Children.
3. DALMER: Involvement of Middle Ear in Case of Gonorrheal Ophthalmia neonatorum.

1. Pareses of the Oculomotor Nerve in Abscesses and Tumors of the Temporal Lobes.—Brandenburg supports at considerable length the position taken by Koerner, in 1894, that otogenous abscesses in the temporal lobes frequently affect the oculomotorius; that the paresis is almost always partial, affecting first, or alone, the fibres that supply the levator palpebrae and sphincter iridis, and that these pareses are not nuclear, but are due to an injury of the nerve trunk. This is in opposition to the view recently advanced, that such lesions must produce total paralysis of the nerve, and that partial pareses are nuclear.

CENTRALBLATT FÜR ALLGEMEINE PATHOLOGIE UND PATHOLOGISCHE ANATOMIE.

July 15, 1912.

1. Foot: The Behavior of the Bone Marrow Cells of the Hen toward Immune Plasma in Cell Cultures.

July 31, 1912.

2. The Azur II-Eosin Method of Staining Frozen Sections.
3. Transverse Band in Aorta ascendens.

1. Bone Marrow Cells of the Hen in Immune Plasma.—Foot, after immunizing rabbits against an emulsion of marrow from the hen, tried growing marrow cells in the immune plasma. As controls he used marrow cells in normal plasma, and found that they grow; however, the immune plasma of the rabbit prevented completely the growth of the cells. It was also determined that the plasma exhibited an immunity against foreign bone marrow cells in general and a slight immunity against its own.

KLINISCHE MONATSBÄTTER FÜR AUGENHEILKUNDE

July, 1912.

1. C. HIRSCH: Encanthosis and Other Congenital Anomalies.
2. R. SALUS: Extracellular Formation of Leucocytes in Vitreous; Remarks on F. Deutschmann's Article on Pathogenesis of Sympathetic Ophthalmia.
3. A. VOGT and B. JAFFE: Supposed Increase of Adrenalin in Blood in Primary Glaucoma.
4. A. F. MATTICE: Presence of Pneumococci in Conjunctiva after Extirpation of Lacrymal Sac.
5. M. W. JAKOBS: Solitary Tuberculosis of Papilla nervi optici.
6. A. ELSCHING: Technique of Advancement of Ocular Muscles.
7. E. V. HIPPEL: Extraction of Particles of Copper from Vitreous.
8. B. FLEISCHER: Bjerrum's Method of Investigation of Visual Field and Its Results in Glaucoma.
9. R. SALUS: Oculomotor Paralysis with Abnormal Cyclic Innervation of Inner Branches.
10. M. GOERLITZ: New, Sterilizable Eye Dropper.
11. W. STOCK: New Way of Illuminating Field of Operation.

1. **Encanthosis.**—Hirsch describes two cases in which the caruncle was divided into two portions, both smaller than the normal. He considers this malformation to be one of division of the caruncle rather than a supernumerary one, and accordingly has denominated the condition "encanthosis."

3. **Adrenalin in the Blood in Primary Glaucoma.**—Vogt and Jaffe have been unable to find an increased amount of adrenalin in the blood of any of the patients with glaucoma that they have examined.

4. **Pneumococci in the Conjunctiva after Extirpation of the Lacrymal Sac.**—Mattice found pneumococci in the conjunctiva after extirpation of the lacrymal sac in forty-three per cent. of his cases, and almost always on both sides, whether one or both sacs had been removed. Their virulence for white mice was slight. No difference in the virulence could be detected in those taken from the eye that had been operated on, from those taken from the other. There is no regular connection between the epiphora and the bacteriological condition of the conjunctiva. The appearance of the latter, whether pale or injected, is no certain evidence of the presence or absence of pneumococci. Extirpation of the lacrymal sac in cases of dacryocystitis is a very important means of prophylaxis against postoperative infection of the cornea, as the presence of pneumococci, the commonest cause of such infection, is reduced from ninety or ninety-five per cent. before, to forty-three per cent. after the operation, and their virulence is at the same time lessened.

ZEITSCHRIFT FÜR AUGENHEILKUNDE.

July, 1912.

1. TARBAGORD and OLOFF: Importance of Making Examination of Color Sense.
2. SCHIECK: Application of Results of Research into Immunity in Ophthalmology.
3. FRANK TOCZYSKI: Influence of Dionin upon Pupils and Tension of Normal Eye.
4. JUNIUS: Dystrophia marginalis corneae in Young Man.
5. EDMOND BLAAUW: Cysts in Upper Fornix.
6. V. MARENHOLTZ: Diseases of Orbit.

3. **Influence of Dionin.**—Toczyski says that dionin induces a contraction of the pupil which lasts a longer or shorter time and is followed in the majority of cases by a dilatation. The contraction of the pupil fluctuates within fairly wide limits and goes hand in hand with the degree of chemosis, while the dilatation is moderate. The duration of the mydriasis has no close connection with that of the meiosis. The intraocular tension begins to rise after the application of dionin, and after reaching a certain maximum falls to or below the normal. The fluctuations in the tension of the eye are connected with the changes in the size of the pupil,

only in so far as that while the contraction persists the tension is increased. No conclusions in regard to the tension can be drawn from the dilatation of the pupil, for in this stage of the action of dionin it may be elevated, or subnormal.

ZEITSCHRIFT FÜR UROLOGIE.

Vol. VI, No. 4.

1. F. LEGUEU: Professor Albarran.
2. P. ASCH: A New Urethral Injection.
3. J. SEELIG: Sodium Chloride Excretion of Kidney with Especial Reference to Action of Theocin Natrium Aceticum.
4. E. WOSSIDLO: Instrument for Irrigation and Massage of Anterior Urethra.
5. B. GOLDBERG: Prosthetic Bodies.
6. A. SEELIG: Röntgen Diagnosis of Urinary Stone.

2. **Urethral Injection.**—Asch suggests paraffin as an injection that will remain in the urethra a number of hours. The paraffin must be fluid at 40° C.; the urethra is anesthetized with alypin, five to ten c.c. of paraffin, liquefied by heating, is injected and the meatus held for about five minutes; the paraffin by this time is sufficiently hard to remain in the urethra. The author advises against larger quantities of paraffin as it may be forced into the bladder. In this way the paraffin may remain in the urethra for twelve hours. Ichthylol or tuloul may be mixed with the paraffin. The author uses this injection in chronic intractable cases of urethritis.

6. **Röntgen Diagnosis of Urinary Stone.**—Seelig reports four cases, each showing a bladder stone by the cystoscope, in which the radiograph was negative. In each of these four cases litholox was performed and the stone removed. The stones were composed of uric acid.

Proceedings of Societies.

AMERICAN GYNECOLOGICAL SOCIETY.

Thirty-seventh Annual Meeting, Held at Baltimore, Maryland, May 28, 29, and 30, 1912.

The President, Dr. HOWARD A. KELLY, of Baltimore, in the Chair.

(Continued from page 406.)

DR. WILLIAM S. STONE, of New York, said he had now twenty-four patients whom he saw at a period when they had no visible tumor or fibroid he could appreciate. He had seen these patients subsequently when they had fibroid tumors and other kindred conditions. In connection with the clinical study of these cases a few of them had been accompanied by careful histological examinations. It had led him to the suggestion which Doctor Sampson had referred to as explaining a great many cases of hemorrhage at the time of the menopause, and the theory was satisfactory and rational as applied to the causes of hemorrhage in girls at puberty, and among them muscular insufficiency. Those changes had not occurred that ordinarily showed in connection with the adult uterus. With muscular insufficiency, a great many of these cases which were spoken of clinically as well as infantile, did not have enough muscular tissue in them to keep proper control of the blood supply which Doctor Sampson had demonstrated.

A Further Report on the Relation of Thyroidism to the Toxemia of Pregnancy.—Dr.

GEORGE GRAY WARD, of New York, summarized the present status of the toxemias of pregnancy of this type as follows: 1. That these cases may be classified into two groups: (a) Cases with no Graves's disease, but without sufficient thyroid secretion to promote the increased metabolism in the liver made necessary by the pregnancy, and probably due to the failure of the thyroid to hypertrophy. (b) Cases associated with Graves's disease which condition usually caused serious disturbance in the metabolism. 2. Toxemias of the first group were frequently benefited by the administration of thyroid substance in the form of either dry extract or a serum. 3. In toxemias of the second group, it was essential to determine whether the Graves's disease was in a condition of hyperthyroidism or hypothyroidism. If the former, rest, applications of ice, milk diet, and sedatives, should be employed, and if these measures failed, an antiserum, such as the cytotoxic serum of Beebe and Rogers should be administered. If the latter, thyroid substance should be given in the form of the dry extract, or, what was more efficient, if possible to obtain, a saline extract prepared from normal human glands, for hypodermic administration. 4. Reliance should be placed upon nitrogen partition of the urine as a guide to the severity of the toxemia rather than on the blood pressure. 5. Induction of labor was very slow and uncertain in these cases, and where the history of former labors was that of dystocia, elective Cæsarean section was probably the safest method of delivery for both mother and child.

Treatment of Acute and Fulminant Toxemia.—Dr. EDWARD P. DAVIS, of Philadelphia, said that each case of toxemia of pregnancy must be studied by a thorough physical examination, and that undue importance could not be assigned to any one symptom. One fact stood out preeminently in all fatal cases of toxemia of pregnancy, and that was the disorganized state of the blood, the minute hemorrhages in the liver and other organs, and in those patients in whom fulminant toxemia lasted for some time the occurrence of pulmonary edema and of gangrenous pneumonia. Whatever we could do in the way of treatment must be addressed to avoiding these conditions. The value of milk as a prophylactic diet must be insisted upon. The prevalent desire for fresh air should also be encouraged. A thorough physical examination should give warning of the approach of fulminant toxemia. Great variations in pulse tension, disturbance of the nervous system, inability to retain nourishment, disordered secretion and excretion, and variation in the nitrogenous output of the body, as demonstrated by the nitrogenous partition of the urine, were all of paramount importance. Should the conditions be unfavorable for spontaneous delivery, and the uterus make an effort to expel its contents, he believed that rapid delivery by abdominal section was the operation of choice. He preferred this to vaginal section because it was free from mechanical difficulties, and did not open the veins above the pelvis and lower portion of the birth canal.

Treatment of Eclampsia.—Dr. FRANKLIN S. NEWELL, of Boston, stated that since the etiology of eclampsia was unknown the treatment must be symptomatic and empirical. Until the physiologi-

cal chemist found the causative agent treatment must be directed toward limiting the amount of the toxine which was absorbed, in the first place; second, the prevention of damage by the toxine already absorbed; third, elimination of the toxine, and fourth, treatment of the patient. Limitation of absorption of toxines was to be accomplished only by ending the pregnancy. The method of dilatation of the cervix and operative delivery must be chosen to suit the needs of the individual patient and operative skill of the obstetrician. Slow methods of dilatation were not to be advised. Damage by toxines already absorbed should be prevented, and convulsions controlled by the free use of morphine to the point of slowing respirations to twelve in a minute, and lowering of blood pressure to approximately normal point by venesection in order to reduce the strain on the heart. As to the elimination of toxine, free catharsis, induced by the use of saline and croton oil in repeated doses, should be undertaken until several watery movements had resulted. The lower bowel should be washed out by colonic flushing. Probably most of the toxine was excreted by the intestinal tract, and if it was not removed might be resorbed and cause a recurrence of symptoms. The patient must be treated in certain cases and the disease allowed to care for itself, since it was evident in certain cases that any active interference would cause the death of the patient, and the only hope lay in palliative means. In these cases and in patients who had reacted badly to operative procedures, direct transfusion of blood should be considered as a possible life saving procedure.

Treatment of Eclampsia.—Dr. GEORGE TUCKER HARRISON, of Charlottesville, Virginia, said that whatever was the nature and origin of the toxic substance which evoked the phenomena characteristic of eclampsia, two facts stood out in clear light. In the first place, the potency of the poison that produced the toxemia was made manifest by the degenerative changes in the kidneys, the anemia and hemorrhagic necroses in the liver, the hemorrhages into the brain, and multiple thrombosis. In the second place, the undoubted fact that, as a rule, the evacuation of the contents of the uterus was attended by a speedy relief of the symptoms, *restitutio ad integrum*. Bearing in mind these facts, it was logical to maintain that in cases of acute toxemia in pregnancy, whether with or without eclamptic attacks, the indication of treatment was to empty the uterus as speedily as might be. If the cervix was dilatable or dilated, either by manual dilatation or by the use of the metreurynter, but not by metallic dilators, sufficient dilatation might be obtained, so that version and delivery might be accomplished in a short time. Forceps should be applied only when the head was fixed in the pelvis. In a primipara, when the cervix was maintained in its entire length, the indication was vaginal Cæsarean section.

Indications for, and the Type of Operation to Select in the Toxemia of Pregnancy.—Dr. JOHN O. POLAK, of Brooklyn, New York, drew the following conclusions: 1. Toxic vomiting which resisted rest, lavage, dextrose enemata, enteroclysis, and presented a high ammonia ratio, or persistent acetone, a total white cell count of under nine thou-

sand, and a maternal pulse of 100 or more should have the pregnancy interrupted. 2. Before the formation of the placenta, the curette was the method of choice, and after this period anterior hysterotomy offered decided advantages. 3. The pre-eclamptic state, characterized by its high blood pressure, diminished urinary output, persistent albuminuria, etc., not yielding to dietetic, eliminative, and medicinal measures, justified evacuation, and surgical methods in skilled hands did less injury, and had a lower mortality and morbidity than the less radical procedures. 4. When the convulsions and coma had occurred, the termination of pregnancy improved the chances of the patient's recovery, and the method of delivery depended on the condition of the cervix, which determined whether it be by incision, bag, or Nature, supplemented by version or forceps. Finally, anterior hysterotomy should always be the choice over manual dilatation, where no effacement of the cervix had taken place.

Treatment of Eclampsia.—Dr. CYRUS A. KIRKLEY, of Asheville, pointed out that prophylaxis was the more satisfactory treatment in the toxemia of pregnancy. Indefinite treatment was due to obscure etiology. Renal and hepatic insufficiency were probably the main etiological factors. To eliminate accumulated toxins, and to restore impaired or arrested function in the eliminative organs, was the aim of treatment. Calomel and soda, followed by salines, alkaline diuretics, if not contraindicated, the hot pack, the hot air bath, spirits of glyceryl nitrite, massage, pure air, and abundance of pure water were important aids in treatment. Venesection, if not contraindicated, both as a prophylactic and during and after the eclamptic seizure, was strongly approved. Chloroform and morphine were in disfavor. Veratrum viride was second only to venesection as an antieclamptic, but was in no sense a substitute. Decapsulation of the kidney had a doubtful place in the treatment of eclampsia, but thyroid extract might be useful as a prophylactic. The uterus should be emptied as soon as it could be done without increasing the risk to the mother. Should labor not begin with the first seizure, and if the internal os uteri was obliterated, dilatation and delivery by forceps or podalic version might be accomplished. The indications for Cæsarean section were pointed out, but too radical as well as too conservative treatment might result disastrously. While Cæsarean section should not be performed *en dernier ressort*, we should be absolutely sure that delivery by other means was impossible.

Dr. REUBEN PETERSON, of Ann Arbor, stated that as long as the prophylactic treatment could be carried on and the patient was improving, it was the duty of every obstetrician to carry it out. If the patient, however, failed to improve under the prophylactic treatment, then came the question of what to do, and he maintained with Doctor Polk and with Doctor Harrison that the best method was to empty the uterus as quickly as possible. If the cervix was dilated so that one could with a little more than manual dilatation deliver the woman, this should be done. If the cervix was rigid, it was a good deal better, rather than spend considerable time in dilating the cervix to make a vaginal Cæsarean section. The fetal mortality of abdominal

Cæsarean section should be far less than vaginal Cæsarean section. The mortality of vaginal Cæsarean section in 530 cases was 21.2 per cent.; the fetal mortality in 421 abdominal sections was 5.9 per cent., so that the last word had not been told in regard to the method of emptying the uterus in the presence of eclampsia.

Dr. BARTON COOKE HIRST, of Philadelphia, had been using the parathyroid extract for five or six years, and he believed that in the rare types of toxemia he got better results than from the thyroid extract itself, but those toxemias that required parathyroid treatment were rare; they constituted only a small minority of the cases of toxemia seen in practice. He felt strongly opposed to Doctor Harrison's unqualified advocacy of the operative treatment, and he thought the society ought carefully to consider its responsibilities to the general profession. In the United States there were approximately 7,500 cases of eclampsia every year. Of that number, the vast majority was attended by the general physicians, and if the doctrine went forth from the society to the effect that the unqualified treatment of toxemia and eclampsia was the operative treatment, it would do a vast deal of harm.

Dr. RICHARD C. NORRIS, of Philadelphia, stated that his last thirty cases of toxemia occurred during the period when vaginal Cæsarean section had been discussed by the profession. Of these cases there were thirteen actually eclamptic women who had had forty-two convulsions; there were seventeen preeclamptic cases past the seventh month of pregnancy. This group of cases was treated by the conservative plan; cases that in his judgment did not require the aggressive operative methods, yet one woman died without eclampsia from a widespread accumulation of fluid in the serous cavities, chronic Bright's disease, and none of the infants died, most of them being premature. He felt sure, if he had subjected every one of these women to vaginal Cæsarean section he would not have had better results. He believed the time had come for us to attempt to study individual cases and properly classify them.

Dr. J. WHITRIDGE WILLIAMS, of Baltimore, said that when it was essential to empty the uterus for vomiting of pregnancy, vaginal hysterotomy or Cæsarean section was the method, and he had employed it for some years. As to the method of emptying the uterus in cases of eclampsia, it was very essential to individualize, but he believed in every case where the cervix was rigid and where prompt delivery was necessary, vaginal Cæsarean section was the operation of choice. He had employed this operation in a large number of cases with great success and great operative satisfaction.

Dr. CHARLES M. GREEN, of Boston, said that if we were going to be of the greatest service to womankind in this matter of pregnancy toxemia, steps must be taken to get at the cases early. He happened to have had considerable experience this winter as the result of a pregnancy clinic they had been running in Boston since a year ago last May, and the result had been a considerable diminution in the number of cases of actual eclampsia, that is, women who went on to the point of having fits. They got these patients in all periods during preg-

nancy, not only when they presented themselves at the clinic, but when found by the visiting nurse, who was sent to keep track of these women when they presented symptoms of toxemia of pregnancy. As the result of this work, they had had no cases of eclampsia. He did not mean to say by that that none of them had to be delivered or had not been delivered, but they had found by putting these patients under the usual eliminative treatment, very often labor began and they delivered themselves and recovered without ever having convulsions, so that he was firmly of the belief that we should get better results, less actual eclampsia to treat, if we took steps in our clinics to get control of these women early.

Dr. HENRY D. FRY, of Washington, D. C., said he was never satisfied to empty the uterus until he had tried one remedy which had served a good purpose in the treatment of the early stage of eclampsia. After putting the woman to bed and taking off all food by the stomach and giving nutrient enemata, he used inhalation of oxygen, and if he could not stop pernicious vomiting he was satisfied he should empty the uterus. He had made it a routine practice in the later months of pregnancy to examine the thyroid glands of all women, and if they did not have physiological enlargement of the thyroid at that time, if they had restlessness, sleeplessness, indigestion, he put them on thyroid extract, and had seen the symptoms disappear. He had seen the nitrogen output increase, and this did good in a certain class of cases.

Dr. GEORGE W. KOSMAK, of New York, said the term eclampsia was a misnomer in the class of cases to which it was generally applied. We had called a disease entity the toxemia of pregnancy by one of its prominent symptoms, but in a great many cases this prominent symptom did not appear. There were a great many cases of toxemia of pregnancy in the late months that did not have convulsions; some of them got over the toxemia, and some of them terminated fatally. At a meeting held in Atlantic City several years ago, Doctor Welch showed specimens from a series of four cases. They were brains and livers from each of these women, two of whom had convulsions and died as the result of toxemia, while the other two never had any convulsions, but passed meconium. Therefore, it was not fair in the treatment of these cases to assume that convulsions were the deciding factors, and this was why he personally objected to basing a series of statistics on the presence of convulsions.

Dr. HUGO EHRENFEST, of St. Louis, referred to venesection in the treatment of eclampsia and pregnancy, and said it was an interesting fact that of late venesection had been suggested and recommended by many men. Many of these cases, he thought, were spoiled by the introduction of saline solution. One never knew when saline solution might prove detrimental to the patient, but the withdrawal of a large amount of blood worked approximately the same way as forcing delivery. According to investigation, the true effect and force of saline solution lay in the loss of blood. No matter what method of treatment was resorted to in these cases, the patient should be put into a hospital, and all statistics based on hospital experience in treat-

ing these cases. This should be one of the first points in any therapeutic effort. The majority of patients suffering from the toxemia of pregnancy could be brought into a hospital. He thought it was unsafe to resort to operative measures amid unfavorable surroundings. Conservatism should always be kept in mind in dealing with this class of patients.

History of Vesicovaginal Fistula.—Dr. HOWARD A. KELLY, of Baltimore, pointed out that the ancients confounded all forms of inability to retain the urine under the common heading of "incontinence." He said that Felix Plater, in 1597, discussed the condition with the utmost clearness, but had no remedy to propose. The first great light upon the subject was found in the work of von Roonhuyse, in 1663, describing a method of posture, exposure, denudation, and closure by means of a quilt suture. After paying his respects to Sims and Emmet, the speaker went on to discuss the newer dissection and flap splitting methods of treatment other than those of direct denudation of the margins of the fistula, dwelling particularly upon the work of Hayward, Pancoast, Colles, Blasius, Mackenrodt, Walcher, and their followers.

Radical Abdominal Operation for Cancer of the Cervix Uteri; Primary Results and End Results (Five Year Limit).—Dr. REUBEN PETERSON, of Ann Arbor, spoke of the primary and end results of fifty radical abdominal operations for cancer of the uterus. There were ten deaths in the fifty-one cases, or a primary mortality of 19.6 per cent. His operative experience with the radical abdominal operation began some ten years ago, and until he had acquired some familiarity with the technique the results were very discouraging. This was shown by a primary mortality of 42.8 per cent. in the first fourteen cases. In the last thirty-seven cases there were but four primary deaths, a mortality of 10.8 per cent. In forty cases of carcinoma of the cervix there were nine deaths, or a primary mortality of 22.5 per cent., while there was only one primary death in 11 cases of cancer of the fundus, or a mortality of nine per cent. He had made a summary of the fifty-one cases, which showed that eight patients with carcinoma of the cervix had died from recurrence of the disease, while one died of tuberculosis. Two patients with carcinoma of the cervix had had recurrences, but were still living. One patient had a recurrence in the vaginal vault five months after the operation. Indurated tissue about the size of the end of the thumb was removed at a second laparotomy. From personal examinations of seven patients out of the eleven with recurrences, he was able to say that in these the disease undoubtedly returned in the vaginal cicatrix. There were ten recurrences among the thirty-one cases of carcinoma of the cervix surviving the operation, while there was only one recurrence in the eleven cases of carcinoma of the fundus.

Radical Abdominal Operation for Carcinoma of the Cervix.—Dr. HOWARD C. TAYLOR, of New York, drew the following conclusions: 1. The primary mortality of the radical abdominal operation was not such that it should deter us from doing the operation. 2. The proportion of operability in the cases that came under the observation of an operator would be greatly increased by means of this

operation over the simple hysterectomy as formerly done. 3. The end results would never compare favorably with the end results reported from abroad until we were able to get our cases at an earlier stage of the disease, and our justification for doing a radical operation was its moderate mortality and the relief of symptoms in a disease otherwise hopeless. 4. Our most promising field of endeavor on the subject of carcinoma of the uterus should be: 1. More reliable and complete statistics on operability, the community operability, primary mortality, and end results. 2. A well regulated organized plan of campaign in order to get the cases earlier than we do at the present time, by furthering the education of the medical profession and the public at large, and by the routine examination of all women after a certain age.

Prognosis in Radical Abdominal Operations for Uterine Cancer.—Dr. FRED J. TAUSSIG, of St. Louis, said the radical abdominal operation for cervical cancer was not in itself a dangerous procedure. It became dangerous only in advanced cases, owing to the attendant complications, septic infiltration, injury to the bladder or ureter, bleeding, and prolonged narcosis. The proportion of recurrences was distinctly less after this operation than after simple vaginal hysterectomy. It should be employed in every case of cervical cancer in which there was no special contraindication to a more extensive operative procedure. In far advanced cases the immediate operative risk was so great, and the likelihood of recurrence such that these patients had better be classed as inoperable. Out of fifteen patients in his group not a single one was alive today. Only by improving the training of the average practitioner, by the extermination of quacks, and most of all by the persistent systematic education of the laity could we ever hope for better results.

(To be concluded.)

Letters to the Editor.

THE ANTITUBERCULOSIS CAMPAIGN.

NEW YORK, August 27, 1912.

To the Editor:

The editorial article in your issue for August 24th is all right so far as it goes. But as it does not speak at all of a very simple, practical, and inexpensive treatment, which as preventive and curative, is the best up to date, as I firmly believe, it falls short of what I most desire. I have so frequently written and spoken in support of the treatment of pulmonary tuberculosis by continuous antiseptic inhalations and small, repeated doses of beechwood creosote, given by the mouth, that I should be loth still to urge its general use were I not absolutely convinced of its primary importance to a vast number of unfortunate, ill people everywhere. Hitherto, no one has proved that I was mistaken in my belief and assertions. Indeed, I am sustained in very much that I have stated by Dr. David B. Lees, of London, England, a well known and reliable physician, consultant to St. Mary's Hospital, who

has written remarkable articles on this subject. These papers were published in the *Lancet* and *British Medical Journal* within the last three years.

BEVERLEY ROBINSON, M. D.

"AUTOTHERAPY."

BROOKLYN, NEW YORK, August 22, 1912.

To the Editor:

In the absence abroad of Doctor Lintz, permit me to thank Doctor Duncan for calling our attention to his two interesting articles (v. communication in your issue of August 17th).

As to the term "autotherapy," it is not likely that any of us can perfect an exclusive title. If Doctor Duncan "coined" the word, it must have been a precocious not to say antenatal act. It has long been in use, as may be seen by consulting the medical dictionaries (*e. g.*, Dorland, 1909; De Meric's French-English, 1899; Gould, 1896; Dunglison, 1851, etc.), and represents a convenient general designation rather than a name for any single or special method.

WILLIAM BROWNING, M. D.

BACTERINS IN HAY FEVER.

PORTLAND, OREGON, August 13, 1912.

To the Editor:

A lady, aged thirty-five years, suffering with hay fever that comes on every year about the 15th of May and lasts until frost, presented herself at my office during the latter part of last June for treatment.

She came to Portland, Oregon, about ten years ago, from the middle west, in hopes that a change of climate might help her. For three years she was better; but her condition has been getting worse for the past seven years, and lately she has had asthmatic attacks so severe that she was unable to lie down to sleep at night. She has consulted a number of physicians and has tried many so called cures with no relief.

Her eyes were red, watering, and inflamed. Her nose was swollen and red, and she was continually sneezing. She had a typical attack of hay fever. Her weight was 131 pounds.

I drew some blood from the median vein and had a blood culture made by Professor E. F. Perrot, of the Portland Bacteriological Laboratory. An organism was found in the blood. A swab was taken from the eyes, nose, throat, and sputum showed the same organism, not in pure culture.

A bacterin was prepared from this organism and administered to the patient, beginning July 5th. On July 14th, she reported feeling much improved. She received her third dose at that time. She received 500 millions of the bacterins on an average of once in five days since that time. She has a slight tendency to sneeze occasionally, but she reported, August 9th, and has been entirely relieved for the past ten days. She has gained four pounds in weight.

H. M. GREENE, M. D.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Direct Laryngoscopy, Bronchoscopy, and Esophagoscopy. By Dr. W. BRUNINGS. Translated and Edited by W. G. HOWARTH, M. A., M. B., B. C. Camb., F. R. C. S. Eng., Surgeon in charge of the Throat Department at St. Thomas's Hospital and the Queen's Hospital for Children, Surgeon Laryngologist to the City of London Hospital for Diseases of the Chest, etc. New York: William Wood & Co., 1912. Pp. xiv-379. (Price, \$5.)

The author has made an effort to present the results of his brilliant work on the direct examination of the air passages and the esophagus in a form which might be more accessible to those who are interested in this line of work. His efforts to familiarize the workers in this practically new branch of medicine with the technique of examination and the manipulation of his instruments are to be highly commended. Nevertheless, we exert our prerogative, and offer a few kindly suggestions, in the event of future editions.

It can hardly be said that the subject matter is arranged in a form we usually associate with a textbook, but appears to be in the nature of a series of articles, or papers, mostly of an experimental nature, at the end of which the reader is very apt to be left in a state of confusion. This condition, in part, may be due to the fact that the instruments appear somewhat complicated, and the description of their usage often lacks the necessary detail to eliminate all doubt as to their proper manipulation, thereby necessitating special training under guidance of a skilled tutor for one who wishes to become proficient. It is, further, somewhat unusual to find the prices and the makers of instruments advertised within the body of the text, as is found in the early pages.

The translator, likewise, deserves much credit for his efforts in producing Doctor Brunings's work in English, but he evidently thought it unnecessary to give a complete translation of the German edition, for in several places he refers the reader to the original work for a more detailed account or description of the subject under consideration. A few grammatical and typographical errors are present, which should be easily eliminated in a subsequent edition.

The book is divided into eight chapters, which take up successively endoscopic technique; local anesthesia, general anesthesia, oxygen inhalation; direct laryngoscopy; trachea and bronchial tree; direct tracheobronchoscopy; direct examination in children; esophagoscopy; and bronchoscopic operations and methods of treatment.

L'Internationalisme scientifique (sciences pures et lettres).

Par P. H. EIJKMAN, médecin à la Haye. Avec un avant-propos du Professeur PAUL S. REINSCH, Roosevelt Exchange Professor, Madison, Wis.—Berlin. Publication du Bureau préliminaire de la fondation pour l'Internationalisme. La Haye: W. P. Van Stockum et fils, 1911. Pp. 108.

This book contains to the number of 614 a list of the various scientific societies of the world; its extremely hospitable nature may be divined when the reader notes the inclusion of the World's Young Women's Christian Association (594) and the Comité permanent des Congrès eucharistiques (595). The object of the compiler, however, is set forth in the preface as being the organization of international cooperation in scientific work, and the list of societies given shows the tendencies of the age toward this desirable end. Arguments are scarcely necessary to prove the value of cooperation in the study of seismology, geodesy, botany, and physics, for example, for the methods of their study are the same in all countries, and every physician knows that medicine is one in all civilized lands. If it is objected that those sciences which study the social relations of mankind are strictly national, it may be answered that this is a narrow viewpoint, for no one country contains within itself all the possibilities of man and none can afford to neglect the experience acquired in other countries, or to overlook the important

factor of mutual influence. A short account of the object of each society follows its title, and the list of officers is given, when possible, together with the address of the secretary. There are over 240 societies mentioned whose objects are concerned with the advance of medical science. We consider this book to be indispensable to any scientific worker, who may learn easily and readily from its pages what other scientific organizations are interested in his particular line of endeavor. A somewhat singular effect is produced in the titles of English and American societies by following the French rules regarding initial capital letters, but this is a minor point and one easily corrected in a future edition.

Thérapeutique usuelle du praticien. Traitement de la tuberculose. Par ALBERT ROBIN, professeur de clinique thérapeutique à la faculté de médecine de Paris, membre de l'Académie de Médecine. Troisième série. Paris: Vigot frères, 1912. Pp. 640.

This third series of therapeutic clinics is given up exclusively to the lectures delivered by the distinguished author at the Hôpital Beaujon, in 1912, on the subject of pulmonary tuberculosis. It is complete in taking up every therapeutic possibility in the disease, and possesses the interesting style we are accustomed to note in French textbooks, while the various parts, of which there are six, are presented in a manner that enables the physician to organize his treatment of a given case in a rational manner. Beginning with general observations on the treatment of phthisis, the author discusses remineralization, antiseptics, hydrotherapy, climatotherapy, the variations of treatment dictated by age and associated morbid conditions, the treatment of local lesions, and methods of social defense. There are an immense number of prescriptions, not useful in their present form to the American physician, but easily modified to agree with the *United States Pharmacopœia*, and many valuable practical hints drawn from the author's long experience. To sum up, this is an authoritative work of the first rank and entitled to a place in the library of every phthisiologist and general practitioner.

How Shall I Tell My Child. By Mrs. WOODALLEN CHAPMAN. With a Foreword by EDWARD BOK, Editor of *The Ladies Home Journal*. (The Edward Bok Books of Self Knowledge for Young People and Parents. No. 1.) New York, Chicago, Toronto, London, and Edinburgh: Fleming H. Revell Company, 1912. Pp. 62. (Price, 25 cents.)

When a Boy Becomes a Man. A Little Book for Boys. By H. BISSEKER, M. A., With a Foreword by EDWARD BOK, Editor of *The Ladies Home Journal*. (The Edward Bok Books of Self Knowledge No. 2.) New York, Chicago, Toronto, London, and Edinburgh: Fleming H. Revell Company, 1912. Pp. 46. (Price, 25 cents.)

It is a little difficult to differentiate these booklets, which discuss the same problems in practically the same manner. Perhaps the first might be used for children of very tender years and the other for those a little older. The entire series seems to us to be very well done and should prove extremely useful to a parent or guardian confronted for the first time with the necessity of imparting instruction on sexual matters to a child.

Handbuch der gesamten medizinischen Anwendungen der Elektrizität einschliesslich der Röntgenlehre. In drei Bänden bearbeitet von Prof. Dr. A. ALEXANDER in Berlin, Priv.-Doz. Dr. F. BATELLI in Genf, Prof. Dr. J. BERGONIÉ, in Bordeaux, et al. Herausgegeben von Prof. Dr. med. H. BORUTTAU, Privatdozent für Physiologie an der Universität Berlin, und Prof. Dr. med. L. MANN, Privatdozent für Nervenheilkunde an der Universität Breslau. Mitherausgeber für den Röntgenband: Prof. Dr. med. M. LEVY-DORN, Leitender Arzt am Rudolf-Virchow-Krankenhaus in Berlin, und Prof. Dr. med. P. KRAUSE, Direktor der medizinischen Universitätsklinik in Bonn. Zweiter Band, zweite Hälfte. Leipzig: Dr. Werner Klinkhardt, 1912. Pp. viii-411 to 1102.

The second part of the second volume of this exhaustive treatise on the practical application of medical electricity inclusive of roentgenology is well deserving of the distin-

guished editorial staff enumerated above. The work is to be issued in three volumes, and this portion of volume two now under review consists of 1,102 pages (octavo), 202 illustrations, and one plate in color. The opening chapter of this part of the work, from the pen of the well known specialist Salomonson, comprises 451 pages, and deals with the elementary facts of electricity and electrotherapy, including such subjects as cataphoresis, electrolysis, galvanization, faradization, etc. Extremely complete and elaborate are the articles treating of the electrotherapy of the muscles, joints, and nerves which include the next 180 pages. The reader is gradually led from the abstract to the concrete and not only is he instructed why and when to apply the various currents of electricity, but he is told exactly how to do it—something too often omitted in the works of American and English authors.

The Italian scientist, Giovanni Galli, contributes a very learned article on cardiovascular diseases and quotes from the French to maintain the rather interesting viewpoint that distant and apparently unrelated diseases, are really a part of cardiac disease, or of interference with cardiac innervation, etc. He includes in his chapter a very good account of the hydroelectric bath and discusses the electrotherapy of cardiac disease, especially insufficiency and dilatation, the treatment of arteriosclerosis with high frequency currents, the employment of electrical currents in aneurysm, angina pectoris, hemorrhoids, etc.

Professor Alexander, of Berlin, offers a most comprehensive study of the value of electricity in laryngology and rhinology, even touching on the subject of laryngismus stridulus and "dry mouth" while his confrère Doctor Fehr, of Berlin, adds a similar comprehensive chapter on ophthalmology.

"Franklinization" is written by Professor Luzenberger, of Naples, and relates in detail the subject, gradually and thoroughly discussing the nature of electrical condensers, the working and uses of the various influence machines, etc.

Bergonié, of Bordeaux, discusses the theories, the applications, and the possibilities of high frequency currents and adds a clear and elaborate account of Keating-Hart's studies in fulguration.

A unique chapter and one full of value describes a series of beautiful instruments and devices that may be charged electrically and useful for illumination, heating, etc., including various lamps, head mirrors, apparatus for the mouth, throat, bladder, etc., all of which is tersely presented and well illustrated and emanates from the pen of Boruttau, of Berlin.

Among the remaining articles, one's attention is at once arrested and thought invited by the very elaborate and lucid chapter on phototherapy written by Doctor Steiner, of Rome. The therapeutical applications of light are many and whether by specially constructed lamps, sunlight or arc light, the results obtained in many instances are to say the least worthy of serious thought. The action of light on the various tissues and deeper structures of the body, is all interestingly discussed, and all the advances made in this special field of endeavor, are shown to have had their genesis in the memorable labors that the genius of Finsen bequeathed to science.

Our Teutonic cousins have always been known for their extreme thoroughness in all their undertakings, and this volume before us proves no exception to the rule. Clear, exact, and precise, the comprehensive text is embellished with 202 worthy illustrations and where completeness is required, the introduction of mathematical formulas has not been neglected. The work is well worthy of perusal and reflects credit on the knowledge and discrimination of its authors.

Milk Modification Card. By JAMES HERBERT YOUNG, M. D. Boston: F. H. Thomas Company, 1912. (Price, 50 cents.)

This is an ingeniously constructed celluloid envelope, containing two celluloid cards printed on both sides, which, by means of slits in the envelope automatically show the proper percentages of fat, protein, sugar, and whey in a twenty, thirty-two, forty, and forty-eight ounce mixture of modified milk. Room is found for other useful information on the envelope, and the whole is small enough to slip easily into the doctor's pocket book.

NEW PUBLICATIONS.

Adams, P. H.—Pathology of the Eye. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1912. Pp. x-194. (Price, \$1.50.)

Roberts, Stewart R.—Pellagra. History, Distribution, Diagnosis, Prognosis, Treatment, Etiology. With Eighty-nine Special Engravings and Colored Frontispiece. St. Louis: C. V. Mosby Company, 1912. Pp. 272. (Price, \$2.50.)

Adami, J. George, and McCrae, John.—A Textbook of Pathology. For Students of Medicine. Illustrated with 304 Engravings and 11 Colored Plates. Philadelphia and New York: Lea & Febiger, 1912. Pp. x-759. (Price, \$5.)

Riviere, Clive, and Morland, Egbert.—Tuberculin Treatment. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1912. Pp. xv-277. (Price, \$2.)

Herringham, W. P., and Williamson, Herbert.—Kidney Diseases. With Chapters on Renal Disease in Pregnancy. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1912. Pp. xvi-378. (Price, \$5.50.)

Pollaek, Major C. E., and Harrison, Major L. W.—Gonococcal Infections. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1912. Pp. xxi-222. (Price, \$2.)

Adamson, H. G.—Goulstonian Lectures on Modern Views upon the Significance of Skin Eruptions. Delivered before the Royal College of Physicians of London. London: John Bale, Sons, & Danilsson, Ltd., 1912. Pp. 103. (Price, 3s. 6d.)

Lucas-Championnière.—Trépanation néolithique, trépanation pré-Colombienne, trépanation des Kabyles, trépanation traditionnelle. Les origines de la trépanation décompressive. Avec 32 figures. Paris: G. Steinheil, 1912. Pp. 131.

Klotz, Max.—Kohlhydratkuren bei Diabetes. Würzburg: Curt Kabitzsch, 1912. Pp. 213-286.

Robinson, William J.—Practical Eugenics. Four Means of Improving the Human Race. New York: The Critic and Guide Company, 1912. Pp. 93. (Price, 50 cents.)

MacKenzie, James.—Symptoms and Their Interpretation. Second Edition. London: Shaw & Sons, 1912. Pp. xx-304. (Price, 7s. 10d.)

Gardner, William Sisson.—A Textbook of Gynecology. With One Hundred and Thirty-eight Illustrations in the Text. New York and London: D. Appleton & Co., 1912. Pp. xiv-296.

Loeb, Jacques.—The Mechanistic Conception of Life. Biological Essays. Chicago: The University of Chicago Press, 1912. Pp. 232.

Burdett, Sir Henry.—Hospitals and Charities for 1912. Being the Year Book of Philanthropy and the Hospital Annual. London: The Scientific Press, Limited, 1912. Pp. 952.

Carrington, Thomas Spees.—Fresh Air and How to Use It. New York: The National Association for the Study and Prevention of Tuberculosis, 1912. Pp. xviii-250. (Price, \$1.)

Robinson, Victor.—An Essay on Hasheesh. Including Observations and Experiments. New York: Medical Review of Reviews, 1912. Pp. 83. (Price, 50 cents.)

Jamieson, W. Allan.—The Care of the Skin in Health. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1912. Pp. 109.

Von Oettingen, Walter.—Leitfaden der praktischen Kriegs-Chirurgie. Dresden und Leipzig: Theodor Steinkopf, 1912. Pp. xvi-377. (Price, M. 9.50.)

Chavannas, G., et Guyot, J.—Maladies du pancréas, de la rate et du mésentère. (Nouveau traité de chirurgie, publié en fascicules sous la direction de A. le Dentu et Pierre Delbert.) Avec 126 figures intercalées dans le texte. Paris: J. B. Baillière et fils, 1912. Pp. 406.

Murrell, William.—What To Do in Cases of Poisoning. Eleventh Edition. New York: Paul B. Hoeber, 1912. Pp. 283. (Price, \$1.)

Schloss, Ernst.—Ueber Säuglingsernährung. Mit 59 Kurven im Text und auf 3 Tafeln. Berlin: S. Karger, 1912. Pp. vi-231.

Baendker, B., and Koepke, C.—Die Klinik der Tuberkulose. Handbuch der gesamten Tuberkulose für Aerzte und Studierende. Zweite vermehrte und verbesserte Auflage. Mit 3 Abbildungen und 7 Kurven im Text sowie 6 farbigen und schwarzen Tafeln. Würzburg: Curt Kabitzsch, 1912. Pp. xii-641.

Von Linden, Gräfin, Meissen, E., und Strauss, A.—Beiträge zur Chemotherapie der Tuberkulose. Mit 3 Tafeln. (Sonderdruck aus Beiträge zur Klinik der Tuberkulose, herausgegeben von Professor Dr. L. Brauer, XXIII, Band Heft 2.) Würzburg: Curt Kabitzsch, 1912. Pp. 31.

Cohnheim, Otto.—Enzymes. Six Lectures Delivered under the Herter Lectureship Foundation at the University and Bellevue Hospital Medical College. First Edition. First Thousand. New York: John Wiley & Sons; London: Chapman & Hall, 1912. Pp. viii-173.

Page, Stephen.—For and against Experiments on Animals. Evidence before the Royal Commission on Vivisection. With an Introduction by the Right Honorable the Earl of Cromer. New York: Paul B. Hoeber, 1912. Pp. xxxii-344. (Price, \$1.50.)

Meetings of Local Medical Societies.

TUESDAY, September 3d.—Buffalo Academy of Medicine (Section in Surgery); Ogdensburg Medical Association (annual); Syracuse Academy of Medicine; Amsterdam City Medical Society; Oswego Academy of Medicine; Hudson County, N. J., Medical Association (Jersey City); Bridgeport, Conn., Medical Association.

WEDNESDAY, September 4th.—Bronx Medical Association; Long Island Society of Anesthetists; Elmira Academy of Medicine.

THURSDAY, September 5th.—Practitioners' Club, Buffalo; Dansville Medical Association; Geneva Medical Society.

FRIDAY, September 6th.—Corning Medical Association.

Official News.

Public Health Service Health Reports:

The following cases of and deaths from cholera, yellow fever, plague, and smallpox were reported to the surgeon general of the United States Public Health Service during the week ending August 23, 1912:

CHOLERA.—FOREIGN: India (Bombay), July 16-23, 89 cases, 68 deaths; Straits Settlements, June 23-29, 6 cases, 5 deaths; Turkey in Asia, July 15-26, 41 cases, 26 deaths.

YELLOW FEVER.—FOREIGN: Brazil (Manaos), July 14-27, 7 deaths; Cuba (Havana), July 27, 1 death; Mexico, August 10-19, 10 cases; May 4-August 10, 43 cases, 18 deaths; Venezuela, July 16-August 3, 3 cases, 1 death.

PLAGUE.—INSULAR: Porto Rico (San Juan), August 6-16, 2 cases. **PLAGUE.—FOREIGN:** China (Hong Kong), June 23-July 6, 142 cases, 118 deaths; India, May 26-June 29, 4,228 cases, 3,097 deaths; July 7-13, 13 cases, 10 deaths; Russian Empire, May 15-June 16, 33 cases, 40 deaths; Straits Settlements, June 23-29, 1 case.

SMALLPOX.—UNITED STATES: Ohio, July 1-31, 58 cases; North Dakota, July 1-31, 21 cases; Pennsylvania, June 1-30, 47 cases; Virginia, July 1-31, 45 cases; Washington, June 1-30, 78 cases.

SMALLPOX.—FOREIGN: Algeria, May 1-31, 11 cases; British East Africa, June 1-30, 5 cases; Chile, July 7-20, 6 cases, 4 deaths; China (Hong Kong and Shanghai), June 24-July 29, 4 cases, 0 deaths; Egypt (Cairo), June 24-July 1, 1 death; Honduras, July 29-31, present; India (Bombay and Karachi), July 7-13, 19 cases, 17 deaths; Italy (Rome), March 31-April 6, 1 case, 1 death; (Naples) July 21-27, 1 case; Java, June 30-July 6, 3 cases, 1 death; Mexico, March 11-August 4, present, 3 cases, 30 deaths; Portugal (Lisbon), July 21-27, 4 cases; Russia (Riga), May 1-31, 2 deaths; Spain (Sevilla), July 1-31, 0 deaths; (Valencia) July 21-27, 5 cases, 1 death; Straits Settlements, July 14-29, 3 cases, 4 deaths; Turkey (Reirut), July 14-27, 20 cases; (Constantinople) July 27-August 4, 28 deaths; (Dardanelles) June 23-July 20, 7 deaths.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending August 24, 1912:

Baily, Howard H., Captain, Medical Corps. Granted leave of absence for two months. **Bartlett, William K., Captain, Medical Corps.** Granted ten days' leave of absence. **Birmingham, H. P., Colonel, Medical Corps.** Granted eleven days' leave of absence, effective August 23, 1912. **Carter, Henry P., Lieutenant, Medical Corps.** Relieved from duty with Field Hospital No. 1, Fort D. A. Russell, Wyoming, and assigned to station and duty at same post. **Divins, George C., Lieutenant, Medical Corps.** Relieved from duty with Ambulance Co. No. 1, Fort D. A. Russell, Wyoming, and assigned to station and duty at same post. **Drake, Percy G.,**

First Lieutenant, Medical Reserve Corps. Granted thirty days' leave of absence. **Dutcher, Basil H., Major, Medical Corps.** Orders directing him to proceed to Fort Leavenworth, Kansas, for duty at the Army Field Service Schools at that post is revoked. **Hall, James F., Major, Medical Corps.** Left Fort Strong, Mass., on seven days' leave of absence. **Hanson, Louis H., Captain, Medical Corps.** Ordered to Fort Wadsworth, N. Y., for temporary duty, relieving Lieutenant Harley J. Hallett, who will return to his proper station. **Kendall, William P., Lieutenant Colonel, Medical Corps.** Left Fort Riley, Kansas, on thirty days' sick leave of absence. **Miller, E. W., Captain, Medical Corps.** Granted ten days' leave of absence. **O'Connor, R. P., Major.** Ordered to the Letterman General Hospital, San Francisco, Cal., for observation and treatment. **Perley, Harry O., Colonel, Medical Corps.** Granted forty-five days' leave of absence. **Purnell, Harry S., Captain, Medical Corps.** Granted thirty days' leave of absence. **Reasoner, M. A., Captain, Medical Corps.** Leave of absence extended ten days. **Williamson, L. P., Lieutenant, Medical Corps.** Relieved from duty at Fort D. A. Russell, Wyoming, and will repair to Washington, D. C., and report to the Chairman of the Isthmian Canal Commission for duty with the commission on the Isthmus of Panama.

Births, Marriages, and Deaths.

Born.

Carpenter.—In West New Brighton, Staten Island, N. Y., on Sunday, August 18th, to Surgeon Dudley N. Carpenter, United States Navy, and Mrs. Carpenter, a daughter.

Married.

Beck.—Best.—In Jeffersonville, Ky., on Thursday, August 15th, Dr. John M. Beck, of Louisville, and Miss Laura B. Best. **Noble.—Gill.**—In Boston, on Tuesday, August 20th, Dr. Emery C. Noble and Dr. Mary E. Gill. **Runnalls.—Munsen.**—In Seattle, Wash., on Friday, July 26th, Dr. T. H. B. Runnalls, of Puyallup, and Miss Mary Elsie Munsen. **Steckbeck.—McCallum.**—In Reading, Pa., on Wednesday, August 14th, Dr. D. Walter Steckbeck and Miss Maude McCallum.

Died.

Alford.—In Alameda, California, on Thursday, August 15th, Dr. Benjamin Michael Alford, aged seventy-nine years. **Beck.**—In Philadelphia, on Thursday, August 15th, Dr. J. Howard Beck, aged fifty-nine years. **Brendel.**—In Peoria, Ill., on Saturday, August 10th, Dr. Frederick Brendel, aged ninety-two years. **Buckel.**—In Oakland, Cal., on Saturday, August 17th, Dr. C. Annette Buckel, aged seventy-nine years. **Donnell.**—In Cincinnati, Ohio, on Friday, August 16th, Dr. Clifton L. Donnell. **Garlock.**—In Racine, Wis., on Tuesday, August 13th, Dr. Franklin R. Garlock, aged seventy-two years. **Hoback.**—In Roanoke, Va., on Monday, August 19th, Dr. Andrew J. Hoback, aged eighty years. **Kotheimer.**—In Youngstown, Ohio, on Saturday, August 10th, Dr. John B. Kotheimer, aged fifty years. **Lattan.**—In Detroit, Mich., on Thursday, August 15th, Dr. Louis F. Lattan, aged forty-five years. **Miller.**—In New Castle, Pa., on Friday, August 16th, Dr. William Gray Miller, aged thirty-eight years. **Nolan.**—In Somerville, Mass., on Sunday, August 18th, Dr. Henry Stuart Nolan, aged thirty-eight years. **Peterson.**—In Port Lavaca, Texas, on Saturday, August 10th, Dr. William G. Peterson, aged thirty-nine years. **Rauscher.**—In Murray, Utah, on Thursday, August 15th, Dr. August Rauscher, aged seventy-nine years. **Robertson.**—In Birmingham, Ala., on Friday, August 16th, Dr. Thaddeus Lindley Robertson, aged seventy-six years. **Simpson.**—In Baltimore, Md., on Sunday, August 18th, Dr. George Washington Simpson, aged seventy-one years. **Wells.**—In Carlisle, Ky., on Thursday, August 15th, Dr. John M. Wells, aged sixty years. **Wells.**—In St. Louis, Mo., on Thursday, August 22d, Dr. Sarah Furnas Wells. **Worrall.**—In North East, Md., on Thursday, August 22d, Dr. Theodore A. Worrall, aged sixty-eight years.

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Original Communications.

YELLOW FEVER A STRICTLY HUMAN DISEASE.

By ARÍSTIDES AGRAMONTE, M. D.,

Havana, Cuba,

Professor of Bacteriology and Experimental Pathology, University of Havana; President, Board of Infectious Diseases.

Few facts in connection with yellow fever have been the source of more earnest investigation or greater worry on the part of sanitarians than the occurrence at irregular intervals between epidemic outbursts of the disease of the cases known as sporadic, the origin of which often remains a mystery to the local authorities.

In recent publications, and really only from the direction of the much perturbed Mexican republic, a sentiment of unrest and doubt in the solidly established facts relating to the mosquito doctrine of the infection's transmission has been developed, as the result mainly of the necessity to explain the appearance of cases of yellow fever in the State of Yucatan, where the previous epidemic seemed to have been extinguished (1); this has in part been aided by the efforts made to foist upon us the identity of a supposed parasite, named by its advocate a *paraplasma*, for which it becomes necessary to establish possible conditions of life that would be incompatible now with the present status of the subject and in discrepancy with the belief in the exclusive intervention of the mosquito in the process of man to man infection of the disease.

From the earliest period in the history of yellow fever, it has been frequently observed that even months after the apparent extinction of an epidemic, one or more cases may take place, often in another town, though more usually in the same community; needless to say, these cases denominated "sporadic" by the earlier writers, were always met with in the well recognized endemic zones, and these areas, as may be readily appreciated by a glance at the map, extended through countries which have never been particularly noted for their advanced political administrative development, some of them remaining even to-day very backward in their sanitary organization.

These conditions are prone to obstruct any thorough investigation in tracing the sources of infection in the majority of cases, and very directly contribute to maintain the disease only so much under control as to be properly comparable to smoulder-

ing fires which easily flare up on the addition of new combustible material.

The Spanish American war, by establishing a military government in Cuba, during which was accomplished our demonstration of the mosquito's rôle in the propagation of yellow fever (2), made it possible to raise the strongest barrier against this disease in the shape of a well organized sanitary department, with power and means to proceed, with almost absolute independence, in its campaign against all the infectious diseases. The high standard inaugurated by the American administration has been continued by its successors in the management of the Department of Public Health, so that since the first intervention (1899) there has not been a single case, nor even a "suspect" of yellow fever in the whole island that has not been thoroughly studied and all the particulars relating to it investigated, not only for the purpose of determining the proper diagnosis, but also in a manner to trace the origin of its infection. At no time has there been any reason to believe that other agencies than man and the mosquito had been at work in any given case; when we finally killed the last infected insect and cured (or buried) our last yellow fever patient, the parasite ceased to exist upon our territory, and I am convinced will never make its appearance again, unless imported from any of the well known endemic foci, or from unexpected sources (as in 1905 from New Orleans), where the earliest cases may remain unrecognized or unreported. The same phenomenon has taken place in Panama.

If any being, other than man and the mosquito, were concerned in the spread of yellow fever, as hinted at by Doctor Liceaga, the worthy president of the Mexican sanitary council, and vaguely suggested by other parties interested in the uprooting of well established facts, the work so easily carried out in Cuba, several cities of Brazil, and the Isthmus would have been certainly handicapped in such a manner as to have made the actual results deficient, if not absolutely unattainable.

If it were not for the respect due to some of the men engaged in discussing this question, and because as scientists we are compelled to take notice of all that comes from a scientific source, we should be tempted to ignore many of the arguments put forth in defense of theories long ago exploded through lack of confirmation or by the contradictory evidence of experimental and epidemiologic investigation.

One of these unsupported hypotheses is that one which avers that yellow fever may attack the lower animals, through which the causative agent may

continue to spread or be kept alive for considerable periods without attacking human beings who, presumably, inhabit the same town or country, or even with whom the animals may live in the closest intimacy. This preposterous idea, abandoned by the earliest writers, has been tamely suggested to explain the existence of yellow fever in Vera Cruz, made evident by the arrival of a case in Havana from said port, when no other cases had been reported before or have been acknowledged since; the suggestion has also been made, while pointing to the sudden outbreak in Merida, and other towns of Yucatan, after an interval of many months of a supposed freedom from infection.

Sir Robert Boyce (3), in a paper much commented upon, reported the endemicity of yellow fever in West Africa, from where, until then, only sporadic or imported cases had been announced; several distinguished men discussed this article, and some seemed to think that we must look for another agent than the recognized ones in maintaining this endemic condition.

Experience has shown how difficult it is, even in more highly civilized states, to obtain from the sick, their friends, or relatives data pertaining to conditions of life, business pursuits, associations, and wanderings before the investigator's first visit, sometimes through actual ignorance regarding the information demanded, often through the natural fear of the unlettered toward all authorities. Many times, in the attempt to hide visits to "unholy places" or a recent orgy, men will refuse to give particulars or wilfully mislead the sanitarian in his quest for details of the previous history of the case. Add to this the reluctance on the part of the natives to consult physicians, except at the last moment, if then, and the difficulties met with in tracing the source of any infection in countries like Mexico or West Africa will be better appreciated.

Beside this, yellow fever may be present in a native community without the knowledge of the authorities for a considerable period of time, if restricted to the native population, maintained principally among the more susceptible children, where the disease is usually diagnosticated as something else, and the mortality is much lower than when the disease invades the adult foreign population, so that an epidemic may be considered stamped out, even for months, until a known foreigner is struck down with a severe and typical attack, for a foreigner has generally the sporadic case, or the first of an epidemic. Even in the case of nonimmunes, while there is a feeling of security derived from the belief in the nonexistence of the disease in the locality, the diagnosis of yellow fever is generally made only in the case of a severe and typical clinical picture; although suspecting the identity of the less pronounced or atypical cases, physicians are often averse to sounding the alarm for fear of being subsequently pointed out as the first to cast suspicion or odium upon the town, city, or country, as the case might be, by having reported the first case of yellow fever. It is painful to contemplate how men who otherwise stand high in the opinion of their fellow citizens, will not take a step toward aiding the authorities in discovering yellow fever cases, will not hesitate to give ambiguous, if not

evasive answers, and in every way will passively obstruct the sanitarian's work when dealing with this disease. To cite no more than one example of the great difficulty in accounting for the source of infections which under other conditions would incline one to believe in "spontaneous generation," I may be allowed to record the following:

In 1901, as soon as we (the U. S. Army Board) had demonstrated the mosquito's agency in propagating yellow fever, the disease was quickly eradicated from Cuba; the republic was established in 1902, and from a sanitary standpoint everything was flourishing. The copper mines which for more than 300 years had been worked in the Eastern part of the island had begun to render such results that the company decided to establish a smelting plant right on the harbor of Santiago, whence the metal itself could be readily and directly exported. In the later part of October, 1904, a report reached the sanitary authorities to the effect that a suspicious case of yellow fever had appeared in the person of a young smelter, employed by the copper mining company, who had recently arrived from the States. Immediately after sending telegraphic instructions from Havana, Doctor Guiteras went to Santiago and confirmed the diagnosis of yellow fever in the case of the man Fuller. The history of the case is interesting. Fuller had arrived directly from New York three weeks before taking sick and had remained in the neighborhood of Santiago (where no cases of yellow fever had occurred since 1899), visiting the city, across the bay, on the 15th and 16th of October; he became ill on the morning of the 18th or during the previous night. It was absolutely impossible to trace the origin of this case; the imperfect fumigation made, allowed the development of but one other case, in a fellow workman (Slater), eighteen days after, who had been living in the same barracks previously occupied by Fuller. Both cases ended favorably and no other occurred. It was many weeks after that Fuller confessed to having gone on board a steamer in the bay, while returning one night from the city of Santiago, for the purpose of playing cards with some friends; the said steamer had a cargo of cattle from Venezuelan ports and was under quarantine at the time. Fuller had had to crawl in and out through a window in the stern, so as to avoid being seen by the authorities in charge. Evidently, an infected mosquito in that steamer was the source of his infection; still, the case of Fuller has gone on record as one of our *autochthonous* cases of yellow fever.

We must rely then upon the sagacity of the epidemiologist on the one hand and his facilities for obtaining the previous history of cases on the other, to establish the links which necessarily join a presumably extinguished epidemic to the next case, in the same territory, when the possibility of importation can be excluded.

Aside from the causes above mentioned, which might be called the personal factors concerned in maintaining a false sense of security for varying periods of time, the question of the longevity and prevalence of stegomyia must be taken into consideration.

The experience in Cuba, Panama, and Rio de

Janeiro has demonstrated that the accidental introduction of a case of yellow fever is not accompanied by great danger of spreading the infection, if the number of *stegomyia* mosquitoes, by a proper and continuous sanitary campaign, is kept down in a proportion which Gorgas has called "the yellow fever level." As may be readily understood, this condition can be of only relative utility in keeping out yellow fever, but, just as few mosquitoes widely spread means fewer chances of infection, the prevalence of *stegomyia* in a community stands for greater opportunity for the propagation and conservation of the specific parasite. Thus we find that sporadic cases spring up, or epidemics are suddenly started, in such localities only as have neglected or cannot keep up an active and effective antimosquito campaign. In connection with this I may mention the astounding fact reported, that "ninety per cent. of the mosquitoes met with in the city" of Merida (Yucatan), are *stegomyia* (4); and it is with the purpose of explaining the sudden outburst of an epidemic of yellow fever in that city, that the authorities are wondering whether anything else than the mosquito's agency would not be more applicable!

In Cuba we have had evidence of these periods of "suspended animation," in the epidemic which really extended from the fall of 1905 (when the disease invaded the island from New Orleans), until the end of 1908, when the last case occurred. In Havana, for instance, no cases of yellow fever were reported from February 7 till June 2, 1906; none came down during July. The last infection in 1906 was made manifest December 24th and until August 24, 1907, no case of yellow fever developed in this city, which then contained more than 74,000 white foreigners. The last interepidemic period of "clean bill" for Havana was from January 31 to September 7, 1908; this last case was evidently introduced from the eastern part of the island. If this has been possible in a city like Havana, with a remarkably high proportion of nonimmune population and at a period when the whole sanitary forces were carrying out a vigorous campaign throughout the island, where several infective foci were known to exist, we see no cause for wonder at the outcrops which have lately manifested themselves in Mexico, at present suffering from profound political turmoil, with a comparatively imperfect sanitary organization; and much less can we be surprised when we learn the actually neglected condition of sanitary matters in Yucatan, where, if some halfhearted attempts are made in pretending to carry out modern prophylactic measures, there is not, as among us, that deep rooted faith in the absolute truth of the exclusive mosquito transmission, nor the belief in the possible susceptibility of some of the natives and most of the children (5).

Parasitological investigation could be of no value in elucidating the question of endogenous epidemics of yellow fever, unless the presence of the parasite, if ever discovered, is shown normally in the tissues of some of the lower animals; this has never been done in the case of insect borne diseases of man, except experimentally and in rare instances. Yellow fever in this respect is, fortunately, particularly re-

stricted, for any investigation in this direction may well be confined to the domestic animals, especially to those which are kept in cities and towns, inasmuch as the disease is one which has never spread in thinly populated districts, remaining localized about the human habitation, by the way, the normal habitat of *Stegomyia calopus*.

A great many years ago, as I suggested above, it was believed by many that some of the lower animals often suffered from this infection, especially so in the so called yellow fever zone, which included the Gulf ports of Mexico, Havana, and the Brazilian coast cities.

When I arrived in Havana, in 1898, charged by Surgeon General Sternberg with the bacteriological investigation of yellow fever, I was frequently told of animals, those imported from the United States principally, which a short time after their arrival suffered from fever and other symptoms very much like those under which so many Spanish soldiers died with the diagnosis of yellow fever. This, even among well informed physicians, was firmly believed with regard to horses and dogs, and in fact, one of the latter animals, a pedigreed deerhound, which had been recently imported from one of the Southern States, was brought to the laboratory of the *Cronica Medico-Quirurgica*, for my examination; the history was mainly one of fever, lassitude, anorexia, for nearly two weeks, with swelling of the extremities and "black vomit." The blood examinations showed it to have been a case of filariasis, (*Filaria immitis*?) and the autopsy, a month after, revealed the parent worms in the cardiac cavities.

Respecting horses, the "acclimatization fever" which may even now develop, after the island has been rid of yellow fever for several years, is a well known bacterial disease, a streptococci or a pasteuriosis. We no longer hear of cases of yellow fever among the lower animals in Cuba.

Experimentally, numerous attempts at inoculation have been made, the only successful one with a chimpanzee by Thomas, in Brazil. Most of the unsuccessful ones, no doubt, have remained unreported, having been undertaken in the course of experiments tending to investigate the etiology of yellow fever. While pursuing his extensive researches upon this infection I am told that General Sternberg inoculated numerous laboratory animals with material from yellow fever cases in Havana; his results must have been unsatisfactory.

During the preparation of my first contribution to the study of this disease (6), with abundant material at my command, I have taken animals to the bedside of the sick (at Nuestra Señora de los Angeles Hospital) and injected them with venous blood, as well as with fecal matter and "black vomit." Of these experiments I have very incomplete records and they are therefore of little or no value; but subsequently, when the mosquito inoculations were being performed at Camp Lazear, I have applied infected insects (on one occasion two very effective ones) upon the abdomen of a female rhesus monkey without producing the slightest disturbance. It may not be entirely amiss to quote here from my notes on these three attempts.

January 3, 1909, rhesus monkey, Johnny Applied to ab-

domes, one mosquito (*Culex fasciatus*), fed twenty days before on yellow fever case in the first day of the disease (Nicanor Fernandez).

January 5, 1901, rhesus monkey, Jenny. Applied to abdomen, two mosquitoes (*Culex fasciatus*), fed twenty-two days before on yellow fever case in the first day of the disease (Nicanor Fernandez). Only one filled entirely.

January 13, 1901, rhesus monkey, Jenny. Three mosquitoes applied to abdomen; they had fed ten days before on yellow fever case in the second day of the disease (José Martinez).

No result was obtained from any of these inoculations. The two mosquitoes applied to the monkey on January 5th (together with the one applied two days before and another one which was accidentally killed), when made to bite a nonimmune Spanish immigrant on December 30, 1900, brought him down with a severe attack of yellow fever on January 3d, thus showing that at that date (December 30th) the insects were surely "charged." The negative result of the monkey inoculations is therefore of some importance, when taken in connection with the evident infectivity of the mosquitoes at the time of their application.

On January 4th, at a time that a man (W. C. Jernegan), was inoculated with two c. c. of blood taken from the median basilic vein of a yellow fever patient in the second day (José Martinez), four guinea-pigs received each respectively two, three, four and five c. c. of blood from the same source. No result was obtained with the animals. Jernegan turned out to have a severe case of yellow fever and his blood served to produce another, a third case in series, through direct blood injection (Wm. Oisen).

At the division laboratory of Hospital No. 1, I repeatedly inoculated guinea-pigs, rabbits, and dogs with "black vomit," bloody sputa, and excreta, from well authenticated cases, obtaining illness or death of the animals only as a result of bacterial infection due to the contaminated conditions of the material employed.

The positive results noted by earlier observers, Wasdin and Geddings (7), and the New Orleans Parish Society's Commission (8), with *Bacillus icteroides* (Sanarelli), in which they contended they had infected dogs in various curious ways, must be discarded as absolutely irrelevant, as far as yellow fever is concerned.

In view of these facts, and until further and more convincing evidence than mere theorizing is brought in its support, and inasmuch as the mosquito's life is not shortened by carrying the virus of the disease, nor does the insect seem to be in the least affected by its power of infectivity, I feel justified in holding the opinion indicated by the title of this paper in that *yellow fever is a strictly human disease*.

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PNEUMONIA IN CHILDREN.*

By H. LOWENBURG, A.M., M.D.,
Philadelphia,

Assistant Professor of Infantile Diseases, McChesnut-Hill College;
Pediatricist to Mt. Sinai Hospital, Assistant Pediatricist to
the Philadelphia General and the Medical
Chirurgical Hospitals, etc.

In this paper the more important points of symptomatology, especially those dealing with atypical types, diagnosis, and treatment, alone will be considered, and the term pneumonia, except where specified, will include both the so called bronchopneumonia and lobar varieties met in infancy and childhood.

SYMPTOMATOLOGY, ONSET.

This need not be necessarily sudden, especially where it follows one of the acute exanthemata or bronchitis. It may be characterized frequently, in infants and young children, by eclampsia. In fact a rigor is rarely seen. A convulsion, associated with a temperature above 103° F. should be regarded with suspicion, as perhaps, the onset of one of the acute infectious diseases, of which pneumonia is by no means the least likely. This is particularly true under one year of age, although it occurs up to the ages of four and five years. In a certain proportion of cases the onset is with fever alone. These are the most mystifying cases to the inexperienced and to those who have met this type for the first time. A child, previously healthy, is taken ill with high temperature. The physician is summoned and makes a most careful examination, which avails him nothing. He prescribes calomel and a fever mixture. The next day the temperature remains at a standstill, or it may be higher. Again, he interrogates heart, lungs, ears, digestive system, *et alia* without result. Physical examination is absolutely negative. At this juncture, being at a loss to diagnose the cause of the complaint and to alleviate it, he may be displaced by another practitioner, who, in turn, may be followed by another and perhaps one or two consultants. By this time, the disease having run its course, the temperature falls by crisis, and the last doctor gets the credit for doing what Nature accomplished for him. My right to nominate this type of case pneumonia may be questioned and it is for this reason that I wish to discuss the matter more in detail. Every physician has met these cases. I have seen a great number in private work and in consultation. If not pneumonia, what are they? Are they influenza? Perhaps yes, and perhaps no. "Yes," because when we cannot place our fingers upon the nature of an acute infection, we call it influenza just as in an obscure chronic ailment we call it neurasthenia. Personally, whenever I make a diagnosis of simple influenza, I feel a little ashamed of myself privately, as I really regard this as a "dust heap" for ignorance. "No"—not influenza, for in a large number of cases which I have examined I have been able to demonstrate, a leucocytosis. Given, therefore, a disease of sudden onset, characterized by high fever and leucocytosis, unassociated with other demonstrable symptoms or physical signs, ending with crisis, it

*Read before the Southeast branch of the Philadelphia County Medical Association by invitation.

seems to be reasonable to regard it, in the light of our present knowledge, as pneumonia—without a lesion in the lung—the symptoms being due, perhaps, to a pneumococcemia, if you will, i. e., the organism and its toxins inhabit the blood and in this way give rise to symptoms, or the lesion in the lung may be so small as to escape the most acute diagnostician and yet sufficiently potent to permit of the absorption of an exceeding active pneumotoxine. In yet other cases two or three days after the temperature has risen, and even perhaps after crisis has occurred, cough will appear and physical examination will reveal roughened breathing and a small area of consolidation. These, the so called central pneumonias, are frequently apical occurring in the majority of instances on the right side.

Cough is frequently absent or repressed on account of the accompanying pain, or for the same reason it is associated with sudden crying. Respirations are short, catchy, and hurried and can be observed with accuracy only during sleep, as generally nervousness and fright prevent an exact count. In very young infants it is best not to lay the hand on the chest, but simply to watch the covers and count how many times they move up and down. The respirations, likewise, may be repressed or be accompanied by an irritable cry, or a grunting sound, due to the pleural pain.

Pain manifests itself in young infants by the irritable cry just referred to, or the infant may favor the affected side. In older children, a common occurrence, and one upon which too much emphasis cannot be laid, because it is a frequent factor in misleading the physician, is abdominal pain. The legs may be retracted and the abdominal muscles may be rigid. In right sided lobar pneumonia, where severe right sided abdominal pain is experienced, associated with leucocytosis and obscure or absent pulmonary signs, the abdomen has on more than one occasion been opened and the appendix found to be normal. Bearing this in mind the opposite mistake must not be made, as I have seen a perforated appendix associated with pus, diagnosed as pneumonia and operation delayed too long by a physician who scouted the idea that appendicitis could occur in a two year old child, until he was convinced by autopsy. Some of these cases, especially those types of pneumonia in which the physical signs are late in appearing, are exceedingly difficult of diagnosis and are nerve racking to the careful physician. A point to remember then, is to examine the chest in all cases of severe abdominal pain in children and never fail to make a careful rectal exploration as well.

PHYSICAL EXAMINATION.

There is not much to be said in reference to physical signs themselves. Much may be said, however, as to the manner of eliciting them. Much can be learned by *inspection*, especially if the infant is observed while asleep. In fact, pulmonary disease may be recognized or eliminated almost at a glance of the sleeping child. Movement of the *ala nasi* during sleep is especially suggestive if there are no sign of obstructive dyspnea. Ofttimes one side of the chest is fixed, or the infant lies on the affected side, or the whole chest is fixed and the entire respi-

ratory movement is abdominal. Cyanosis is especially noticeable in bronchopneumonia. *Palpation* is of considerable value in the diagnosis of bronchopneumonia of a diffused character. Here the fremitus produced by the scattered râles (bronchial fremitus) when obtained, is just as valuable as the results of auscultation. The only way, in infants, to detect differences in fremitus is to make them cry, a very poor procedure unless delayed until the last, for it may destroy the value of the rest of the examination. *Percussion* is of great assistance, but must be practised with care. The hand should be previously warmed. The chest should be bare. The physician's position should not be cramped. The child should either lie upon a flat table or be held in a sitting posture on the nurse's or mother's lap and not against her breast, as the side held close to her will often give a note of impaired resonance when no such impairment exists, and the side held farthest from her may give a resonant note when really there is consolidation beneath. The infant's hands must be held so that they do not interfere with those of the physician. Points to be remembered are that an examination of the axillæ of both sides should never be neglected, that in young infants an enlarged thymus may give impairment on either side of the first piece of the sternum, especially to the right as low as the second rib; that posteriorly on the left side just within and above the angle of the scapula, there is a normal area of impaired resonance due to the heart, and at the tenth rib, posteriorly, begins splenic dullness. On the left side, anteriorly, the upper level of relative cardiac dullness is at the lower border of the second costal cartilage. The upper level of absolute cardiac dullness is at the third costal cartilage. Relative cardiac dullness extends to the right as far as the parasternal line and to the left a little beyond the mammary line, as low as to the sixth rib. Absolute cardiac dullness is limited by the left border of the sternum on the right. To the left it extends midway between the parasternal and mammary lines. The lower border runs into hepatic dullness. In early infancy and up to one year, the normal position of the apex of the heart is the fourth interspace and a little beyond the mammary line. In early childhood it may occupy either the fourth or fifth interspace in the mammary line. After puberty it is normally situated in the fifth interspace to the inner side of this line. On the right side, anteriorly, the upper border of liver dullness is at the fifth rib in the mammary line. In the midaxillary line it is at the seventh rib, and posteriorly it is at the ninth rib. It is essential to remember these areas of impaired resonance so as not to regard them as consolidations. Perhaps more important than all this is the manner of percussion. It should be extremely light, the percussion stroke consisting in barely more than the laying of the plexor finger upon the pleximeter finger. In this way the area immediately under the finger alone is brought into vibration and none of the neighboring hollow viscera. It should ever be remembered that on the whole percussion is of comparatively little assistance in the diagnosis of bronchopneumonia, for it is extremely difficult to outline small areas of con-

solidation. In these instances, our conclusions must depend entirely upon the association of cough, fever, dyspnea, cyanosis, and râles felt and heard over both sides of the chest. To wait until we can demonstrate consolidation by percussion before diagnosing pneumonia is manifestly dangerous, since it would be far safer to err on the opposite side, i. e., to regard a case of bronchitis as bronchopneumonia.

Insultation affords valuable information, but it is not always practised with ease. Good results are hard to obtain without a stethoscope, which should be warmed before being brought into contact with the infant's chest. The ordinary bell binaural type of instrument is to be preferred as the phonendoscope exaggerates unimportant sounds, and is therefore confusing. The contact between the chest wall and the instrument should be perfect, but no undue pressure should be used. If possible, auscultation should be practised during sleep, although to the experienced ear crying does not interfere with the results obtained. If the baby is awake it should be allowed to play with the instrument before it is used, and the end should be warmed. Harsh breathing, the so called puerile respiration, is frequently nominated tubular breathing. At times it is difficult to distinguish tubular breathing from bronchovesicular breathing, inasmuch as all shades of the latter exist, it being a combination of the bronchial and vesicular tones, each modifying the other in different degrees in different instances, depending upon the amount of consolidation present and the quantity of intervening healthy lung tissue. A distinguishing point, however, that can always be relied upon to separate these two types of breathing, is that in bronchial breathing expiration always equals or exceeds in length the inspiratory portion of the breath sound. In many cases of bronchopneumonia proved by autopsy, the only physical signs obtainable were râles diffusely scattered throughout the chest, as mentioned before.

A sign described by myself in the *Journal of the A. M. A.* as peculiar to children, is that normally the inspiratory sound on the left side, especially posteriorly, is harsher and louder than on the right side. The interest attached to this is more than academic. It may be of considerable assistance or cause much confusion, leading to many erroneous conclusions as I have seen.

TOXEMIA.

This is an important feature. The prognosis varies directly as the intensity of the toxemia. Many cases are toxic from the beginning. These are the types that begin with hard convulsions and high fever and are associated with much restlessness, leading to delirium, somnolence and coma. The more intense are these manifestations the graver is the prognosis. Two types of temperature are met in these extremely toxic cases—hyperpyrexia and comparatively low temperature—reaching only 101° F. to 101.5° F. Of the two a temperature of 106° is the most favorable, if not continued too long. It is usually associated with a high leucocytosis and indicates an intense reaction of the economy to the pneumonia toxins. The latter condition—associated with delirium and somnolence—is of grave omen.

is accompanied commonly by a low leucocyte count and indicates a feeble reaction of the tissue to the invading poison—a feeble resistance seen in asthenic conditions. Lobar pneumonia, dependent upon a previous attack of influenza, or associated with it, does not present a typical temperature. We here frequently see an irregular type of fever with the lowest record in the afternoon—a direct reversal of the usual type. The fall in temperature is here accompanied by lysis. In bronchopneumonia, which naturally presents an irregular temperature, the same peculiarity obtains.

DIAGNOSIS.

The diagnosis of the disease, when typical, is easy; in atypical cases it is often difficult. It is impossible clinically, especially in the beginning, and practically scarcely ever possible pathologically to distinguish between acute primary bronchopneumonia, especially if unilateral, and acute lobar pneumonia for the reason that the involved lobules may be of sufficient number and sufficiently close together to give the impression of an entire lobe. The physical signs do not assist us. Careful inquiry may usually elicit the presence of a previous cold or bronchitis or involvement of the other side. This would lead to the suspicion of bronchopneumonia. This involvement may take the form of consolidation or of a diffused bronchitis. Later the expected crisis does not come, and, the temperature becoming somewhat irregular, falls gradually. The question as to whether tuberculosis is the basis for the acute attack can only be surmised in the beginning by the previous history and later confirmed by the development of the characteristic temperature, the low leucocyte count (unless there is mixed infection), the presence of the von Pirquet or other tuberculous reaction.

From secondary bronchopneumonia the diagnosis is not difficult. Here we are assisted by the previous history of bronchitis or of an acute infectious disease, catarrhal symptoms, the irregular temperature, the fall by lysis, the bilateral situation of the lesions, the presence of râles diffusely scattered over both sides of the chest, either associated with, or unaccompanied by demonstrable areas of consolidation. Here it should be emphasized that one is justified in making the diagnosis of bronchopneumonia without the physical signs indicating focal consolidation, if there be present the association of cough, high temperature, rapid breathing, cyanosis, and scattered râles.

With reference to the type of lobar pneumonia designated as central it is at times most difficult to arrive at a conclusion. All we have in many of these cases is elevated temperature and leucocytosis, as mentioned previously. Many patients do not even cough. I recently saw a case of this kind in which cough and physical signs first appeared on the day of crisis. The onset is often with a convulsion. This, associated with temperature, leucocytosis, and later cough, rapid breathing, no physical signs, except perhaps a little harshness or a few deeply seated fine râles and fall by crisis, or the development of consolidation a day or two before crisis is the usual clinical history of this condition.

Frank lobar pneumonia, more common in older

children, requires no description from me, its characteristic symptoms being familiar to all. However, there are certain conditions from which we must distinguish it, as they are frequently overlooked and the case recorded as pneumonia with consequent disastrous results. First, in children, pleurisy with effusion may present features that are confusing. In pleurisy we frequently find loud tubular breathing over a large effusion. So, too, in many instances, vocal fremitus and vocal resonance may not be diminished. There are cases of pneumonia in children in which the breath sounds at the bases are very feeble indeed. These lazy breathers, as I have been pleased to call them, do not breathe sufficiently deep to inflate the entire lung and therefore the weakness of the sound may lead to the suspicion of fluid and an unnecessary exploratory puncture be made. In these cases the lesion is usually apical. What of the cases of large pleural effusion and empyema over which large loud tubular breathing and undiminished vocal fremitus or vocal resonance are obtained? How are we to distinguish them? In some of these cases, too, flatness is not obtained, there being but the slightest evidence of impaired resonance, which, however, is extensive i. e., *the area over which it is obtained involves, perhaps, a whole side, extending up into the axilla and is far out of proportion to the relatively slight dyspnea which would be intense did this extensive area of impaired resonance depend upon lung consolidation.* I wish again to emphasize the importance of light percussion in bringing out this slight impairment of resonance; also again to direct attention to the importance of percussing the axilla. The neighboring hollow organs being readily set into vibration influence the percussion note. Another sign of importance in making for the diagnosis of effusion is the dislocation of the heart, liver or spleen, as the case may be, depending upon the side involved. Again, if the inspiratory sound on the left equals in intensity that on the right, or is weaker, it suggests fluid on the left, or pneumonia on the right, especially if the latter be markedly intensified.

Acute otitis media should not, but frequently is, diagnosticated as pneumonia until the aural discharge indicates the error. Fever increases the respiration. This intensifies the normal harshness of the inspiratory sound on the left side and this leads to the diagnosis of pneumonia. The moral is *never to fail to examine the ear drums of all children suffering from an acute attack of high temperature and to recognize as normal the difference between the intensity of the inspiratory sounds of the two sides of the chest.*

The pain of pulmonary disease referable to the abdomen, especially on the right side, associated with constipation and drawing up of the legs and rigid muscles, may lead to the diagnosis of appendicitis as previously referred to. I am free to confess that the distinction is not always readily made, and that I have been on more than one occasion puzzled for a time. Leucocytosis occurs in both; cough, the appearance of physical signs sooner or later, and the results of a rectal examination are the only means of distinguishing some of these cases.

Pneumonia and cerebrospinal meningitis may be

confounded, especially when the onset of the former is with convulsions and there is extreme toxemia. In these cases our conclusions must rest entirely upon the presence or absence of physical signs referable to the chest, Brunsinski sign, Kernig's sign, Babinski's sign, and especially the results of lumbar puncture.

Acute pneumonic phthisis is rarely found in infants and young children. I remember but one case under a year that came to autopsy which showed cheesy consolidation and cavity formation with miliary deposits throughout the liver and spleen. The differentiation from lobar pneumonia cannot be made early in these cases and can only be suspected when the expected crisis does not come, and can be confirmed only by the persistence of the signs of consolidation, the development of cavity, and a positive tuberculin reaction, the irregular temperature, emaciation, the leucocyte count, and other signs of tuberculosis, too many and too familiar to enumerate.

Perhaps a more common differentiation that is frequently attempted is that between a diffuse bronchitis, involving the finer tubules, and bronchopneumonia. Personally I never attempt it, as I believe it is unnecessary, impracticable, and far safer to regard all these cases exhibiting fever, cough, catarrhal symptoms, dyspnea, some cyanosis, and diffusely scattered small and large moist râles as bronchopneumonia. Just because no areas of consolidation can be localized is no proof that they do not exist—the accuracy of our skill in physical diagnosis to the contrary notwithstanding. I shall have more to say of this class of cases under treatment.

TREATMENT.

The treatment of pneumonia is perhaps a matter of personal experience and of personal preference. Many cases end in recovery with treatment, others without treatment, and still others in spite of over-treatment. It seems to me that perhaps the best thing to do for a case of pneumonia, is to let the disease alone, secure as perfect a hygiene as possible, seek to prevent certain complications by anticipating them, and to handle them intelligently when they do appear. Yet I know that, while making these statements, many are able to recall cases which, with Nature's assistance, were piloted through to safety in spite of the most miserable hygienic surroundings. This leads us at once to the question of ventilation and the so called fresh cold air treatment. The public has not as yet been educated up to the point to believe that cold air is a panacea for all cases of pneumonia and absolutely free of all danger, as first enunciated and emphasized by Northrup. Nor is the profession by any means united on the matter. Some of the brightest pediatric minds are strong advocates for an unlimited supply of cold fresh air. Others of equal brilliancy, but of a more conservative mould, would see less good in it and considerable danger. Perhaps a middle ground, calling for an unlimited amount of constantly changing fresh air warmed to a temperature not above 68° F. or 70° F. will be the correct attitude of the future. My own experience with cold, fresh air has been extremely satisfactory, but I cannot truthfully say that recovery in each instance

would not have taken place had it not been used. It creates a hardship upon the nurse or whoever may be in attendance. It has the one good feature of keeping unnecessary visitors from the sick chamber. Other patients I have had that have done exceedingly well with a room temperature of 68° or 70° F., with good ventilation. My feeling is, however, that desperate cases, showing much cardiac weakness, dyspnea, and cyanosis should have the benefit of the cold air treatment with abundant covers and a hot water bottle at the feet.

While I have rarely found continuous stimulation necessary, depending more upon the proper selection of food, the correction of digestive errors, the proper action of the bowels, and the use of saline enemas to support the patient and prevent toxemia and its untoward results, I believe the physician should be able, in a sense, to "size up" the heart, as it were, and determine whether or not it will be able to carry his patient through. In this way cardiac asthenia may be anticipated and prevented. As a rule, stimulants should not be given by mouth, therefore the patient who requires them and cannot afford to employ a nurse had better be treated in a hospital. The best of all stimulants is strychnine, given in sufficiently large dose, grain 1/300 to grain 1/60, as the urgency of the case may demand. Oxygen inhalation, digitalis by mouth, or digitalin hypodermically, I believe, are of very little use. Alcohol can, in a majority of instances, be dispensed with, but, when used to meet an emergency, should be used with a free hand. In some cases associated with much restlessness and fretting stimulants do decided harm and add to the final nervous exhaustion. These cases are more benefited by sedation. The best of sedatives is a hypodermic injection of morphine, grain 1/500 to grain 1/150. Its effect may be life saving. The restful sleep following its use may be the very thing to save a failing heart and thereby turn the tide toward recovery. Arrhythmia and gallop rhythm are often steadied by carbonate of ammonium in the form of the aromatic spirits in conjunction with strophanthus m.j. or morphine. Where intense cyanosis, dyspnea, and many râles are present a mustard pack (one pound of mustard to one quart of hot water) followed by the hypodermic injection of atropine, or in some instances nitroglycerin, may be of considerable service.

Tympanites is a complication fraught with much danger and calls for energetic treatment. An initial purgative of castor oil, followed by a few drops of the milk of asafetida by mouth, the careful manipulation of the diet, the temporary exclusion of milk, substituting animal broths, colonic irrigation followed by a high enema of the milk of asafetida, turpentine stupes, or the application of a Priessnitz compress with a possible hypodermic injection of one dose of atropine, grain 1/300, are a combination of manoeuvres well calculated to overcome the difficulty.

High temperature should not be energetically treated unless it reaches 106° or more and remains stationary for a long time. Alcohol and water sponges and the application of a covered ice bag are simple, humane, and usually effective remedies. Cold baths or cold packs are profoundly shocking and of little use. The gradually cooled bath is,

however, a most efficient means of lowering high fever and of quieting the nervous system, if properly given. The whole body covered by a blanket should be completely immersed in water, the temperature of which varies between 100° to 110° F. The whole bath occupies from ten to fifteen minutes and the child is received into a dry blanket without drying and put to bed, and an ice bag is placed to the head. Friction is applied during the bath. This bath is usually followed by a marked fall in temperature and a quiet restful sleep, during which the heart and the nervous system are rested and from which the child awakens refreshed. Another efficient way of controlling hyperpyrexia is by a gradually cooled (from 100° to 75° F.) colon irrigation. It not only reduces fever but empties the colon, relieves tympanites, lessens toxemia, and quiets the nervous system.

Medicines. Aside from special remedies intended to combat special symptoms as stimulants and the others mentioned, there are no specifics for pneumonia. A few drugs may be of some service. I have employed the hydrochloride of quinine, hypodermically, in doses of one grain, with some probable benefit. The same is true of the natural preparation of sodium salicylate, grain half to grains two; sodium benzoate, grains two to three; hexamethylenamine, grains two to three; and equinine (quinine ethyl carbonate), grain half to grains two. All these measures are designed to control temperature and combat infection. They may do some good, but we have no way of proving it. With antipneumococcic serum and bacterins I have had no experience and therefore cannot speak of them.

In strong children suffering from the second stage of a diffused acute bronchitis, with mucus and many râles, who are "rattling" in the chest, or in cases of bronchopneumonia where the same condition prevails, where the children are said to be "choked up," I have adopted the following plan of treatment with much success, based upon the principle that what these cases need is drainage and something to control the inflammatory process as much as possible, thereby preventing the large re-accumulation of mucus. With this in view I seek to empty the bronchial tubes in two ways, by the mouth and by the bowels, and to control further production of mucus, through drugs which act on the secretory apparatus and to apply antiseptics directly to the mucous membrane. These patients first receive from one half to two teaspoonfuls of castor oil within one to one and one half hour; they get thirty drops of ipecac and fifteen minims of the wine of antimony every hour until emesis occurs, but not more than three doses are given. They then receive tincture of belladonna and the aromatic spirit of ammonia. The first is given in five minim doses every four hours, gradually increased to fifteen or twenty drops, and the latter is given in five to ten minim doses. Every other hour inhalations of the following are given: Oil of eucalyptus, four drachms; beechwood creosote, four drachms; oil of turpentine, enough to make four ounces. From one to two tablespoonfuls are added to a quart of water, which is kept boiling in the room for at least a half to one hour. During the interim the room is ventilated. The diet is kept low, and fever and other

symptoms are combated on general principles. Stimulation in these cases is rarely needed, but if it is, reliance is placed upon strychnine, quinine, and alcohol.

1502 DIAMOND STREET.

THE WASSERMANN TEST.

Some Factors of Nonspecific Inhibition.

By D. M. KAPLAN, M. D.,
New York,

Director of Laboratory, Neurological Institute, Serologist,
Montefiore Home.

It has long ago been established that there are diseases beside syphilis capable of giving rise to positive Wassermann reaction. These are, as is well known, leprosy, frambesia, malaria, scarlet fever, and at times measles. I have found it often present in scleroderma. Beside the above mentioned diseases, I have had the opportunity to ascertain in 1910 the effect of the addition of ox bile to negative sera; I found that it was possible to produce a nonspecific inhibition by such addition. This experiment suggested itself after a number of positive Wassermann reactions were obtained on jaundiced sera from patients in whom, post mortem, no lues could be demonstrated. This fact is very important when the causes of nonspecific inhibition are considered. Lately Craig, of Washington, observed that some patients' sera, being on one occasion positive, would become a negative at times a day or two later after a fresh puncture of the vein. An analysis of this change showed that this was most likely due to an immoderate imbibition of alcohol in most of the cases. Experiment with this in view proved that a liberal use of alcohol was capable of changing a positive Wassermann reaction into a negative one in a short time. These occurrences and many others show that the dangers of reporting false Wassermann reactions are quite numerous and often insurmountable. Beside these organic, nonspecific inhibitory influences, there are in the reagents used a number of factors which contribute considerably to the erroneous reporting of positive after a previous negative reaction, such as a weakening amboceptor, an anticomplementary antigen, a poor complement, or unduly resistant sheep cells. It is known that the full strength of the freshly obtained amboceptor declines with time. No matter how well preserved and kept, it loses its initial power to lake red cells. Sooner or later a time comes when the amboceptor becomes absolutely worthless. As we approach this period of amboceptor decay positive Wassermann tests are prone to be reported upon nonluetic material. It is advisable, therefore, not to use an amboceptor whose unit for working is less than one to 400. When the amboceptor is weak it is dangerous to use two units in the Wassermann test, as a nonspecific inhibition will be obtained in some instances. With such an amboceptor three units instead of two should be employed, and a fresh supply obtained as soon as possible. In standardizing the freshly obtained amboceptor it is not safe to use the "hemolytic system" alone. To obtain an insight into its hemolytic

powers when combined with sera and inhibitory extract, it is imperative to standardize the amboceptor together with these deviating substances. For this purpose 0.2 c. c. of a known, freshly obtained negative serum is used, together with two units of the inhibitory extract. Some laboratory workers obtain amboceptors strong enough to hemolyze the usual quantity of sheep cells in a one to 10,000 dilution. I can readily understand how this standard is obtained if one uses cells and complement only; the trouble begins when this amboceptor is used in a dilution of one to 5,000 as the hemolytic unit for the Wassermann reaction. Some of the positive reports obtained are then due to weak amboceptor, and not to syphilis in the patients. Evidently the addition of two molecules, which tax the powers of the hemolytic serum, or protect the sheep cells, are responsible for such results. To do away with this possibility the amboceptor is standardized in my laboratory as follows: First, the strength of the system is obtained in the following manner:

NO. 1.—STANDARDIZATION OF HEMOLYTIC SYSTEM.

Fresh guineapig serum 0.1 c. c.	
Fresh sheep cells, five per cent. suspension, one c. c.	
Amboceptor... 1:200	Complete hemolysis in 4 minutes
"... 1:400	" " " 6 "
"... 1:800	" " " 11 "
"... 1:1600	" " " 20 "
"... 1:3200	" " " 32 "
"... 1:6400	" " " 105 "
"... 1:12800	No hemolysis.

The amboceptor standardized as shown ought to bring about satisfactory results when used in a dilution of one to 3,200. In actual work, however, this dilution lacks hemolytic power when the normal serum and the inhibitory molecule are added. The following standardization takes into consideration the addition of nonluetic serum:

NO. 2.—STANDARDIZATION WITH NONLUETIC SERUM.

Same as No. 1 plus 0.2 c. c. of normal serum	
Amboceptor... 1:200	Complete hemolysis in 10 minutes
"... 1:400	" " " 17 "
"... 1:800	" " " 48 "
"... 1:1600	" " " 85 "
"... 1:3200	" " " 114 "
"... 1:6400	No hemolysis.

As gauged by this method the working unit ought to be one to 1,600, but as this standard does not take into consideration the possible interfering effect of the inhibitory extract, a restandardization with this factor introduced is desirable. With this in view, two units of the inhibitory extract are added to the contents of the test tubes, and the hemolytic unit is calculated from this final standardization.

NO. 3.—STANDARDIZATION WITH INHIBITORY EXTRACT.

Same as No. 2 plus two units of inhibitory extract.	
Amboceptor... 1:200	Complete hemolysis in 14 minutes
"... 1:400	" " " 25 "
"... 1:800	" " " 50 "
"... 1:1600	" " " 110 "
"... 1:3200	Incomplete " " 175 "

The foregoing method of standardization eliminates every possible error that may occur from the use of an inadequately gauged amboceptor. If the Wassermann reaction is positive after the addition of two, or preferably three, units of the foregoing amboceptor, it is to be considered a legitimate posi-

tive result, unless other factors interfere with its action. The most convenient amboceptor unit as obtained above is one to 600, being a little less than three and slightly over two units. This practically eliminates the chances for reporting an undue number of negative results in patients with an inadequate quota of reagines. Using an amboceptor of the foregoing strength, sixty-six per cent. of positive results were obtained in tubes.

The question of the inhibitory qualities of the so called antigenic molecule is next to be considered. This problem has been investigated by various experimenters, e. g., U. Friedmann (*Archiv für Hygiene*, 69), F. Lesser (*Berliner klinische Wochenschrift*, 21, 1909), Ehrmann und Stern (*Ibidem* 7, 1910), Joannowicz and Pick (*Ibidem* 20), J. Zeissler (*Ibidem* 21), D. M. Kaplan (*Medical Record*, November 19, 1910). These workers showed that the molecule of the inhibitory extract was a very complex one. They found that the substance, beside being capable of interfering with hemolysis, under suitable conditions might also produce just the reverse effect, hemolysis. This property was ascribed to the existence of hemolytic side chains attached to the central inhibitory body (*Leistungskern*). These side chains, probably unsaturated fatty acids, were found to be comparatively unstable, breaking down in the course of time into simpler molecules, more or less inert as far as inhibition is concerned, leaving the *Leistungskern* free. In this apparently degenerated condition, it is not at all impossible that such an extract, if not recently standardized, requires less of the extract than the original standardization showed. Such an extract will give rise to positive Wassermann reactions in a number of nonluteic sera, unless the inhibitory extract is gauged on the day of performance of the reaction.

The next element capable of producing or contributing to the number of nonspecific inhibitions is guineapig serum. The error may be due to either one of two causes. First, it happened that the serum on a few occasions was very poor in complementary powers. Upon investigation I found that while severing the animal's bloodvessels in the neck the esophagus was at times injured, permitting the contents of the stomach to contaminate the serum; it also happened that the guineapig urinated into the receptacle for the blood, weakening its powers. This accidental admixture of acid substances markedly diminishes hemolysis, resulting in very slow amboceptor action in the controls and giving rise to a number of positive results in authentic nonluteic sera. Second, owing to the scarcity of guineapigs it became necessary to economize in the use of complement and at times make use of serum left over and obtained some thirty-six to forty-eight hours previous to the day of analysis. It was found that such a serum is much weaker than one obtained twelve to eighteen hours previous to the testing. This weakness was especially noted on stormy or rainy days, when the controls would show no hemolysis in the slightest degree. It became necessary to use larger quantities of complement after appropriate standardization. The working efficiency of such a serum and its dose is ascertained by adding the old complement to a known fresh negative

serum, plus a full dose of inhibitory extract. The weakness of an old guineapig serum is evident from the following standardization:

STANDARDIZATION OF A FORTY-EIGHT HOUR OLD GUINEAPIG SERUM.

G. P. Ser.	Human X. Ser.	Antigen unit	Incub. at 37° C.	Antibodies units	Sheep cell c.c. 5%
0.1 c. c.	"	"	Hemolysis complete in 1 hour	"	None
0.125	"	"	"	"	"
0.15	"	"	"	"	1 hour 20 min.
0.2	"	"	"	"	49 min.

The foregoing standardized guineapig serum in 0.1 c. c. doses may give rise to nonspecific inhibition, and would certainly do this if the serum of a normal individual and the inhibitory extract were left out of the standardization. The proper dose of the foregoing for the Wassermann test is 0.2 c. c.

The next hemolytic obstacle is to be obtained in the patient's serum, be it positive or negative. This is observed without the addition of antigen (inhibitory extract). Used in a fresh state this interference is very slight, but when permitted to remain in the ice chest for any length of time, even if preservative substances were added of an inert nature (to hemolysis), substances develop that are at times very anticomplementary, and when not recognized may give the appearance of a legitimate positive Wassermann. It is advisable, therefore, whenever possible, to make use of sera for Wassermann work not older than twenty-four or thirty-six hours. When the serum is forty-eight hours old or more the container is to be marked accordingly, and the resulting inhibition carefully passed upon.

We also have an interfering factor in the sheep cells if not used on the same day as the slaughtering of the animal. Formaldehyde solution added to cells makes them more resistant to hemolysis as they age, and a time arrives when it becomes dangerous not to take this possibility into consideration. It is a particularly dangerous procedure to prepare a stock mixture of sheep cells and amboceptor to be used the following day. Such a suspension will often prove to be very resistant to hemolysis, and may not even show hemolysis in the amboceptor efficiency control.

The last factor, and by no means the least, is the ability and experience of the individual worker. The number of positives from beginners is dangerously large, stamping innocent people with syphilis. The best way for the physicians to control their laboratory workers is to submit for analysis the same serum in three different tubes, marked with three different names. It is advisable to begin with negative serum, and when the reports are favorable, the worker's efficiency in detecting a good luteic serum is next ascertained. Three differing results in such a case carry sufficient conviction as to the efficiency of the worker.

The suggestions offered in this communication are intended to draw the attention of the clinical laboratory workers to the fact that not all positive Wassermann reactions are of the specificity that is usually accepted, and that it is possible under the circumstances cited to obtain a nonspecific inhibition. The practising physician, again, is urged to test the ability of a worker from whom such important evidence is demanded.

CONCLUSIONS.

My conclusions in this matter are as follows:

1. There are diseases other than lues giving positive reactions.
 2. The old method of amboceptor standardization does not consider all the obstacles that it is designed to overcome.
 3. The ageing of the antigen is capable of producing inhibition in doses smaller than ascertained in the original gauging, and should receive attention on the day of the test.
 4. The complement question deserves care and attention, as stated.
 5. The patient's serum ought not to be older than forty-eight hours.
 6. Old sheep cells develop anticomplementary powers.
- 30 BEEKMAN PLACE.

VESICAL NEOPLASMS.*

By J. F. MCCARTHY, M. D.,
New York,

Assistant Attending Genitourinary Surgeon, Bellevue Hospital,
Instructor in Genitourinary Surgery, New York
Post-graduate Hospital

The subject matter of this paper will include such morbid outgrowths as have their origin in the urinary bladder, and as the time allotted is, under the circumstances, necessarily short, only the briefest possible résumé, together with some conclusions with relation to treatment, may therefore be presented. The author will quote freely from a previous communication (Tumors of the Bladder, by Dr. John F. Erdmann and Dr. J. F. McCarthy), which article thoroughly covered the work performed and observations conducted prior to that time.

Etiology: According to Caspar, specific diseases are not considered a causative factor. Calculi are doubtful and, while catarrhal cystitis may lead to proliferation of the vesical mucosa so that tumor-like outgrowths resembling villi occur, microscopically, however, they differ from true papillomata. Much doubt has been expressed as to the provocative action of irritating substances. The close observer, however, cannot fail to be impressed with the weight of evidence in its favor, as, for example, the observations of Goebel, of Alexandria, where the marked frequency of vesical outgrowth in the presence of the eggs of the bilharzia led him to question the effect of other irritations in this connection, and the conclusions also of Rehn, who insists on the relative frequency of these growths in workers in dye stuff, as aniline, fuchsin, and toluidine. It is probably a coincidence, but the writer has failed to find a single "water drinker" among any of the patients coming under his observation, and it may just be possible that faulty metabolism, such as long continued urinary hyperconcentration, may play an important etiological rôle. At all events, the suggestion may not be amiss that there be accorded closer observation and more widespread publication to this phase of the subject, particular attention being paid to the crystalline content.

Pathological anatomy: The microscopical aspect will not be taken up in this paper.

1. According to Albarran, the trigonum alone is rarely the seat of papillomatous invasion, this author having seen but one case in which it was involved alone. The consensus is that in the very great majority of cases the lower zone constitutes the chief seat of attack, the favorite site being behind, and to the outer side of either ureteral orifice. Such growths as a rule, however, do not involve the ureteral mouth. Fenwick states that the trigonum is in fact the only enclosed space in the bladder incapable of originating villous papillomata. Its density of structure may have something to do with this.

The outer wall is rarely invaded. The writer has noted this in three of the twenty cases coming under his observation. In six cases multiple growths were found, eight being clinically benign, while twelve were malignant.

Cystoscopically, with exceptions below noted, beyond ascertaining the exact situation, the extent of the pedicle, the size and general physical characteristics of the growth, one should not go, least of all should one attempt anything more than a tentative diagnosis, inasmuch as pedunculation is by no means a definite indication of benignancy (Albarran reports twenty-eight pedunculated growths, thirteen benign and fifteen malignant), and not infrequently do pedunculations present themselves as outriders of a malignant base.

Nor should much dependence be placed on the microscopical examination of fragments spontaneously expelled, while frozen sections at the time of operation are not infrequently misleading, and the fact that an induration of the pedicle at its site of implantation may be the result of an hypertrophy of the connective tissue element of a benign growth rather than an indication of malignancy, serves to accentuate an already complex situation.

Symptomatology and diagnosis: It is classical to describe the symptomatology as follows: An idiopathic, intermittent hematuria, usually total; rarely, when the growth is located in the region of the vesical neck, the blood will be more pronounced at the end of urination. This hematuria is capricious, entirely independent of external causes such as obtain in vesical calculi; in fact, it frequently is more marked when the patient is resting quietly in bed, disappearing and reappearing without discernible cause.

In a case of multiple growths coming under the writer's observation the hematuria invariably was more marked after playing tennis; while in another patient with two growths, one of which was situated in the region of the vesical neck, a ball valve effect was noted, the flow suddenly shutting off in the midst of the urinary act, which could only be completed by a change of position.

Thompson has called attention to dysuria as an indication of malignancy. This contention has been refuted by others and regarded as merely an indication of cystitis. The writer, however, is convinced that the combination of dysuria, urgency, frequency, and hematuria, in the presence of a sessile or an infiltrating growth, associated with bul-

*Read before the Congress of the American Urological Association, held at New York.

lous edema, is absolutely pathognomonic of malignancy.

Rectal or vaginal bimanual examinations should never be omitted in these cases. Cystoscopic examination may, in cases of suspected malignancy, be supplemented by a stone searcher exploration, with a view of determining the degree of infiltration at the point of departure of the growth, though this, in view of the danger of hemorrhage, should by no means be regarded as a routine procedure.

Treatment. So great a stimulus has been given this important branch of the subject by the work of Beer and Keyes, and at the same time so much confusion has ensued as a consequence, that much still remains to be said and done before even the liberally minded surgeons have oriented themselves sufficiently to map out a definite plan of action suitable in the majority of cases.

Intravesical operative procedure was first placed on a substantial basis by that pioneer of cystoscopy, Nitze, whose claims were, to say the least, startling. He stated as follows: "This cauterization is relatively simple and its effect is more than superficial. I have treated 150 bladder tumors with only one death; ages from thirty-two to seventy-nine years. In all but three of these patients a cure was obtained. By that I mean all had practically absolutely clear urine, and only very occasionally, at all events less frequently than following *sectio alta*, did one find a small residue which was at once destroyed." The writer is under the impression that most of these patients have had recurrences. Nitze employed the cautery through a water medium. The hemorrhage he controlled by means of ergotin, cotarine hydrochloride, calcium lactate, and creolin (the last two in the writer's hand have been most effective). Luys employed the galvanocautery through his direct aspirating endoscope with, as he asserted, exceedingly satisfactory results.

In this country, within the past two or three years, the method of destruction of these growths by means of the Oudin spark generated from the Wappler high frequency machine, has enjoyed considerable vogue and with results, in a very great majority of cases, that have been most gratifying. The writer's experience in seven cases treated with the Oudin spark has been of a similar character. Two of these cases were recurrent, following operation, the first three years after, and the second five years. One of these patients showed four distinct pedunculated growths situated about the site of suprapubic incision, together with a chain of similar growths located just behind and above the vesical orifice. The growth on the vault could be approached only by projecting the wire well into the field, and, with the other hand on the abdomen, rolling the various parts of the bladder wall into the picture; the contrast being made with the foot switch, which the writer was first to employ in conjunction with the work. It is really surprising how distinctly the various parts of the vault may in this manner be brought into view.

Another case worthy of note here occurred in a woman of sixty years, with a very large sessile growth occupying the right half of the floor and lateral wall of the bladder, completely obscuring the ureteral orifice on that side. She was examined by

three of the most competent men in this city. Two of them regarded the growth as an infiltrating carcinoma; the third gentleman stated that in the light of recent experience he would consider the case a benign one. The writer remained on the fence, and informed the patient that the growth might very well be malignant and might equally well be benign. She was treated at the writer's hands by means of the monopolar (Oudin) spark, and at present, some six months since the cessation of treatment, the patient is cystoscopically and symptomatically free of all vestige of growth. The ureteral mouth is plainly visible, there being no evidence of scar formation whatever. In but one of these seven cases, a man seventy years old, are there any symptoms. The patient has a very marked intravesical enlargement of the prostate, but his only complaint is moderate increase in frequency and hazy urine.

As to the efficiency of the procedure in properly selected cases, there should no longer exist the slightest doubt; nor should the procedure be regarded as a palliative one, as it is, at least as radical as the suprapubic removal by coning the mucosa, and should prove much more effective and of greater permanency because of its thoroughness, inasmuch as no growth, however small, should escape the expert cystoscopist, while these buds may and frequently do escape inspection through the suprapubic route. The cystoscopic procedure, in addition, does not expose the patient to the danger of recurrence along the site of bladder incision, as may be the case in cystotomy.

The technique of its application is a matter of individual opinion. The writer prefers a number of sittings rather than two or three intense applications. During such treatments the operator has the end of the wire under complete control and makes the contact at various points of the growth. With a clear field no danger need be feared. As a general rule a week will in most cases constitute the interval between operations. The destructive action of the spark should extend to the submucous layer, which is the probable site of departure of the papillomatous growth.

A point worthy of note in the application of the treatment is the following: If the operator, after a number of apparently effective sparkings, observes that the condition of his patient remains stationary, he should discontinue all treatment from four to six weeks. On the next examination the surgeon may find his patient absolutely well, as has been the happy experience of the writer in two cases.

It would appear that the current has its most effective field of application in small or moderately sized growths, single or multiple, that are accessible, and, in the light of recent knowledge at least, appear to be benign. On the other hand, the author believes that prolonged use of this method, in the absence of favorable result, is a faulty procedure, as such cases require more radical intervention. It is also worthy of note that the Oudin spark has proved effective in arresting hemorrhage in cases of inoperable tumor of the bladder.

As to the mode of approach in surgical intervention, there appears to exist also a wide divergence of opinion, and the writer may as a consequence be pardoned if he presents some impressions gleaned

as the result of much thought and considerable experience. These views are advanced chiefly for the purpose of enlightenment, as well as to promote free discussion.

First: In the extraperitoneal route the procedure of filling an infected bladder with fluid and discharging its contents over the operative field has always impressed me as illogical and unsurgical, and it is my belief that air dilatation should be employed, or the liquid evacuated through the catheter before opening the organ. If this is true it naturally follows that puncturing the wall with a needle traction suture, or the act of grasping the bladder with sharp tooth instruments, is faulty. It would seem advisable, then, to seize the wall with non-penetrating clamps, and, with the bladder distended, defect or decorticate, as the case may be, the peritoneum to the extent desired.

Second: In line with this thought, free flushing of the cavity in terminating the operation, may and should be dispensed with in favor of the application of gauze wipes taken from very hot water and applied directly to the part by means of a sponge holder.

Third: Much care should be exercised in avoiding the extension of the incision downward in the direction of the pubovesical attachment, as at this point proper closure is difficult and it constitutes a frequent cause for prolonged healing and fistulae.

Fourth: For patent reasons the bladder should be kept as dry as possible during the operation. This may be achieved by means of ureteral catheterization when it can be conducted, or by the use of an electrical aspirator.

Fifth: Perfect illumination of the interior of the bladder has been more frequently desired than accomplished. The writer trusts that the little tantulum illuminator, with a bird cage attachment which prevents soiling, may, to some extent, eliminate this difficulty.

Sixth: In the choice of material and the placing of sutures upon closure, one should exercise considerable care, as the presence of suture material in the bladder cavity constitutes a potential factor in subsequent calculous formation. In a case seen recently in consultation, in which a transperitoneal removal had been done, cystoscopic examination revealed the presence of a suture in the bladder some six months after the operation.

In the opinion of the writer the extraperitoneal route is sufficient in the great majority of cases. Where, however, extensive resection of the bladder is deemed necessary, the transperitoneal route may be followed. This method of approach is not likely to come into widespread use, inasmuch as it adds to the gravity of the operation for which it does not afford sufficient compensation.

In the previous communication mentioned above, the author first called attention to the fact that this operation was first performed by Rydiger, in 1885, and published in the *Wiener medizinische Wochenschrift* as deliberate laparocystectomy.

Finally, there appears to exist some misunderstanding as to the lymphatics in the bladder, which may be quickly cleared up upon reference to the comprehensive work on the subject by Pasteau. It

is his opinion that lymphatics in the mucosa remain to be demonstrated, but a distinct system has been shown to exist in the submucous, muscular, and subperitoneal layers. He emphasizes also the relatively great frequency of iliac and pelvic nodes following infiltrating vesical growths.

About two years ago, the writer encountered a case showing a large sessile growth of cauliflower type situated about and completely obscuring the right ureteral orifice. A well marked bullous edema coexisted with this, and the case was undoubtedly a malignant one. The usual suprapubic incision was made, the growth seized with a Guyon pedicle clamp, and cauterized to its base with an actual cautery. Upon releasing the clamp a well defined gush of urine spurted from the middle of the charred surface, showing clearly that the ureter mouth was included in the clamp. No trouble was anticipated from this, as Albarran's experience has shown, that so long as room is allowed for the escape of urine into the bladder the condition usually adjusts itself. The patient progressed uneventfully until five months ago, when the hematuria returned, also the symptom complex of malignancy as previously described. Cystoscopic examination showed two large lobulated masses just inside the vesical orifice, evidently outgrowths from the prostate, almost completely blocking the outlet. Behind the mass on the right side there appeared another growth similar in character and situation (cauliflower) to the one removed eighteen months before. The case was not regarded as an operable one, and in view of the comparatively superficial effect of the Oudin (monopolar) spark, unsuited for it.

Some investigation of the subject in conjunction with Mr. Rhinold Wappler, demonstrated to my entire satisfaction the deep seated action of the bipolar (or d'Arsonval) spark, and in a tentative fashion this was applied by means of the cystoscope, a metallic pole being placed under the buttocks, the wire introduced through the instrument constituting the other. After five months the patient has gained about fifteen pounds in weight; the diurnal frequency is every three to four hours with complete absence of nocturnal micturition. The urine is clear, with no microscopic blood, the patient remaining symptom free.

In conjunction with Doctor Squier, copper electrodes have been constructed for use through the usual suprapubic incision, and growths are removed or cauterized as with the galvanocautery knife, the d'Arsonval spark being employed. While the work at this moment is in too immature a state to render a detailed report, sufficient has been accomplished to demonstrate the remarkably destructive action of the current on growths of proved malignancy.

CONCLUSIONS.

In the writer's opinion the following conclusions in the light of recent advances, would appear to serve as a more or less adequate working basis, though in reality each case should be considered on its individual merits.

First: The Oudin spark treatment (cystoscopic) applies to small or moderate size growths, single or multiple, particularly the latter, which are accessible and apparently of a benign character.

Second: In the absence of a reasonably prompt effect, such treatment should not be prolonged.

Third: Except in the unusual case, where pronounced hematuria obscures the view, the method will supplant the suprapubic operation of coning the mucosa.

Fourth: The application of the spark should not be made in a cloudy field, as in such event it is inexact and dangerous.

Fifth: Growths of an infiltrating character and suspiciously malignant should very promptly be removed by resection through the entire bladder wall at least two cm. beyond the mass, and when in close proximity to the ureteral orifice should include ureter transplantation.

Sixth: In the case of a very great number of outgrowths in the bladder which, while benign, are from their very multiplicity, not amenable to the spark treatment, one should not forget that this same treatment may with much effectiveness be directed via the suprapubic opening.

Seventh: It is the author's hope that the employment of the d'Arsonval spark may offer something even of a palliative nature in such cases as, at the moment of this writing, appear to be beyond our reach.

40 EAST FORTY-FIRST STREET.

TEN SEX TALKS TO GIRLS.*

BY IRVING DAVID STEINHARDT, M.D.,
New York.

V.

Just a few words in recapitulation, regarding gonorrheal infection before I pass to the second of the important venereal diseases, viz., syphilis. I told you that gonorrheal infection sometimes gave a general reaction, but I neglected to state that when the germs get into the blood and are circulating throughout the body, masses of them sometimes stop in one or more of the joints of the body and set up an inflammation there somewhat like a rheumatic condition, but much more painful and dangerous. We call this kind of trouble gonorrheal rheumatism. Beside being a disease in which one can have the most excruciating pain over a long period, a pain that makes that of ordinary rheumatism a mere trifle, the kind of inflammation which is produced in the joints causes changes to take place in the construction of the joint tissues which may destroy them forever. Do you understand fully what I mean? When this disease—gonorrheal rheumatism—attacks a joint, the patient is liable to be a cripple so far as that joint is concerned. The disease may attack several joints and leave this destruction as a final result. Where it does not complete the destruction of the joint, it may leave it partially disabled. In either event it is rather a serious matter for the sufferer. It certainly is a very strong additional argument for social purity

in both sexes. As the gonorrheal germ is not as particular as it might be, whether its presence in your system is due to immorality on your part or on the part of another, I again repeat what I have said so many times, avoid sexual familiarity of any kind, particularly the actual sexual relation before marriage, and insist on your prospective husband undergoing a thorough physical examination which shall show him to be in good health, at least sexually, before he becomes really your husband and entitled to sexual relations with you. I cannot be too emphatic on this point, and you cannot be too particular in carrying out this advice.

We will now pass to the discussion of a disease that is perhaps the most loathsome of all diseases and the possession of which, when it becomes known, makes the possessor of it a most unwelcome guest everywhere. It is a disease that causes both mental and physical suffering and is not infrequently a cause of suicide. It has three stages, each very troublesome and painful. Its complications and sequelæ are to be dreaded. Its victims help materially to fill the asylums for the insane. Its poisons are strong enough to fill the unborn child where miscarriage has not already destroyed the growing human seedling. Its poisons are even strong enough to prevent pregnancy, by destroying either the viability of the male or female contribution to reproduction, or both. Even when the child may be so unfortunate as to be born alive, it is born with the disease and merely comes into an inheritance of pain and suffering and disgrace plus possible feeble-mindedness or worse. It has to go through life with this taint of syphilis attached to it and always in dread of the disease breaking out in him or her, although treatment may have been taken. Even with thorough treatment, it is a hard disease to eradicate for good and all. It is certainly a good disease to use as an illustration of the Bible quotation "And the sins of the fathers shall be visited upon the children, even unto the third and fourth generation." Like gonorrhea it may attack the innocent as well as the guilty. Doctors and nurses have been known all too frequently to contract it in their routine handling of patients, and even these martyrs to their profession are punished in the same severe way by this black plague as those who have contracted it in other ways. Again it is a disease for which there is no excuse at all. Morality would stamp it out for good and all, and with no syphilis in the world many other diseases would find less favorable conditions for attacks upon the human race. A strong healthy human body resists the attacks of the germs of many of our diseases, but none seem resistant enough to come into contact with virus of either gonorrhea or syphilis and not be attacked. Does not this seem significant? Does it not seem to point a moral? It certainly should be a strong argument in favor of morality even to an unreligious mind. To a religious mind such a moral needs no further words from me.

What is syphilis? It is an acute infectious disease, transmitted usually by personal contact in the course of the sexual relation. It can be transmitted in many other ways, especially by kissing. It has recently been discovered that it is a germ disease. I use the word germ in a broad sense. The tech-

*Delivered by invitation before the Florence Memorial Aid Society of the Hebrew Educational Institute of Brooklyn, N. Y., the "Evergreens" of the Emanu-El Brotherhood of New York, and elsewhere.

The author is willing that anyone desiring to give talks of this kind use all or any part of these that may be desired. In giving these talks, the author always encourages the asking of questions at the end of each. In this way anything said during the talk which was not clear to the audience is explained more fully.

nical name for the trouble maker is *Spirocheta pallida* Schaudinn. A hard name to remember, think you, but if you are ever so unfortunate as to harbor any of this tribe in your body, the results will never be forgotten unto your dying day. The disease, in its most virulent form and with its ever changing but continuous complications, is enough to make you curse the day you were ever born. The virus or poison of syphilis may be got from a glass or cup which has been used by a syphilitic person and then not properly disinfected. Therefore you see that more than the danger of tuberculosis lurks in the common drinking cup, whether it be at water faucet, soda fountain, saloon, or elsewhere. The syphilitic virus may be got from any other article handled by a person afflicted with the disease, providing that any of the syphilitic discharges have got on these articles. You can, therefore, see that a syphilitic person is somewhat of a menace to those about him, and when the true state of affairs becomes known, the diseased person is liable to find everybody inclined to remain at a safe distance and wherever he goes the attitude "I prefer your space to your company" is noticeable.

You see, the worst of these diseased people is the fact that many are absolutely careless of the rights of others. Realizing the feeling of those about them, they seem to get a revengeful mood upon them and do not seem to care whether they infect others or not; a not very commendable attitude and one filled with danger so far as the general public is concerned. Perhaps the time is not so far distant when health boards will deal with these venereal diseases in the way they deserve to be dealt with, but until that time comes we must do what we can to protect ourselves.

Syphilis usually takes from about two weeks to three weeks to develop when a single sore makes its appearance at the place where the syphilitic virus entered the body. Do you realize that under such conditions an immoral individual, traveling from person to person, can even unintentionally spread the disease before he or she realizes that the disease is there. Following the appearance of that sore the glands near the site become swollen. Again there is a period of rest, and about from forty to fifty days later the constitutional symptoms appear. Again you see how the disease may be spread if by chance the patient disregards the appearance of the sore or if on going to the doctor the sore is not properly diagnosed. You will understand this latter part of the preceding statement when I tell you that there is a venereal lesion caused by an entirely different germ and that is comparatively harmless which somewhat resembles the initial lesion or sore of syphilis and that this sore may be any one of six different varieties. The constitutional symptoms consist of the appearance of a rash and general glandular swelling. There may be marked fever and chills, headaches of the severest type, neuralgia, pains in the bones, the muscles, and the joints, sleeplessness, and marked anemia. In some cases, and more often in women, there is sometimes loss of the sense of heat and cold, of touch, and of pain. This may extend over the entire body, or only small patches of the body surface be affected. The body may become yellow from liver involvement. The hair may start to fall out

at this period also. The rash, which first appears usually at the navel, spreads rapidly over the body and the backs of the legs and the fronts of the arms—in other words the flexor surfaces of the extremities. It also attacks the face and scalp. On fading, the eruption usually leaves brownish, red, or copper colored spots. There are several different types of syphilitic rash which may appear in this disease, so here again it is easy for a mistake in diagnosis to be made in the beginning, thereby allowing the disease to be spread.

In the course of this disease there is practically no part of the body exempt from its ravages. It attacks or affects the hair of the head as an uppermost point, and the skin of the soles of the feet as a lowermost point. When the hair is affected, it attacks not only the hair of the scalp, but the hair in any and all parts of the body. It may even attack the eyelashes through ulceration of the lids. The hair may come out in spots entirely, or there may be a general thinning out of it. The nails of both the fingers and the toes may be attacked, the former more than the latter, however. When the disease attacks the nails, the skin around them may also become affected. As I told you in a previous talk, the lining skin or membrane of any of the internal surfaces of the body such as the mouth, stomach, vagina, etc., is known as a mucous membrane. These membranes are very apt to be attacked by the disease, with resulting ulceration which may go on to actual abscess formation. The discharge from such ulcers or abscesses is very infectious and therefore most dangerous. Figure it out for yourself the extent of these mucous membranes and you can easily realize what a great amount of damage can be caused by just such ulcerations on the surfaces alone.

The syphilitic lesions of the tongue have a marked tendency to degenerate into cancerous growths. Very often necrosis of the bony or hard palate and upper jawbones takes place in the course of the disease. Of course, as the bone rots away the teeth become loosened and fall out. On the soft palate syphilitic abscesses or ulcerations appear. The pharynx, esophagus, stomach, intestines, and rectum may be the seat of ulcerations and these ulcerations may cause a contracture or stricture somewhere in the gastrointestinal tract. The most frequent site for such a thing to happen, however, is in the rectum. I need hardly take any time to explain to you how unpleasant and serious such an occurrence is. The liver, sometimes called the chemical laboratory and fuel storehouse of the body, and therefore a most important organ to be in the best of condition if we are to enjoy the best of health, is the most frequent of all the abdominal organs affected by the syphilitic poisons, and the end effect here may be most serious for the patient, as resultant abscesses destroy a good deal of the liver tissue and thereby lessen its efficiency.

But why go on in this strain? You are not going to be doctors, so more detail would be an over-sufficiency. Suffice to say that every organ or part of the entire body, as I have already told you, is vulnerable to, and oftentimes is attacked by this vile poison with serious results. Even the bloodvessels themselves are not exempt, but from merely being the carriers by which the poison travels around the

body in the blood stream, the walls of the vessels are much weakened by the disease and break down, causing hemorrhage, following which may come paralysis, delirium, convulsions, loss of memory as regards everybody and everything, epilepsy, muscular spasms, and severe headaches. When this disease attacks the spine and brain the end result may be insanity, in many cases preceded by abscesses, blindness, locomotor ataxia, paralysis, epilepsy, etc., or any and all of the foregoing with death mercifully intervening before the stage of insanity is reached. Syphilis is one of the most frequent causes of apoplexy. Syphilis is a very strong argument for social purity in both sexes, and positively no one ever having had it should dream of getting married until he has had from two to two and a half years of the most thorough treatment and has been declared free from it by our present mode of testing the blood.

I don't believe that personally I should ever marry any one who had ever had syphilis, but then some of us are braver than others. If I were not afraid for myself, I should be for the fruit of the union, and to think that I should be in part responsible for bringing a baby into the world to a life of misery, would be a lifetime reproach to me. If it has ever been your misfortune to have seen one of these little sufferers, you will realize more truly the truth of this statement. They do suffer much pain from the disease itself, and from complications brought on by the presence of the disease in the system. When they do survive at all, one is really never easy whether the disease has been thoroughly eradicated or if it is going to come back at a later date. In some children the disease is absent in infancy, but it shows itself at a later age. This, as you can readily imagine, is not very pleasant for the child or adult.

310 WEST NINETY-NINTH STREET.

ENDOURETHRAL CHANCER.

A Report of Two Cases.

By EDWARD H. MARSH, M. D.,

New York.

Associate Dermatologist, Jewish Hospital, Brooklyn; Assistant Surgeon in Dermatology, Cornell University Medical College Dispensary.

Within the past two weeks two patients, suffering from endourethral chancre, have presented themselves to me for treatment. Their cases will illustrate the need of careful history taking and careful examination of patients by the practitioner.

CASE I. Man, aged twenty-eight years, occupation candy vendor. Previous history, negative. The duration of illness was six weeks and there was a definite incubation period of twenty-one days. He had been treated by means of internal medication for three weeks with a diagnosis of gonorrhea. He had no burning during the act of urination, but complained of a moderate amount of discharge and asserted that when urinating the stream came through the meatus, sometimes as a very small stream about the size of a pin, and at other times in drops.

Examination revealed a thin serous discharge, in which I was unable to demonstrate the gonococcus; a red meatus which on palpation was markedly indurated, the induration extending back for about one centimetre along the urethra. In the coronal sulcus was an eroded chancre about one centimetre in diameter. There was a general

adenitis and a distinct maculopapular eruption. Examination of the mouth showed mucous patches on the tonsils, uvula, buccal mucous membrane, and at the corners of the lips.

The patient was put on injections of mercury salicylate to the point of salivation, and within five days the meatal chancre was less indurated, there was less difficulty in urinating, and the eruption had faded somewhat. Within ten days urination was normal, although there was still considerable induration around the meatus. The same treatment has been continued up to the present time with fair success, but one mucous patch on the lip still persists and the patient is to receive salvarsan in a few days, which has been impossible up to the present owing to his circumstances and his persistent refusal to enter the hospital.

CASE II. Man, aged twenty years; occupation, driver. Previous history, negative. The patient complained of a discharge which he had had for one week. The incubation period could not be determined. He had severe burning at the meatus during urination.

Examination showed a profuse purulent discharge which contained intracellular diplococci which were decolorized by Gram's method. The patient was put upon alkaline diuretics and received the usual instructions given to patients suffering with urethritis. In spite of medication, the pain, discharge, and the redness of the meatus persisted with all of their original severity. After two weeks an induration was noticeable at the meatus. A dark field examination at this time was negative. By the end of the third week the induration was well marked and extended back along the urethra for a distance of a centimetre; the patient complained of difficulty in urination with occasional stoppage of the stream during the act. The inguinal glands were slightly enlarged, indurated, and discrete.

Treatment for syphilis was immediately instituted and within one week the induration had disappeared to a large extent, and the discomfort and difficulty during urination had ceased. By the end of the second week of treatment the induration had disappeared to such an extent that local treatment for the gonorrhea was begun, which had previously been impossible, due to the small size of the meatus. At the present time this patient is rapidly progressing toward recovery.

These two cases illustrate the necessity for a careful and systematic examination of all patients presenting themselves for a venereal condition. In the first case, the definite incubation period of twenty-one days should have caused the physician to make a guarded diagnosis. Microscopical examination was negative for gonococcus (at least it was when first seen by me), while a dark field examination might have revealed *Treponema pallidum*. In addition, there was the definite chancre in the coronal sulcus. The patient stated to me that he had never been properly examined, but was put on treatment on his mere statement that he had "clap."

The second patient did have a definite urethritis, but I firmly believe that if I had taken more time and had exercised more care the diagnosis of syphilis could have been made at least one week earlier.

448 NINTH STREET, BROOKLYN.

A COMPLETED TREATMENT FOR TONSILLITIS.

By F. GRIFFITH, M. D.,

New York.

Believing no more in the wisdom of those practitioners whose habit is to excise in all tonsil cases than he does in castration of convicts at the whim of a prison doctor, this writer has adopted a course treatment for tonsillitis of any sort, old fashioned in some respects, but one which he thinks will prove

its value by blocking further progress of the disease at any stage. Bacteriology teaches us that germs of pneumonia, influenza, diphtheria, tuberculosis, and mild and virulent pus are constant inhabitants in our mouths and are found thickest on, in, and about the tonsils. Due to the fact that in every swallowing action the tonsils are extruded between the flattened pillars of the pharynx, these organs act their function by screening over their crypts the organisms swept by in food mass and strain the salivary stream of hosts of microbes as cobbles clean a brook. A person swallows saliva one or more times a minute every waking hour of day and night, making it plain that tonsils are not drones in the body. That Nature intended our tonsils to do plenty of work is shown in the anatomy of their rich blood supply. The great medical dictum in early decades of the last century—don't allow a fever patient anything to drink, let it burn out of him—was wisdom in the day before antiseptics, for moisture is cardinal to germ reproduction as we now know, and saturated body cells in a cholera, ship fever, yellow fever, enteric fever, or plague patient lessened vital resistance more than a drink was worth in a thirsty throat. This did the old observers note and hence their edict, at which a later day laughed to its shame.

Notwithstanding, the writer finds that a case of tonsillitis, which as generally seen presents as clear a type of rampant fever as occurs in specific disease, is cured quicker by reducing fluids taken to the minimum, allowing merely sufficient for kidney wash. Medical treatment is commenced by giving calomel, grain one eighth or grain one quarter (gramme 0.008 or 0.016) tablets, one every thirty minutes until two grains (gramme 0.130) are taken, or until the patient's bowels are well moved; so keep regulated thereafter. When first seen a hot mustard foot bath is given (heaping tablespoonful of powdered mustard stirred up in a pail of hot water), having the patient wrapped in a blanket in which he is afterward put to bed. The diet should be light and meat is better wholly refrained from. In cases accompanied by prostration, home made meat juice may be employed. The course of treatment is planned to extend over a period of one, two, or three days to suit requirements of acute attacks of tonsillitis. The specific treatment consists of quinine bisulphate (used because most soluble) grains two (gramme 0.130) with Dover powder grains five to ten (gramme 0.333 to 0.666) when the patient is first seen, then administered night and morning thereafter during the course. Separate and distinct is the following treatment, which is directed to be regulated according to the amount of purulent exudate dripping from the infected tonsils, for it is these throat droppings, absorbed down in the stomach and intestines, which cause the exacerbations of systemic reaction in tonsillitis. To combat this give drops one or two (c. c. 0.05 or 0.1) of pure carbolic acid, stirred into a quarter of a glassful of cold water, to be administered from two to eight times a day of twenty-four hours as required.

Local cleansing of the throat may be employed by the patient with a mild gargle and oily spray, which latter does good by aiding suspension of the falling exudate. Hydrogen peroxide the writer finds too harsh for use. The throat and tonsils

may be gently wiped over once every one to three days by a solution of tannic acid, one part, in glycerin, four parts, or one of tincture of chloride of iron, one part, in glycerin, five parts. Throat lozenges, containing guaiacum, grain one or two (gramme 0.066 to 0.130), or made up with camphor, grain one tenth (gramme 0.006), menthol grain one tenth, and cocaine hydrochloride, grain one thirty-second (gramme 0.002), may be administered at the rate of six or eight a day. Lumps of cracked ice may be sucked to relieve thirst and lessen local inflammation. An ointment or hot poultice application to the neck under the angles of the jaw when lymphatic glandular involvement is manifested by swelling and pain, may be used. Marked mechanical obstruction to breathing is to be met by a linear slash with a guarded bistoury through the bulging tonsil; one organ offending more than the other by its prominence is the rule. One or more cuts are to be made as necessary, reliance in this method depending upon shrinkage obtained by blood depletion and sacrifice of the least amount of tonsillar tissue. The writer does not object to a proper shortening of an elongated uvula, provided it is causing a symptomatic cough.

Tonic treatment, as of the hypophosphites, is employed subsequently if necessary. Excessive diarrhea, or the pressure of smoky urine, calls for reduction or cessation of the carbohc medication. Finally, as can be seen, and a most impressive thought in this writing, is that of decisive direct combat of the gastrointestinal autoinoculation during progress of this disease by use of pure carbolic acid.

238 WEST THIRTY-EIGHTH STREET.

MASSIVE TUBERCULOSIS OF THE LIVER.*

Report of a Case.

BY DAVID FELBERBAUM, M. D.,

New York.

Pathologist to the Montefiore Hospital.

Massive tuberculosis, or, as it is also designated, tuberculous cholangitis or pericholangitis or conglomerant tuberculosis of the liver, was described as early as 1858 by Bristow; nevertheless, since then very few cases have been recorded. I was able to find, in a review of the literature, less than a dozen cases reported; a very rare affection indeed.

The condition is usually secondary to intestinal tuberculosis, and reaches the liver by way of the portals. The first step is a tuberculous pyelophlebitis and thrombosis of the endohepatic branches, later on tuberculous granulation tissue is deposited. A number of these granulomata coalesce and form conglomerate tubercles. These deposits are usually multiple and may soften down, giving rise to tuberculous abscess, which may eventually discharge into a bile duct, similarly to a caseous focus in the lung, rupturing into a bronchus. The nodules appear as white masses of various sizes and shapes, surrounded by a thin fibrous capsule. The adjacent liver substance is compressed and may become

*Read before the Section on Medicine, New York Academy of Medicine, November 10, 1911.

pigmented. They resemble very much gummata, but may also simulate neoplastic growths, as in the case to be described.

The symptomatology is very definite, no case having ever been diagnosed during life. The liver may be enlarged; tumor masses have been felt during life. Jaundice does not occur. The cases have all been characterized by gradual emaciation, but on the whole, the symptom complex is masked by the primary affection. There are two cases on record in which the process in the liver was apparently primary, no other tuberculous foci being discovered. It is slightly more frequent in children, probably on account of the frequency of intestinal tuberculosis.

The case which we observed at the Montefiore Home exemplifies the difficulties of the diagnosis *intra vitam*, especially in that it was considered to be a case of carcinoma of stomach and liver, tuberculosis not having been suggested as a possible di-

agnosis by any one of the many who examined the patient during life. Even after the specimens were obtained, the condition was considered by nearly all who saw it as a malignant growth, and not until the microscopical sections were examined was the true pathological condition present positively determined.

Status præsens. Considerable emaciation. Skin was dry, diffusely pigmented, generally and in spots, color from tan to dark brown. Mucous membranes somewhat cyanotic. Generally palpable lymph nodes, including epitrochlear. The largest nodes were found in the left groin, averaging size of a plum. Examination of heart and lungs was negative, abdomen protuberant. Liver was felt in mamillary line at level of umbilicus, from here the edges curved upward on either side to about two fingers' breadth below the costal margins. The edge felt hard and smooth. Spleen not felt. Finger tips were slightly clubbed.

During August, 1907, the lymph nodes in left groin gradually enlarged and one of them broke down, discharging pus spontaneously. There was no wound or infection in the area drained to account for the suppuration. Off and on during the ensuing year other glands in the left groin repeatedly enlarged and suppurated, necessitating numerous incisions and drainage. On the supposition that the condition of the glands might have been syphilitic, he was given two thorough courses of iodides, and although iodism was produced, no effect on the nodes was obtained. This process continued until April, 1908, when it ceased spontaneously and all the sinus healed. He then began to gain weight, increasing from 110 to 140 pounds, was able to get about, and except for occasional epigastric pain, had no complaint. He continued thus until early in December, 1910, when a cough developed, with hectic temperature and rapid emaciation, finally cachexia. He had generalized pain in the abdomen. There was found dullness over right lung posteriorly, with a few râles at the apex. Sputum was negative. The heart sounds became very feeble, abdomen greatly distended, exitus occurring in extreme emaciation and exhaustion.

Uranalysis, continually showed a large excess of indican, otherwise negative.

Stomach contents, May 13, 1907, total acidity $\frac{52}{40}$, free $\frac{18}{40}$.

December 22, 1910, total acidity $\frac{26}{40}$, free $\frac{11}{40}$.

Feces gave normal findings.

Blood. Four examinations of blood were made, all showing a granular degeneration of the erythrocytes. White blood cells varied from 8,000 to 21,000 (prior to his death). Differential count normal.

No autopsy was granted, but through skill of the house staff, the various viscera were obtained by the rectal route. In brief the following was found: Many old healed tuberculous retroperitoneal glands. Stomach was normal. The liver was very much enlarged, and had to be delivered in sections. Its shape was irregular and it was studded throughout with innumerable nodular masses varying in size from a pea to hen's egg. (See fig.) The masses were white in color, firm, and sharply outlined from the rest of the tissues. Many showed central areas of softening and around some was an area of brownish pigmentation. In a few places hemorrhages had occurred in the liver substance. Kidney showed moderate amount of parenchymatous changes. One had a small pea size white deposit in the cortex, probably of similar nature as that in the liver.

The right lung showed extensive deposits of miliary tubercles.

The microscopical section revealed a picture of conglomerate tuberculosis of the liver with much caseation. There was a well marked peripheral zone of round cells surrounding the caseous areas and many giant cells among these. The liver parenchyma was much stained with bile, congested, and cells were compressed. The right lung showed miliary tubercle. Both liver and lungs were stained for bacilli by Gabbet's method. In the lung bacilli were found very abundant, but in the liver these were scarce and found only among the peripheral round cell infiltration.

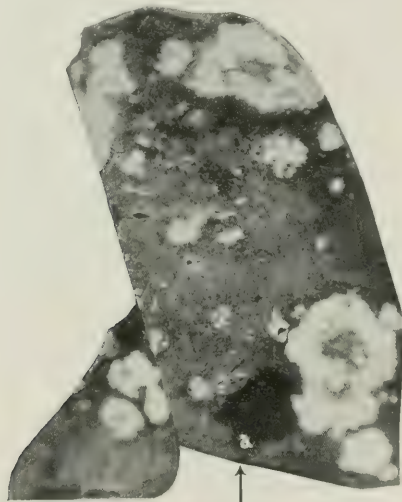


FIG.—Tuberculosis of the liver, showing irregular shape and studded throughout with innumerable masses varying in size from a pea to hen's egg; a, hemorrhage.

agnosis by any one of the many who examined the patient during life. Even after the specimens were obtained, the condition was considered by nearly all who saw it as a malignant growth, and not until the microscopical sections were examined was the true pathological condition present positively determined.

CASE. The patient was a male, admitted into the hospital May 8, 1907, at the age of fifty-two years. Nativity, Russian; occupation, clothing maker.

Family history. A sister and a brother died of some abdominal growth in adult life. *Personal history* was negative. He denied all venereal diseases, drank little alcohol, and smoked moderately.

Present illness. Began eleven months prior to his entrance into the Montefiore Home. One day while out walking he was suddenly seized with severe pains within the abdomen. These were greatest in the left iliac fossa, and were so violent that he had to be carried home. The next day he began to hiccup, which continued for about one week, unceasingly. Following this he began to lose

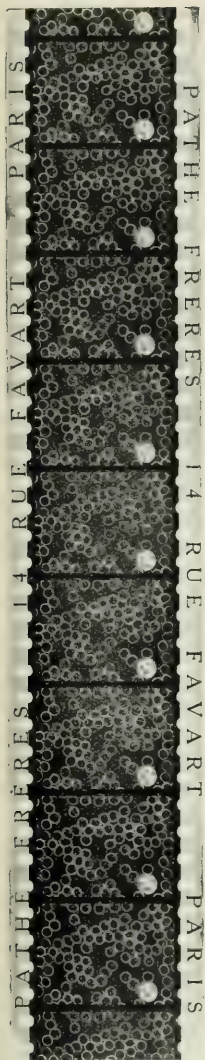


FIG. 1.—Human blood in motion.

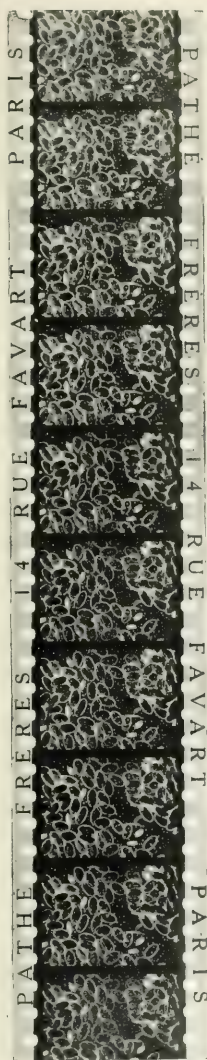


FIG. 2.—Blood of ovis aries animals.

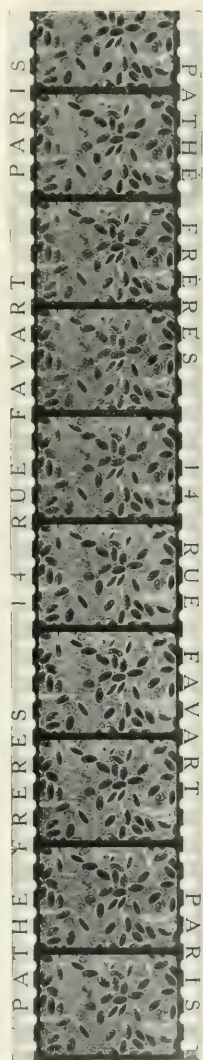


FIG. 3.—Hemokonia or blood just coagulated fat in the circulation.

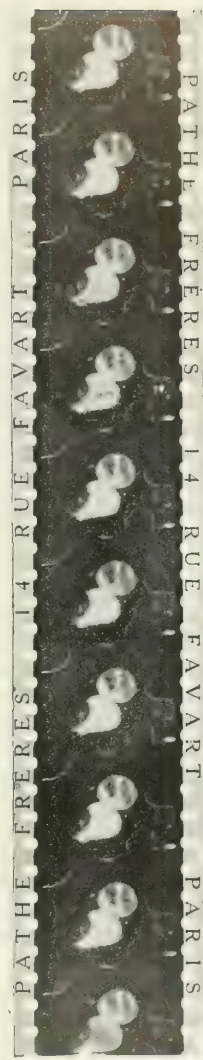


FIG. 4.—Amoeboid movements of a leucocyte (thick or thin strands).

Lectures and Addresses.

THE CINEMATOGRAPH AS AN AID TO MEDICAL EDUCATION AND RESEARCH.

A Lecture Illustrated by Moving Pictures of Ultra-microscopic Life in the Blood and Tissues, and of Surgical Operations.

By RUDOLPH MATAS, M. D.,
New Orleans.

(Concluded from page 414.)

In the views that will be successively projected

on the screen you will see the coagulation of the blood, the blood of man, of birds; the hemokonia or fat bodies of Müller; the amoeboid movements of the leucocytes; phagocytosis, as this occurs in anthrax; you will see the flora and fauna of the intestines of the mouse; *Trypanosoma Lewisii* in the blood of a sewer rat; *Trypanosoma Brucei* as transmitted by the tsetse fly; the spirilla of relapsing fever (Obermeirei); the spirochete of Vincent; *Treponema pallidum* as it lives in syphilitic lesions; the agglutination of the bacillus of Eberth, as seen in the Widal test, and, finally, the demonstration of the Ehrlich-Hata "606" as it affects the parasites in

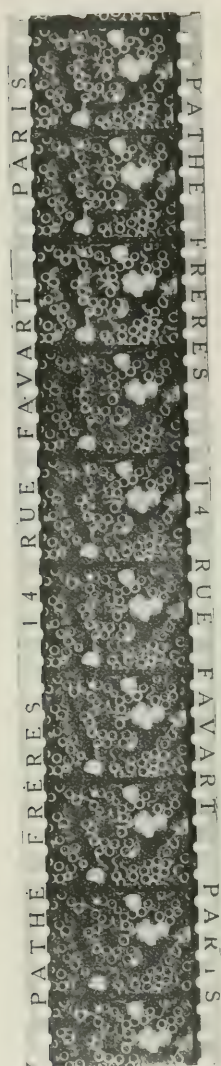


FIG. 5.—*Trypanosoma Levanii*. The blood of a sewer rat infested with these parasites.

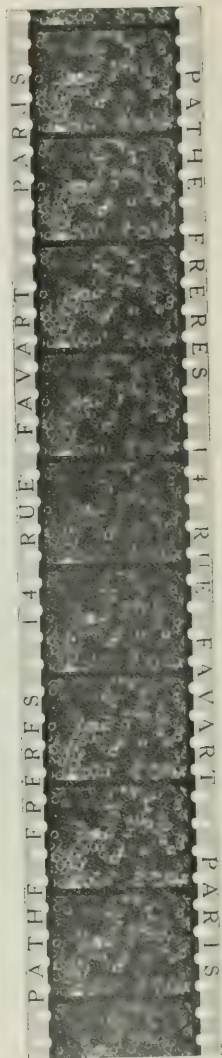


FIG. 6.—*Leishmania* in cornea. From the eye of the rabbit infected at South Africa.

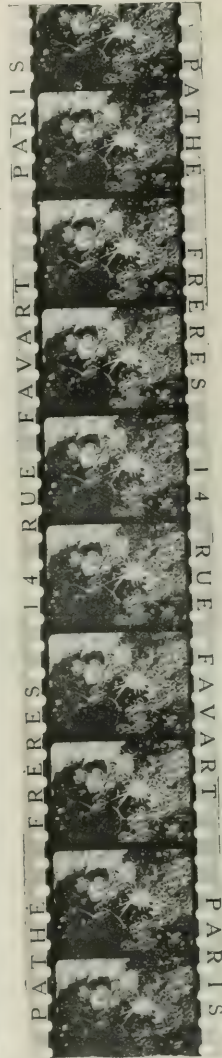


FIG. 7.—Agglutination of *Serratia flexuosa* in the blood of the patient suffering with typhoid fever.

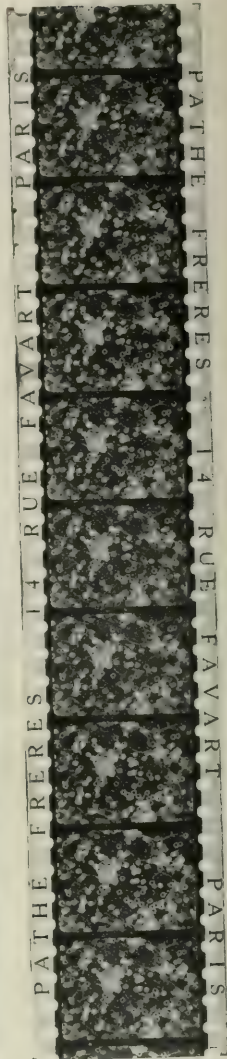


FIG. 8.—*Spirochaeta Obermayeri* in the blood of a patient suffering with recurrent fever.

an experimental lesion in the cornea of a rabbit.

These films have been selected chiefly in view of demonstrating the value of cinematography in teaching ultramicroscopic pathology in the class room. Here you will see the *life* that no other form of photographic process can reproduce.

"To see the microorganism move, evolve, and revolve in the midst of normal cells, the spirochetes uncoil and undulate in the fluids which they inhabit, to see them hide behind the blood corpuscles, or in clumps of fibrin, turn, twist, and rotate inside of a

red corpuscle as if in a cage—to see them apparently screw into each other as in a strange conjugation; to see trypanosomes moving back and forth in every direction, displaying their delicate undulating membrane, shoving aside the blood cells that are in their way, while by their side the leucocytes lazily extend or retract their protoplasmic pseudopods—is to realize that we are in the presence of an unknown world, a world of the infinitesimally small, but a world as real and as complex as that which is visible to our eyes."

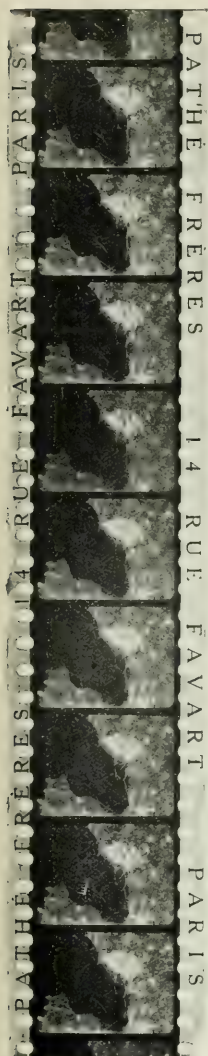


FIG. 6.—*Spirocheta pallida* or *Treponema pallidum*, the parasite of syphilis.

But dismissing these more specific applications of the cinematograph as they especially concern the laboratory teacher, let us consider for a few moments examples of its application as an educational agent in the proper training of the mechanic and artisan in the trades which require intelligence and manual dexterity, and which hint at its possibilities in the teaching of surgical operations and the proper handling of surgical tools.

A writer in the *Scientific American* (supplement, lxvii, p. 76, 1909) states: "The moving picture machine offers a partial solution of the problem of imparting individual instruction in the trades. Next to actually doing the thing, or seeing a skilled workman do it, is the seeing of it done in a series of moving pictures.

"For example, take the operation of accurately fitting a flat surface on a piece of cast iron held in a vise; a series of pictures showing the correct position and manner of handling the file could not help making a strong impression on earnest learners of the machinist's trade. The same method would apply to the operation of chipping with the hammer and chisel, scraping, lapping, laying out, and many other hand operations, almost impossible of complete description without working examples.

"In machine work the moving picture scheme could be employed with

even greater success. The operation of chinking a casting on the face plate of a lathe, and bowing and facing, could be shown vividly. Dozens of other operations shown in this way could be repeated indefinitely for the instruction of countless numbers of young men. They would be impressed by the methods illustrated and the spirit in which a skilled workman proceeds in doing the things portrayed."

The first investment for films illustrating shop operations would be heavy and the plan must be worked out cooperatively in order that manufac-

turers may avail themselves of this system of imparting apprenticeship instruction cheaply.

In our opinion there is much in this idea as a feature in a general scheme of industrial education.

From this brief statement of the application of the cinematograph to the manual training of the artisan, we gather not only a valuable example but also a suggestion, which I hope will not fall on sterile soil in a gathering of surgical specialists who are preeminently recognized as the foremost in availing themselves of every opportunity to improve the technical efficiency of their profession.

Here we see formulated a plan by which any mechanical trade requiring manual training, and skill in its exercise, is to be taught by the living vitalized image of the expert and master mechanic at work. Not only is the student able to see the work done in every minute detail, but he will also see the performance carried out as it should be and is done by a chosen expert in that particular procedure or manœuvre.

Why could we not profit by this suggestion and inaugurate cinematographic courses that would illustrate all the operations of surgery covering a complete course of operative surgery as contributed by the most noted and greatest specialists in the surgical profession? Doctor Kelly has not only grasped this idea but has put it into execution in his admirable stereoclincs, but I dare say he would be the first to admit that, notwithstanding the recognized value of the stereoscopic photograph, this has its decided limitations, as it can only be seen and studied by the individual who is holding the image before him and that it is not applicable to class demonstrations where groups of students may simultaneously witness an operation with all the vividness and intense realism of the moving picture. Furthermore, the moving picture not only shows every detail that the small stereopticon can reveal, but it follows every movement and expression of the operator, his assistants, and the patient as they are projected, magnified to normal size, on the screen. Who can gainsay the enormous advantage to the medical students of this country if they could have the privilege of witnessing, in their own lecture rooms, the scenes and accomplishments which are enacted by the great masters of American surgery in Rochester, Baltimore, Chicago, Boston, New York, and Philadelphia and other places; to see each and every one of the classical operations of surgery performed by a recognized authority in that particular operation?

It is to the credit of Dr. E. Doyen, of Paris, that he not only organized this method of observation and instruction over fifteen years ago, but that he devised special ingenious machines by which accurate and artistic reproductions of all the operations performed in his institute in the rue Picini could be permanently preserved. He has utilized his vast collection at great cost not only in illustrating his remarkable treatise on surgery (*Therapeutique chirurgicale*, in six volumes, 8vo, Maloine, Paris), but is publishing a special course of operative surgery as a text to accompany a corresponding series of cinematographic films which are now issued by the Eclipse Company, of Paris. It is his intention to utilize not only monotints, but

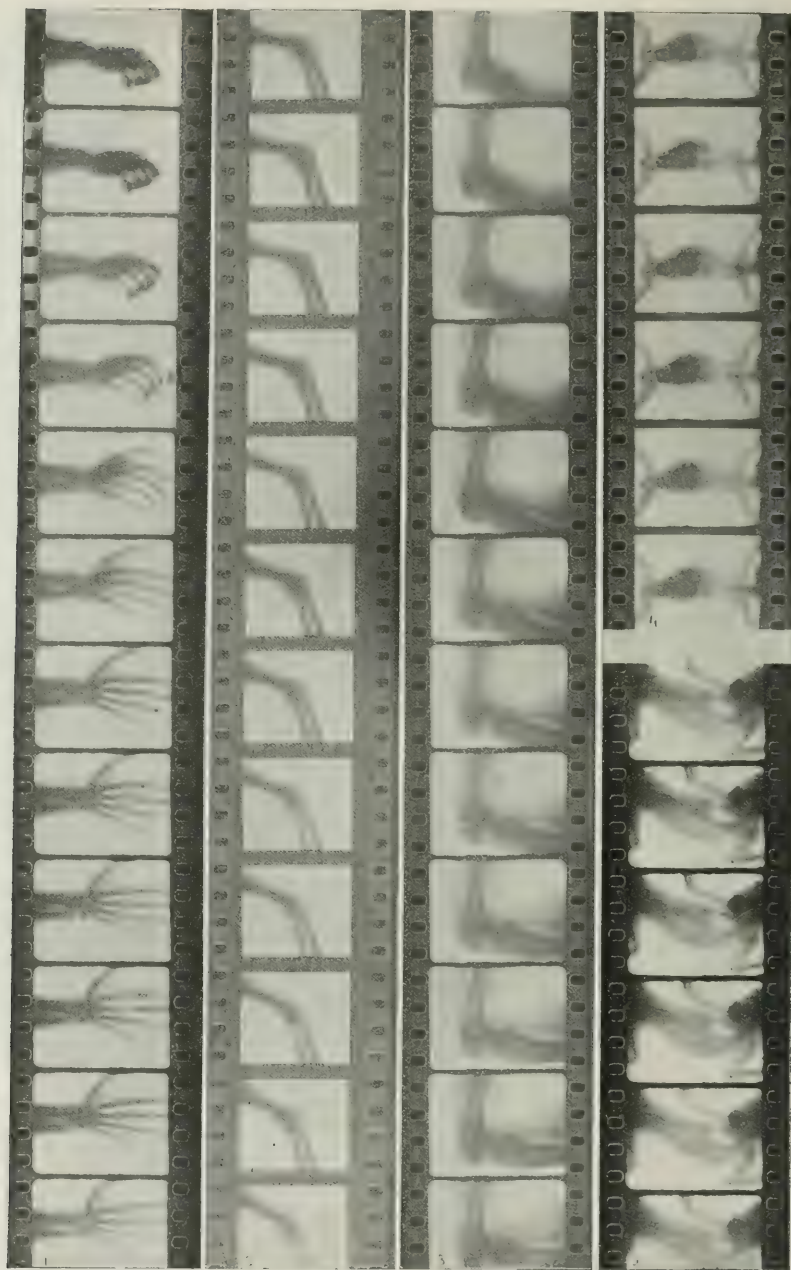


FIG. 10.—Radiocinematograph: moving pictures of radiographic images of various parts of the skeleton in motion, illustrated by films obtained by M. M. Comandon and Lomon, Paris, reproduced by courtesy of Messrs. Pathe frères. *A*, Extension of the fingers the knee joint (two images a second). *B*, Extension of the elbow (two images a second). *C*, Flexion of the fingers the knee joint (two images a second). *D*, Thorax and abdomen of a guinea pig. The intestine filled with bismuth paste is shown in active peristalsis with the bismuth bolus travelling rapidly along the intestinal canal (twelve images a second). *E*, Thorax and abdomen of a monkey (ten images a second).

to reproduce his operations in colors, much in the same manner and by a similar process as that adopted by his color photographer, the well known M. Courtellemont, in his excellent polychrome plates which are now appearing serially in the *Annales de Doyen*.

Merely to show what has been accomplished by the cinematograph in recording surgical operations, I shall project upon the screen several of the Doyen films, which I obtained from the Eclipse Company while in Paris last summer. I regret that none of the color films were available, but these will suffice to show what can be done with an ordinary instantaneous film and I trust it will be sufficiently satisfactory and impressive to encourage the belief that it will not be long before our own enterprising teachers and operators, on this side of the Atlantic, will adopt this method of recording their most typical operations. It is evident that the outlay would at the start be considerable, but in every great university or teaching centre the services of a competent cinematographer especially qualified for cinematographic work should be available. Some of this work could be done by individual initiative. The prospect of the expense is not so alarming when we consider that the cost of an outfit has been very much reduced both in France, by improvements made by the Pathé brothers, and in this country by the efforts of the Edison Kinetoscope Company. In a recent letter (November 28th) kindly referred to me by Doctor Le Conte, of Philadelphia, the Edison Company announces that it expects to have very shortly a home kinetoscope which is both a motion picture and stereopticon apparatus, projecting pictures of different sizes. A notable feature of this machine is that it uses a film which contains three rows of pictures which enables the operator to exhibit on barely eighty feet of film the equivalent of 1,000 feet of the regular professional film. As the new film will sell for fifteen cents a foot, making the cost of the eighty foot film twelve dollars, as against approximately one hundred, or the equivalent in professional films, you will realize that the cost has been greatly reduced and the kinetoscope made much more available to the general public. This new instrument will, it is announced, be listed at about fifty dollars, making it comparatively cheap and also available to the individual teacher.

The purpose of the company in issuing these new machines and films is to make them especially useful and available for educational work in schools, churches, and all kinds of organizations. By this means we see the time rapidly approaching when the surgical specialist or teacher of surgery may keep a cinematographic record of his own operations and thus establish the basis of a mutually co-operative and interchangeable cinematographic surgical clinic in which all the interested workers can participate.

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INDEX TO CINEMATOGRAPH FILMS.

These exhibit ultramicroscopic objects in motion, shown by dark field illumination obtained by the method of M. J. Comandon (reproduced by courtesy of Messrs. Pathe freres, Paris).

FIG. 1.—Human blood. The red and white corpuscles are shown in the living blood in motion.

FIG. 2.—The blood of oviparous animals. The blood of a bird has been reproduced in this film. The large oval erythrocytes of this species are shown. The nucleus of the red cell is not seen in this film, as this feature is not visible by oblique illumination; other films are issued which show the nuclei very plainly in altered blood undergoing hemolytic changes. The blood of the frog and salamander is especially suited for this demonstration on account of the large size of the corpuscles. In this film the interesting phenomenon of agglutination of the red corpuscles in radiating groups with a smaller leucocyte as a centre is well shown.

FIG. 3.—Hemokonia or blood dust. These are particles of fat averaging one micron in diameter. They are seen agitated in lively fashion by Brownian movements. They are present in the blood in proportion to the amount of fat ingested. The blood of suckling animals at the breast is especially favorable for this demonstration.

FIG. 4.—The amoeboid movements of a leucocyte are illustrated in this film. This preparation has been made and obtained from the living blood of a salamander. It shows in a striking and almost diagrammatic manner how the pseudopods or protoplasmic prolongations of the leucocyte are formed.

FIG. 5.—*Trypanosoma Lewisii*, a parasite found in the blood of sewer rats. In Paris, one out of five rats is affected with this disease. It is only fatal in very young animals. In the fatal forms of these parasites, the blood is infested with great numbers of these parasites, infinitely more numerous than the blood cells themselves. The film as reproduced gives no idea of the immense number and activity of these trypanosomes as they are revealed by the picture projected on the screen.

FIG. 6.—*Trypanosoma Brucei*. This film is introduced by a picture of the formidable tsetse fly, *Glossina palpalis*, which is the cause of the fatal nagana—a disease which destroys whole herds of cattle and horses in South Africa. The film exhibits the blood of a rat inoculated with the nagana parasite or Lewis's trypanosome. The rat usually succumbs to an experimental inoculation at the end of four or five days. The picture of the blood infested with these countless myriads of parasites is startling and imposing to the observer who sees the progress of the parasitic invasion on the screen.

FIG. 7.—Agglutination of *Spirocheta gallinarum* analogous to the Widal reaction in typhoid fever. The blood of a fowl infected with chicken cholera treated with the serum of an animal immunized against the spirochete.

FIG. 8.—Recurrent fever. This film when magnified on the screen shows *Spirocheta Obermeieri* in action. The Russian type of recurrent fever is transmitted by the bed-bug. The African type, caused by *Spirocheta Duttoni*, is inoculated by a tick (tick fever). The reproduction of the film here given fails to show the parasite except on very close examination with a lens. On the screen these scarcely visible forms are projected with great vividness and effectiveness, and their biological characteristics are brought out in a manner that is startling even to those who are familiar with the usual methods of microscopic demonstration.

FIG. 9.—*Spirocheta pallida* or *Treponema pallidum* discovered by Schaudin, 1905. The specific organism of syphilis. This film is introduced by the exhibition of a laboratory inoculation of a rabbit's cornea followed by sections of the ulcer showing pure culture of this remarkable parasite in great numbers and in the fullest activity. In another film the cure of the lesion by the destruction of the parasites after the injection of the Ehrlich-Hata "606" is shown with wonderful detail and effectiveness.

Correspondence.

LETTER FROM EDINBURGH.

Meeting of the British Pharmaceutical Conference.

EDINBURGH, August 21, 1912.

After an absence of exactly twenty years—the last occasion was in 1892—the British Pharmaceutical Conference this year held its annual meeting in Edinburgh. The meeting, which lasted from July 29th to August 1st, was a particularly successful one, the attendance being the largest yet recorded at any meeting, and the papers being of a very high order of merit. The discussions in the practice section, too, were of exceptional interest. The president, Sir Edward Evans, in his opening address, reviewed the present condition of pharmacy, and compared British practice with that of America, from which country he had just returned. He spoke in high praise of the Bureau of Plant Industry in connection with the United States Department of Agriculture and advocated the establishment of a similar institution in this country.

Among the scientific papers, notice may be taken of a few of more or less direct medical interest. Mr. Martin, in The Iodine Content of Thyroid Glands, showed how these varied in iodine content, and that the iodine standard suggested by Bennett (0.15 per cent.) might well be raised. It was also suggested that the dose of thyroideum siccum as given in the *British Pharmacopoeia* was much too high (five to ten grains) and should be corrected to one half to three grains. A paper by Dr. Ian Struthers Stewart on The Preparation of Bacterial Vaccines described a simple method of vaccine standardization. Doctor Goodall dealt with the physiological testing of tinctures of digitalis and strophanthus in somewhat forcible language, and an animated discussion followed in which some held that there was a difference between toxicity and physiological activity, and the fact that a certain quantity would kill a frog did not prove that it would cure a human being. A paper by Dr. Gordon Sharp and Mr. F. W. Branson on the Standardization of Digitalis, dealt mainly with deterioration of various samples after keeping. Mr. J. H. E. Evans gave an interesting contribution on the Cultivation of Drugs, in which he suggested that more attention should be paid to such cultivation in British colonies. Mr. Hampshire and Mr. Furnival showed that the formaldehyde tablets of commerce were far from uniform in strength, many being very low in formaldehyde content, probably due, as a member suggested, to loss on drying. Mr. C. A. Hill contributed a Note on Calcium Lactate, in which he dealt with the solubility of the drug and made some suggestions for its inclusion in the next edition of the *British Pharmacopoeia*. Mr. R. R. Bennett read a paper on the Solubility of Ether in Normal Saline Solution, and showed that the amount of alcohol present in the ether affected its solubility, a matter of some importance in connection with intravenous anesthesia. An important paper by Mr. Crossley-Holland on The Suitability of Various Commercial Proteins for Pharmaceutical Use, reviewed the various proteins on the market and gave some interesting details of their man-

ufacture, together with particulars of a new "ascending film" process for preparing milk casein. Mr. Finnemore and Miss Braithwaite pointed out that hyoscine (scopolamine) hydrobromide owes its variation in action to the fact that there were two classes of the drug, in one or other of which most samples could be placed. They showed how these classes might be recognized. Professor Schär, of Strassburg, contributed a note on the chemical examination of blood stains. Numerous other papers of more purely pharmaceutical character were read.

Of considerable importance to the medical profession was a paper by Mr. Rutherford Hill on The Relations of Physician, Pharmacist, and Patient, which was read before the practice section. In it the author discussed various ethical questions connected with the prescription, the duties of the writer of the prescription, and of the dispenser, toward the patient and toward one another. A case was cited which occurred in the Scottish Law Courts, relative to the relations of prescriber and dispenser. In this case it was decided that no privilege existed that placed these in the relation of master and servant. A doctor had used very strong language to a patient, implying criminal neglect and wrong dispensing on the part of a pharmacist. The latter sued the physician for slander and was awarded substantial damages. Mr. Hill then considered the question of property in the prescription. The usual custom in Great Britain is to give the prescription to the patient, leaving him to do with it as he pleases. This suggests that the prescription is the property of the patient, and from this assumption two evils are likely to arise. The prescription may be handed over to friends; this is unfair to the prescriber. Or it may be repeated indefinitely, which is not only an injustice to the prescriber, but frequently leads to disastrous consequences for the patient. He suggested that physicians and pharmacists might wisely confer in order to devise some remedy for an admitted evil. Mr. Hill showed that a prescription ought in all cases to be treated as a confidential document, and that the physician should be able to rely absolutely on the pharmacist's loyalty in this respect, also that the pharmaceutical conference might exercise some disciplinary powers over pharmacists in regard to purity of medicine and professional honesty. The key that unlocks every difficulty, and satisfactorily solves every problem is the studious observance by all parties of the golden rule.

The social side of the conference was no less successful than the serious side. The meetings were held in the University Union, which served as headquarters for the conference and proved an ideal building for such a purpose. The large debating hall, accommodating 500 persons, was full during the delivery of the presidential address, and the same condition obtained in the dining hall at the daily lunch. On Monday evening the delegates were officially received in the city chambers by the Lord Provost (Sir William S. Brown), magistrates, and council of the city. The chambers were beautifully decorated, and the traditional ritual of the capital of Scotland included the presence of halberdiers in their old world costumes. On Tuesday

afternoon there was a garden party, and a brilliant at home was held at the Union the same evening. On Wednesday afternoon the delegates visited Dunfermline and were entertained by the Carnegie Trust in the beautiful Pittencrieff glen, and on their return to Edinburgh a successful *café chantant* took place in the Albyn rooms. On Thursday the delegates visited Melrose and the land of Scott. Friday was devoted to golf, and the chairman of the local committee gave a select dinner in the evening. The delegates thus spent a most enjoyable as well as profitable week, and the Edinburgh conference will long be remembered, not only by the visitors, but by the local members of the medical and pharmaceutical professions.

Therapeutical Notes.

Treatment of Leucoplakia.—Aviérinos, in *Quinzaine thérapeutique* for June 25, 1912, states that in conjunction with hygienic measures, i. e., elimination of all causes of local irritation, chemical or mechanical, and with constitutional treatment, he has obtained excellent results by local application of the following solution:

℞ Cupri sulphatis, 2 grammes;
Aque destillate,
Glycerini, ana 10 grammes.
M. ft. solutio.

The buccal mucous membrane is first well dried and the patches of leucoplakia are treated with the solution, which is applied with cotton. An application is made every morning, after washing out the mouth, for twenty successive days. Ten days of rest are then allowed to pass, after which the treatment is resumed. At first the solution may be diluted one half, in order to test the sensitiveness of the patient's mucous membrane, irritation of which is to be particularly avoided. The copper sulphate solution was found by the author to be far superior to the solutions of salicylic acid, potassium bichromate, chromic acid, mercury salts, etc., hitherto used.

Treatment of Cardiac Palpitation.—A. F. Plicque, discussing this question in *Bulletin médical* for May 18, 1912, advises that the cause of the symptom be carefully inquired into before prescribing treatment. In cardiac palpitation associated with chloroanemia the following preparation does good, not only when continuously used, but even as an emergency remedy:

℞ Ferri chloridi, 1 gramme;
Spiritus ætheris compositi, 7 grammes.
M. Sig.: Take 6 to 20 drops in a glass of sweetened water when palpitation is felt.

In the secondary stage of syphilis cardiac palpitations are frequently observed; antiluetic treatment is curative.

In gouty patients, when the discomfort induced by tachycardia is unusually great, cautious use of the following ointment, in addition to the ordinary palliative remedies, may give relief:

℞ Tinctura colchici seminis, 4 grammes;
Adipis benzoinati, 30 grammes.
M. ft. unguentum.

At first a quantity of ointment only about the size of a hazel nut should be employed. The prepa-

ration should be discontinued if signs of gastrointestinal irritation appear.

For acute rheumatic patients, Fienza used the following for precordial inunction:

- R Sodii salicylatis, 5 grammes;
Iodoformi, 2 grammes;
Extracti hyoscyami, 1 gramme;
Petrolati, 20 grammes.
M. ft. unguentum.

Sig.: Apply over heart and cover with flannel and cotton.

For general use in palpitation due to one of various causes, but especially in the presence of cardiovascular disorders, Smakovsky recommends:

- R Chloralis hydrati, } ana 4 grammes;
Sodii bromidi, }
Codeina, 0.1 gramme;
Aque,
Syrupi aurantii, } ana 45 grammes.
M. ft. solutio.

Sig.: One tablespoonful every hour, preferably in milk.

A ten per cent. solution of camphor in dilute alcohol may be applied over the precordial region with advantage. In intense, prolonged attacks, the ice bag is most efficient.

Treatment of Ingrowing Toenail.—Lehmann, in *Archives de médecine militaire* (through *Tribune médicale* for June, 1912), recommends a simple, effective procedure for the ambulatory treatment of this condition, consisting in the application to the ingrowing edge of the nail, as well as to the inflamed soft tissues, of a dilute solution of ferric chloride. A small pledget of absorbent cotton, mounted on a stick of wood, is used, and care taken to insert it as deeply as possible. The ferric chloride should be allowed to act some time, though it is not necessary that a permanent tampon of it be left. No pain is caused. An application is made daily. The fleshy granulations are rapidly dried out and hardened, pain disappearing. Local infection of moderate degree is promptly overcome, though in cases with marked inflammation a few days should be spent in bed. Ordinarily the patient may be allowed to walk during the treatment, provided the toenail be properly trimmed and broad shoes worn.

Treatment of Arteriosclerosis.—G. Frank Lydston, in the *Therapeutic Gazette* for July, 1912, reports a case of extreme arteriosclerosis in a man, seventy years of age, in which the administration of thiosinamine appeared to lead to marked improvement in the condition of the arteries. The brachials were as large as a lead pencil and so prominent as to be visible at a considerable distance. The blood pressure varied between 180 and 200 mm. Hg. Thiosinamine was given in capsules, beginning with one fifth grain, three times daily, which was gradually increased to one grain, for a period of about four months. As a result the brachials were reduced in size so that they could be detected only by the touch, the temporals reduced to the average size in a man of seventy years, and all accessible arteries perceptibly softened. The blood pressure was not altered, but great relief was given to the mind of the patient, who had been worrying continually about the enlargement of his vessels. The improvement continued for six months, death eventually taking place from uremia.

Treatment of Psoriasis and Lichen Planus.—

J. W. Wiltse, in the *American Journal of Dermatology* for July, 1912, reports excellent results in psoriasis and lichen planus with intramuscular injections of sodium cacodylate. The cases treated represented all grades of psoriasis, from the isolated, indolent patch to the general and acutely inflamed cases. In none was external treatment employed, save for the relief of itching. The injections were begun with the contents of a five grain ampoule of the cacodylate, and were made every five days into the upper half of the buttock with a Luer syringe carrying a 1.25 inch needle. The dose was soon increased to two ampules at a time. The injections caused little or no pain, and no subsequent soreness resulted. The number of injections required to accomplish a cure varied from ten to twenty; but subjective symptoms, such as itching and burning, however, were relieved long before the course was finished. Special care should be taken to use a needle long enough to get the remedy well down into the muscular tissue. The drug is well absorbed, leaving no nodules or indurations.

Treatment of Acute Weeping Erythematous Eczema.

—G. Norman Meachen, in the *Practitioner* for May, 1912, states that when this form of eczema occurs on the face there is usually much edema in the infraorbital region, and the condition may at first be mistaken for erysipelas. Greasy applications are best avoided, and simple wet dressings with folds of butter muslin soaked in normal saline solution, the patient being preferably confined to his room, are most acceptable. The following calamine lotion, applied on lint, will relieve the irritation and smarting:

- R Zinci carbonatis (impuri), 3ii;
Zinci oxidi, 3i;
Glycerini, 3ss;
Liquoris calcis, q. s. ad 3vi.

M. ft. lotio.

Upon the extremities, lead lotion is often best; it may be combined with the calamine lotion in equal parts.

When the exudation has practically ceased, powders or ointments may be applied. Of the former the oleopalmitate of zinc [or zinci oleostearas, N. F.] is useful. This may be mixed with one half its weight of powdered starch. The following zinc cream is also a good application in these cases:

- R Zinci oxidi, 3i;
Adipis lane, 3ii;
Olei olive, } ana partes aequales, ad 5iv.
Liquoris calcis, }
M. ft. cremor.

Treatment of Dyspepsia in Infants.—Hutinel, in *Paris médical* for March 16, 1912, is credited with the following formulæ for the treatment of digestive disturbances in infants:

I.

- R Acidi lactici, 2 grammes;
Syrupi aurantii, 40 grammes;
Aque destillate, 100 grammes.
M. Sig.: One teaspoonful every hour between feedings.

II.

- R Acidi hydrochlorici, 0.1 gramme;
Syrupi aurantii, 50 grammes;
Aque destillate, 250 grammes.
M. Sig.: One teaspoonful before or after each feeding.

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CHARLES E. DE M. SAJOUS, M. D., LL. D.,
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MEDICAL EDUCATION IN THE UNITED STATES.

The transformation which medical education is now undergoing in this country is clearly shown in the annual presentation of educational data by the Council on Medical Education of the American Medical Association (*Journal of the A. M. A.*, August 24, 1912). While the total number of medical colleges in all foreign countries is shown to aggregate 205, the total number in the United States, exclusive of sectarian schools, is still 116, but even this large number represents a reduction of fifty colleges over those which flourished in 1904, the year notable for weak institutions. That the process of elimination will continue, is suggested by the fact that the mesur  which has proved effective in this connection, the classification of colleges into classes, is being resorted to with due severity, eighteen Class A schools having recently been reduced to the lower grade. Yet the conditions upon which this newer classification was based—an examination of each college with the merits of its ten salient features as factors for computation, viz., showing before State boards, entrance requirements, character of teaching curriculum, character and cleanliness of medical buildings, laboratory facilities and instruction, dispensary facilities, hospital and maternity facilities, faculty and full time instructors, noncommercialism, and finally possession of libraries, museums, etc.—

are all, on their face at least, perfectly fair. As things now stand, Class A includes those schools which obtained a sufficiently high percentage; Class B those which gave a sufficiently high percentage to show that with certain improvements they could be made to rank with their sisters; while Class C has from the start included those schools which met the requirements in no way and needed a complete reorganization. That Class C should have suffered most under these circumstances is self evident; all but a few of these institutions have now passed out of existence.

The fact that eighteen Class A schools should have been reduced in rank recently shows clearly that the higher classification does not constitute a shield behind which deficiencies can be hidden. This fact to a material degree equalizes the two classes as far as the future is concerned; it accounts, moreover, for the large sums that are being spent by both A and B schools to increase their teaching efficiency. Indeed, no less than twenty-four schools: the Medical College of Alabama, the College of Medical Evangelists, Georgetown University, the University of Georgia, Rush Medical College, Northwestern University, the University of Indiana, Drake University, Iowa State University, the University of Kansas, Tulane University, the Medical School of Maine, the University of Michigan, Baltimore Medical College, the University of Minnesota, Syracuse University, the Leonard Medical School, the University of North Carolina, Western Reserve University, Jefferson Medical College, Temple University, the University of Tennessee, Vanderbilt University, and the University of Virginia have recently devoted sums ranging from twenty thousand to four hundred thousand dollars to improve their equipment for laboratory and clinical teaching alone, while twelve other schools have spent smaller amounts for the same purpose. The benefits that will eventually accrue to the cause of medical education, the profession, and the public from all this outlay need hardly be emphasized.

It is a case of survival of the fittest, but by no means necessarily of the largest. A small school has as good a chance as the largest if it will do what is necessary to give a properly prepared student a thorough medical education; none other is wanted nowadays.

THE ACTION OF RAY THERAPEUTICS ON MALIGNANT TUMORS.

At the recent meeting of the British Medical Association, Ernest H. Shaw reported the results of the histological examination of malignant growths he had made in two large London hospitals. After a short series of case reports (five), his generaliza-

tions are given in the *British Medical Journal* for August 17, 1912. The changes Shaw finds in tumors, whether they have been subjected to ray therapeutics or not, are: Round cell inflammatory infiltration, formation of fibrous tissue in varying amounts, and necrosis of tumor cells. These changes, according to Shaw, are Nature's efforts to destroy the neoplasm by checking and ultimately overcoming its cells. Necrosis, for example, is a familiar feature in parts of a malignant growth; at an ulcerated surface, sepsis is obviously the exciting cause, but in the central portions of a tumor, the only explanation is a deficient supply of blood. The changes seen, therefore, in tumors after treatment by x rays or radium, are not specific changes; the necrosis may be due to the rays, but we must remember that it occurs apart from such treatment.

Only a small number of tumors, it is true, undergo these changes without ray therapeutics, and a very large number after the ray treatment, when they even disappear completely. This is what encourages the ray therapist to persevere. The tumor decreases in size, the cells are destroyed or absorbed, and the fibrous tissue contracts. Shaw's summary is, then, that Nature, in her attempts to check and destroy the invading cells of a malignant growth, brings all her inflammatory forces into line. X rays and radium act by destroying a certain number of malignant cells outright, but they act mainly as a stimulant to the healthy cells of the body to urge them on to still greater inflammatory activity.

While the physician's ideal is prophylaxis, there is something very attractive about this theory of Shaw's concerning radium and x rays. Aiding Nature against an enemy appeals to one's sense of the fitness of things; there is a certain satisfaction in putting an enemy to rout quite wanting when one has merely evaded him.

FAT EMBOLUS.

Fat emboli result from fractures and trauma to fatty tissue and, as is known, become lodged in the pulmonary capillaries, the lesion making its presence evident by accelerated respiration and pulse, with indefinite pain in the thorax. The embolus is in part absorbed, and in part eliminated by the urine.

Such is the ordinary evolution of fat emboli, but the process is not always so simple, and one meets with what may be termed the serious types not infrequently, as is made evident from the fact that at the medicolegal institute at Berlin, out of a total of fifty cases of death from fracture, Burger found three instances of fat embolus; in other words, six per cent.

The serious types of fat embolus result in two

forms of death, namely, the respiratory and cerebral. In the former the patient dies suddenly, within an hour or less, with symptoms of collapse and dyspnea, while the necropsy shows pulmonary edema and occasionally small hemorrhages into the pulmonary parenchyma, signs apparently insufficient to explain the cause of death. But all the small arteries, all the capillaries are filled with fat to such an extent that there is hardly a vessel not involved.

In these cases, even macroscopically, drops of fat may be seen to come out from the pulmonary vessels, and after a few minutes the surface of the section will be found covered by a thin, glistening layer of fat. No other organs appear to be involved in the process. This type has been encountered in patients who have suffered from violent traumatism, particularly involving a large area of subcutaneous fat. The cerebral type is quite different. The patients feel well, for frequently there is no relationship between the gravity of the causal lesion and that of the embolus. Usually, at the end of twenty-four hours, stupor develops, sometimes followed promptly by coma. In the majority of cases there is a quiet sleep from which the patient does not awake. There is rarely any muscular rigidity or tonic, clonic, or epileptiform convulsion. The temperature is around 102° F., and death takes place within three or four days.

The treatment is most problematical, but early massage should be avoided. Wilms has advised making a fistula in the thoracic duct on the theory that the fat is taken to the lungs by the large lymphatics, but at present we know that the larger amount is conveyed by the bloodvessels, and, therefore, little can be expected from this surgical procedure.

A NOVEL METHOD OF DESTROYING MOSQUITOES.

For the past ten years a French physician has been destroying the mosquitoes that infested his house and garden by a method all his own. He took as a model for his engine of death the ordinary butterfly net, simply lengthening and strengthening the handle, replacing the net with one of a finer mesh, and having the latter constructed so as to end in a narrow bag instead of the round one used for the harmless and beautiful sister of the mosquito. With this weapon, Legendre tells us in *Presse médicale* for August 14, 1912, he has seized upon mosquitoes, whether flying or at rest, at the rate of several thousand in a hunt lasting only fifteen minutes. In one day, a few hunters have captured from 50,000 to 80,000 insects in one establishment; the calculation being made on the basis

of 900 fresh mosquitoes weighing one gramme (fifteen grains).

Legendre points out that the use of his net might prove of great assistance in freeing the room of a yellow fever (or malarial) patient of *Stegomyia*; the windows should obviously be closed, if not already screened, and subsequent war waged against the larvæ. He suggests that in tropical countries the young natives might easily be taught to consider the extermination of mosquitoes by this method an amusing game. A child's nurse, armed with a net, can easily save her charge from mosquito borne infection during a walk in a park or garden. While daylight offers better view of the game, artificial illumination need not put a stop to the chase. Legendre first published his idea in a colonial medical journal, two years ago, but little thought it was capable of such development as it has recently exhibited.

CANCER RESEARCH.

The fifth scientific report on the investigations of the Imperial Cancer Research Fund has appeared. It deals solely with the nature of the resistance which may be artificially produced to the inoculation of cancer and the bearing of the results on the biology of the tumor cells. The four papers which it contains give additional evidence that tumor or normal tissue produces immunity only when it is derived from the same species of animal as that on which the test is made, and that the immunity produced by these substances is of the same nature. Thus we learn from S. Higuchi, that the strongest immunity against mouse carcinoma is elicited by mouse tissues. The epithelial tissues, skin, mammary gland, and placenta produce a stronger reaction than the nonepithelial tissues, such as blood and spleen; and this power is not due to the blood contained in the placenta, but largely to the proper placental tissue elements. Rat tissues appear at times to produce a weak immunity against mouse carcinoma, but this result is not constant, and is always feeble; while guineapig tissues are practically incapable of inducing the resistant condition. The same can be said of the resistance offered by rats, in experiments conducted by William H. Woglom, of Columbia University, who also found that, as no difference could be detected between grafts taken from rats treated with embryo skin, and those removed from animals which had undergone a previous successful operation with tumor, resistance is similar in these two cases. Doctor Russell states that different tumor parenchymata vary widely in their power of inducing resistance. He also shows that mice bearing progressively growing tumors can be immunized against reinoculation, even although this immunity does not, as a rule, inhibit the further development of the tumor already established. Doctor C. Da Fano, of Milan, demonstrates that the development of immunity is accompanied by a general reaction of the connective tissue throughout the body. He demonstrates that by

changes which each class of cells undergoes, such as polymorphonuclear leucocytes, the lymphocytes, the plasma cells, the macrophages, the mast cells, and the fibroblasts; while the other connective tissue elements do not appear to possess a definite bearing upon the induction of immunity. In his examination and experiments he has not considered the hematopoietic system.

VIRULENT SMALLPOX.

For a number of years smallpox has been widely prevalent in the United States, although in a mild form, but an outbreak of the virulent type of the disease can always be expected under the present laws. Such an epidemic is reported in the *Public Health Reports* for August 30th from two different localities: In Los Angeles, from July 28th to August 17th, nineteen cases of smallpox were given with seven deaths, which all occurred in persons who had never been vaccinated, with the exception of one person who had been vaccinated thirty years before the attack. In the neighboring city of Pasadena, during the latter part of July, there were three cases with two deaths. A pronounced outbreak of the virulent form is also reported from Tarrant County in Texas. We hear from Carbondale, Pennsylvania, that there is a severe epidemic of smallpox, necessitating the closing of the churches on Sunday and postponement of the opening of the schools. There is no official report so far, but it has been stated that the epidemic is mild; up to September 3d, thirty-six cases have been reported and compulsory vaccination has been enforced.

EXEMPTION FROM FRENCH MILITARY SERVICE.

A summary appears in *Journal de médecine de Paris* for August 17, 1912, of the various diseases and deformities which exempt the French citizen from military service. We note that apart from the obviously chronic diseases, paralysis of various kinds, *tics*, periostitis, osteitis, hydrarthrosis, etc., somnambulism is a bar to enlistment, also deafness, defective vision, persistent adenoids, lesions of any part of the eye, stammering, harelip, hypertrophic glossitis, cleft tongue or palate. The generative organs must be perfect, the hands and feet normal without supernumerary digits, hammer toe, flatfoot, ingrowing nails, bunions, obstinate hyperhidrosis, or webbed toes. Visceral tuberculosis is an absolute bar, and careful physical examination is made for the possible existence of this disease. Local manifestations of tuberculosis, and bronchitis, asthma, emphysema, pleurisy, must all be cured before enlistment. Cyanosis, pericarditis, endocarditis, aortic aneurysm, other organic cardiac lesions are incompatible with military service. Syphilis, if the lesions present are incurable, exempts from service; if prolonged treatment is successful the candidate may be admitted to the auxiliary ranks. Gonorrhea, buboes, or secondary syphilitic manifestations do not exempt. While treatment is being given for any of the supposedly curable diseases, the recruit is on half pay, possibly for a year. If he does not

regain a certain high standard of health, he may be placed for the term of enlistment on the auxiliary forces, also at half pay.

Medical Law.

VIII. CIVIL MALPRACTICE.

The case of Groendal vs. Westrate, 137 Northwestern Rep. 87, is an action commenced in the State of Michigan, against a physician for failing to discover and reduce a dislocation of the shoulder. The defense interposed was that the action was not commenced within two years, the statutory period for the commencement of such action.

It appears from the case that, on May 1, 1906, plaintiff, a heavy woman, fell, sustaining a subglenoid dislocation of the humerus. The defendant called within about half an hour after the accident and, after examining the injury, stated in the presence of plaintiff, her husband, daughter, and another, that the arm was not out of joint or broken, that it was just stretched and bruised. He simply bandaged the arm and treated it with liniment. Defendant continued to treat plaintiff at her house several weeks, and at his office for several months, without giving her any relief. He again told her in January, 1907, that her arm was only stretched and strained, and that it might take two or three years before it became much better. He never told her that it was dislocated. The dislocation was never reduced, and the bones were in the same position at the time of the trial as when the injury was first received. It appears that plaintiff had known defendant about eleven years, and he had been her family physician most of that time, during which she had no other physician; that he was a Hollander, as was plaintiff, and he conversed with her in her native tongue; that he saw her many times during the year 1907, frequently asked about her arm, and was told that it was no better. During all of this time, and until April, 1909, she believed and relied upon what defendant told her about her injury. In April, 1909, another physician told plaintiff that her arm was dislocated. She then told defendant of this and he stated that it was not so. Plaintiff, in bringing her action after two years had elapsed, relied upon a section of the Michigan statute which reads: "If any person who is liable to any of the actions mentioned in this chapter shall fraudulently conceal the cause of such action from the knowledge of the person entitled thereto, the action may be commenced at any time within two years after the person who is entitled to bring the same shall discover that he has such cause of action, although such action would be otherwise barred by the provisions of this chapter." The trial court held that there was no evidence of fraudulent concealment to be passed upon by the jury, and therefore directed a verdict for the defendant.

The plaintiff appealed, contending that the facts as shown by the evidence should have been submitted to the jury for them to determine whether or not there had been fraudulent concealment. The Supreme Court concluded that plaintiff was right and sent the case back for a new trial.

Mr. Justice McAlvay, speaking for the court, after referring to the evidence above mentioned said:

In addition to the evidence in the case presented by plaintiff, we have the testimony of defendant that he discovered the dislocation of plaintiff's shoulder when first called to attend her. Whether he first knew then, or discovered it later, when it was too late to reduce it, as the declaration charges, is of no consequence.

If her testimony and that of her witnesses is true—and it must be so taken in this discussion—the conclusion cannot be avoided upon this record that there was evidence to go to the jury tending to show that he fraudulently and purposely concealed from her the nature of her injury, which she was entitled to know, and made untruthful statements as to her condition. In the instant case it was not a mere concealment on the part of defendant which was relied upon. Defendant repeatedly told plaintiff that her arm was not broken or dislocated, assured her that it would require several weeks to recover from the injury; that it was only bruised and strained, and the cord stretched. When she told him she thought one shoulder was lower than the other, he told her that it only appeared so to her, and, finally, when confronted with the statement of another physician that her shoulder was dislocated, he protested that it was not so.

X. THE PHYSICIAN AS WITNESS.

It has been observed that the rule has been laid down in some States that the physician might testify to exclamations of pain made by an injured patient while examining him.

In the case of Marshall vs. Wabash R. Co., 137 Northwestern Rep. 89, the witness who was about to testify as to the condition of the plaintiff whom he examined, was cautioned by the trial court to omit from his testimony statements made by plaintiff and actions of plaintiff, to state the condition he found and his opinion only. The Supreme Court in passing upon the correctness of this instruction said:

In cautioning the witness, the court voiced the proper rule to be observed in such cases, a rule so often stated and so long adhered to in this State that it ought not to be misapprehended.

News Items.

Leprosy in the United States.—Two cases of leprosy have been reported in Michigan during the present year, in persons who have resided in the State for a number of years. During the calendar year 1911 there were reported in the United States 41 cases of leprosy, which were distributed among 19 States. This brings to general attention the fact that there is no definite policy which will act uniformly throughout the country for the control and segregation of lepers.

A Congress of Surgeons in New York.—The Third Clinical Congress of Surgeons of North America will be held in New York from November 11th to 16th, under the presidency of Dr. Edward Martin, of Philadelphia. The work of the congress will be divided into six sections, as follows: General surgery, gynecology, genitourinary surgery, orthopedics, obstetrics, and eye, ear, nose, and throat surgery. The evenings will be devoted to the reading and discussion of scientific papers.

Infectious Diseases in New York.—During the week ending August 24, 1912, the following cases of communicable diseases with the deaths therefrom were reported to the Department of Health of the City of New York: Pulmonary tuberculosis, 327 cases, 166 deaths; diphtheria and croup, 177 cases, 10 deaths; measles, 104 cases, 8 deaths; scarlet fever, 51 cases, 3 deaths; chickenpox, 13 cases, 0 death; typhoid fever, 136 cases, 19 deaths; whooping cough, 30 cases, 8 deaths; cerebrospinal meningitis, 5 cases, 7 deaths.

Civil Service Examinations.—Among the positions for which the New York State Civil Service Commission will hold examinations on September 21st are: Physician, homœopathic or regular, \$1,200; dentist, resident, State institutions, \$600 and maintenance; sanitary inspector, Ossining, \$600.

Measures Taken to Keep Rats Out of Porto Rico.—Following the proclamation by the Public Health Service that Porto Rico is now free from plague, a systematized ratproofing of buildings is to be inaugurated by Federal authorities in the island, with a view of avoiding future outbreaks. Assistant Surgeon Williams has established himself at Ponce, from which point he will supervise the catching and killing of all rodents.

Trained Nurse, Philippine Service.—The United States Civil Service Commission announces that the examinations for trained nurse in the Isthmian Canal and the Indian services will be held on October 16, 1912, as scheduled, but that the announcement of the examination for this position in the Philippine service is cancelled because of advice from the Bureau of Insular Affairs that future vacancies in this position in the Philippine service will likely be filled by Filipino women.

The Harvey Society.—The following provisional programme of lectures, with the subjects and dates, has been arranged for the season 1912-1913: October 5th: Professor Max Rubner, of the University of Berlin, on Modern Steam Sterilization; November 6th: Professor Joseph Erlanger, of George Washington University, on the Localization of Impulse Initiation and Conduction in the Heart; November 23d: Professor G. N. Stewart, of Western Reserve University, on the Rate of the Blood Flow and the Vasomotor Reflexes in Disease; December 14th: Professor F. B. Mallory, of Harvard University, on the Infectious Lesions of Bloodvessels; January 18th: Major J. J. Russell, United States Army, on the Prevention of Typhoid Fever; February 15th: Professor Theodore C. Janeway, of Columbia University, on Nephritic Hypertension; Clinical and Experimental Studies; March 1st: Professor Edward C. Conklin, of Princeton University, on the Size of Organisms and Their Constituent Parts in Relation to Longevity, Senescence, and Rejuvenescence; March 22d: Professor John Howald, of Johns Hopkins University, on the Scientific Basis for the Artificial Feeding of Infants.

Personal.—Dr. Charles L. Parsons, secretary of the American Chemical Society, has moved from New York to Washington, D. C., and the headquarters of that society will henceforward be in Washington.

Dr. C. B. Meding, of New York, will spend October and November in Amritsar, India, studying cataract extraction under Colonel Henry Smith, M. D., I. M. S.

The new State entomologist of New Jersey is to be Dr. T. J. Headlee, State Entomologist of Kansas, who will enter upon his new duties on October 1st. He will also be professor of entomology at Rutgers College and entomologist to the State Experiment Station.

Dr. H. A. McCallum, of London, Ontario, was elected president of the Canadian Medical Association, at the forty-fifth annual meeting of the association held recently.

Professor von Wassermann has been appointed head of an institute for experimental research on cancer recently established by the Kaiser Wilhelm Society for the promotion of science.

Dr. A. S. Estey, health officer of Calgary, Canada, has tendered his resignation.

Dr. George Gibier Rambaud, of New York, president of the Pasteur Institute, has been awarded by the French government the title of Chevalier of the Legion of Honor, as a recognition of the work done by him in the treatment of hydrophobia.

Dr. A. F. Bernstein has been appointed chief surgeon of the State Hospital at Scranton, Pa.

Professor H. Strauss, of Berlin, will lecture at the New York Postgraduate Medical School and Hospital, Second Avenue and Twentieth Street, October 12th, 14th, and 15th, on Diseases of the Stomach and Kidney. Professor Carl von Noorden, professor of pathology and therapeutics at the University of Vienna, will also deliver a series of lectures on the Pathology and Treatment of Diabetes, Radium Therapy, and Arteriosclerosis, October 28th to October 31st inclusive.

Changes of Address.—Dr. S. R. Klein, from Valhalla, N. Y., to 2811 Cottage Grove Avenue, Chicago, Ill.

Congress on Hygiene and Demography.—The Fifteenth International Congress on Hygiene and Demography will be held in Washington, D. C., on September 23d to 28th. President Taft is honorary president of the congress, Dr. Henry P. Walcott, of Boston, is president, and Dr. John S. Fulton, of Baltimore, is secretary general. The Department of State has assumed the responsibility of the conduct of the congress, and has appointed the Hon. Huntington Wilson, assistant Secretary of State, chairman of the Committee on Organization. Dr. William H. Welch, of Baltimore, is chairman of the Executive Committee, and the address of the Executive Bureau is Senate Annex, New Jersey Avenue and B Street, N. W., Washington, D. C. In connection with the congress an Exhibition on Health will be held during the three weeks from September 16th to October 4th, at which the hygienic and demographic work of the United States and its dependencies is to be illustrated. Dr. J. W. Schereschewsky, of the United States Public Health Service, is director of the exhibition, and all communications concerning the exhibition should be addressed to him at the Senate Annex.

Positions for Physicians in Foreign Lands.—The missionary societies of the Student Volunteer Movement desire to correspond immediately with men and women who may be able to go into the field during the coming year. Some of the positions now open for medical men are: One married physician for the Sudan; one physician for India; one physician for the Presbyterian Hospital in Formosa; two physicians for general medical missionary service in Honan Province, China; one physician for hospital and general medical work for Kwantung Province, South China; two physicians for Central India; one doctor for the Teheran Hospital, East Persia; one doctor for Sultanabad, East Persia; one physician for Senneh, East Persia; one physician for the North Khorasan District; a physician for the Insane Asylum, South China Mission; one or two physicians in Africa; one unmarried physician for St. James's Hospital, Anking, China; one unmarried physician for St. Andrew's Hospital, Wushih, China, etc. In Turkey one physician is wanted in Diarbekir, in the heart of Asia Minor, to carry on a large dispensary work, which last year treated 8,300 patients, but is now closed for lack of a physician. Money is also in hand to build a hospital. Medical missionaries are not required to take a theological course, but should possess a practical knowledge of the scriptures. Postgraduate training in tropical and skin diseases is advantageous, but not essential. For a full list of the positions now open and for particulars regarding them write to Mr. Wilbert B. Smith, Candidate Secretary of the Student Volunteer Movement, 125 East Twenty-seventh Street, New York.

The National Association for the Study of Pellagra.—The second triennial meeting of this association will be held in Columbia, S. C., on October 3d and 4th. According to the preliminary programme which has just been issued, the work of the congress has been divided into the following sections: Etiology, epidemiology, and statistics; local history and diagnosis; laboratory investigations; clinical features; treatment; miscellaneous aspects of pellagra; lantern slides. Forty-three papers are listed on the programme, and other papers are expected from authorities on pellagra in Europe, South America, Philippine Islands, and the Canal Zone. Every effort is being made to enlist the interest of pellagra specialists all over the world, and the congress will really be international in character. A demonstration of pellagra cases will take place at the close of each day's sessions. A general committee has been appointed by the South Carolina Medical Association to make the necessary arrangements for the conference, of which Dr. J. A. Hauge, of Columbia, is chairman. Dr. J. W. Babcock is chairman of the executive committee, and he will be glad to send programmes upon application. Dr. H. W. Rice, of Columbia, is chairman of the committee of arrangements, and will give information about hotels, etc., to all who contemplate attending the conference. An invitation is extended to all persons interested in pellagra to join the association, as the membership is not to be confined to physicians and scientists, but extended to laymen as well.

Pith of Progressive Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

August 22, 1912.

1. BITH VINCENT: Blood Transfusion: Indications, Methods, and Results.
2. RULPH W. JACKSON: Intrarectal Rupture of Suppurating Sinus from Hip Joint Disease.
3. CHARLES C. FOSTER: Doctor Who Volunteers for Military Service, in Time of War.
4. LORING T. SWAIM: Intestinal Length and Nutrition.
5. JAMES R. TORBERT: Private Obstetrical Record.

1. **Blood Transfusion.**—Vincent says that the value of transfusion in secondary anemia is based upon the stimulating effect of the donor's blood. The wisdom of its use in such cases will depend upon the cause of the anemia. In general, transfusions should not be employed to restore red cells which have been destroyed within the body unless the cause of this destruction can be remedied by subsequent treatment.

2. **Intrarectal Rupture of Suppurating Sinus.**—Jackson reports a case of this nature and draws from the literature on the subject the following conclusions: Intraanal or rectal rupture of coxitis sinus occurs rarely, but not with extreme infrequency. Such an opening involves probably considerable mixed infection of the joint beyond what would occur if the opening was external, and tuberculous infection may arise. The intraanal opening is treated quite easily, and much of the mutual risk of infection is removed. The intrarectal opening is in most cases (unless the sinus approaches from low down) too high to turn aside in any way and give an external discharge, consequently the risk must continue. An operation for such a purpose is likely to create a complete rectal fistula where none existed before, because of the surgical difficulties in the way of securing permanent closure of the internal opening. It is a very rare and most unfortunate occurrence for such an abscess to point both externally and internally; an external incision should be made, if one is sure that internal rupture has not occurred, but avoided, if possible, if it has occurred, because of the fistula thereby created. However caused, such a fistula is a particularly troublesome one, and the wisdom of trying to better it surgically is on fairly debatable ground.

4. **Intestinal Length and Nutrition.**—Swaim finds that the size of the stomach varies enormously, that the tubular stretched stomach is present in six out of nine cases of ptosis, and that the lesser curvature can be stretched down greatly. The small intestines vary from ten feet six inches, to twenty-five feet ten inches, averaging nineteen feet three inches, but the length has only a slight effect on the nutrition, with a tendency to more fat the longer the intestine and vice versa. The large intestines vary from three feet eight inches, to eight feet five inches in length, averaging five feet three inches; the total average length of the entire intestines is twenty-four feet six inches. When the stomach is low the large intestine is apt to be longer and the cecum large and pendulous, the greatest length being in the transverse colon and sigmoid. A rather significant fact in cases of ptosis is that, not only are the hollow viscera displaced, but even more often the solid, such as the liver.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

August 24, 1912.

1. S. J. MELTZER: Training of Desirable Practitioner and His Mission.
2. JOHN M. DONSON: Addition of Fifth Year to Medical Curriculum.
3. LEO LOEB: Relation between Practitioner and Investigator in Medicine.
4. J. SHULTEN HORSLEY and C. C. COLEMAN: Experimental Devascularization of Segments of Intestine with or without Mechanical Obstruction.
5. A. RAYMOND: Injurious Effects of X Ray as a Therapeutic Agent.
6. WILLIAM B. TRIMBLE: Keratosis Follicularis.
7. FRANK E. SIMPSON: Keratodermie blénorrhagique.
8. J. MALKIN FINDLEY: Appendicitis Complicating Pregnancy.
9. MILLS STURTEVANT: Care of Scarlet Fever Patients.
10. J. LEH E. DE LEE: Nephritis in Pregnancy.
11. W. FRANCIS B. WAKEFIELD: Plea for More Careful Technique in Idiopathic Reconstructive Work.
12. P. T. GUTERMAN: New Bone Plate.
13. HARRY J. LEVIST: Salvarsan in Pregnancy.
14. C. P. OBERDOFF: Disappearance of Angioneurotic Edema after Appendectomy.

4. **Experimental Devascularization of Segments of Intestine with and without Mechanical Obstruction.**—Horsley and Coleman state that three theories have been advanced as to the cause of death in obstruction of the bowel: The nervous theory, that the nervous system is affected in the same way as in shock; the bacterial theory, that death is due to the bacteria present in the obstructed intestine; the toxemia theory, that death is caused by perverted intestinal metabolism. The nervous theory has few adherents, the majority believing in either the bacterial or toxemic theory. From the writer's experiments, ten in number, made on dogs, they find that bowel with impaired nutrition cannot be easily permeated by bacteria. In no instance did death ensue under three days, except where perforation had occurred and the bacteria and other intestinal contents were thrown into the abdominal cavity in very large quantities; where death then took place in a few hours. A short segment of intestine in a dog may be nourished through the omentum and maintain its integrity, provided it is thoroughly protected by omentum. They found also that in the dog, if a small portion of intestine became detached from its mesentery gangrene a fatal result did not always follow. The gravity of the situation is greatly heightened when mechanical obstruction occurs along with gangrene, as seen in many clinical cases, such as strangulated hernia, volvulus, and intussusception. Devascularization of a bowel segment without obstruction (when the bowel is severed from its mesentery by a wound) seems much less serious than if obstruction be present. Recovery is quite possible if such segment is short and wholly protected by omentum.

6. **Observations on Keratosis Follicularis; Five Cases in the Same Family.**—See this JOURNAL for June 8th, page 1220.

7. **Keratodermie blénorrhagique.**—See this JOURNAL for June 8th, page 1220.

8. **Appendicitis Complicating Pregnancy.**—Findley from a consideration and study of fifteen cases, has brought out many interesting points. He found that previous attacks of appendicitis had occurred in all but one of the fifteen cases. Six cases were mild, the patients recovering without interrupting pregnancy. Ten were severe attacks, in which three patients died. In one of the fatal cases the patient was not operated upon. One attack occurred

during labor, five in the puerperium, and nine during pregnancy. Unusual severity marked the cases occurring in the puerperium. Of the three deaths, one was due to bronchopneumonia and two to septic peritonitis, one of these was not operated in. The attacks recurred in the early months of pregnancy in the large number of cases, and the mild attacks did not disturb the pregnancy. In no case did appendectomy interrupt pregnancy. While pregnancy has a very great influence in causing recurrent attacks of appendicitis, it probably has little or no influence in initiating a primary attack. Fifty to sixty per cent. of women who have had appendicitis antecedent to pregnancy, will in subsequent pregnancies suffer more or less disturbances referable to the appendix. It is particularly hazardous to delay operation in sharp attacks, as appendicitis complicating pregnancy and the puerperium usually runs a rapid and destructive course. The best results follow operation when done early in the attack and early in the course of pregnancy. The mortality of severe cases not operated in, is placed at seventy-seven per cent., while in cases of all grades of severity, the mortality is 6.7 per cent., if operation is made within the first forty-eight hours, and would probably be less if done within the first twenty-four hours.

10. Nephritis in Pregnancy.—De Lee states positively that women with nephritis should not marry, and if married they should not conceive. Nephritides require especial care during labor. The heart should be closely watched and preparations be made for the same emergencies that occur with cardiac lesions. Rapid delivery may be necessitated by sudden edema of the lungs, or by attacks resembling cerebral embolism, the swollen labia even being punctured, if necessary to permit delivery. The writer emphasizes the dangers of antiseptic douches, and especially cautions against the use of the mercury bichloride. The anesthetic of choice is ether, and that should be sparingly used. The usual treatment is continued in the puerperium, and lactation is allowed only if the patient is in good condition and the renal symptoms are subsiding.

12. A New Bone Plate.—Geyerman has devised a boneplate, which differs from the Lane plate by being adjustable at one end, the upper surface of which is corrugated and has a slot instead of screw holes, over which fits a cap in which screw holes are located. The under surface of the cap is also corrugated, so that a firm hold is given when the screws are tightened. There has been no slipping in fourteen cases.

MEDICAL RECORD.

August 24, 1912.

1. WILLIAM W. GRAVES: Clinical Recognition of Scrophulous.
2. JOHN M. CRUCE: Importance of History in Diagnosis of Incipient Tuberculosis.
3. L. W. HILL: Coronary Sclerosis with Special Reference to Gastric Symptoms.
4. THOMAS G. STOKAN: Medical Supervision of School Children in South Manchester, Conn.
5. GEORGE W. BLUNT: Angrieta Leucotrigma. Fetus in Causation of Ophthalmia Nodosa.
6. FELIX VON OEFLE: Phosphoproteins in Diet.

2. The Importance of History in the Diagnosis of Incipient Tuberculosis.—Cruice reports that twenty-seven out of fifty patients diagnosed four or five years ago as nontuberculous,

either died or have at present undoubted tuberculosis. Though these diagnoses were made by trained diagnosticians, yet on account of the absence of physical signs, they were unable or unwilling to make a diagnosis of tuberculosis. Among the matters that should be given close attention are a history of exposure, cough, hemoptysis, chest pains, dyspnea, temporary hoarseness, gastric disturbances, history of chills, night sweats, loss of weight, fever, previous pleurisy, and attacks of pneumonia, typhoid, or influenza. When there is history, not of one of the foregoing symptoms, but a combination of two or three of them, no effort should be spared that a definite diagnosis of tuberculosis or other condition producing the symptoms be made. If repeated examination leaves one in doubt, the patient should have the benefit, and be placed under treatment for tuberculosis.

3. Coronary Sclerosis with Special Reference to Gastric Symptoms.—Held calls our attention to a certain combination of abdominal symptoms which are designated angina abdominalis and are referable to arteriosclerosis: The majority of the patients, males, are older than forty years. A continuous pressure in the epigastrium, more or less continuous, particularly after meals, is present. Another symptom, not dependent upon meals, but rather to psychic disturbance or exertion, is a boring sensation, radiating up under the sternum. There is also a marked sensation of fullness after meals, accompanied by slight dyspnea and an inability to lie down on account of palpitation of the heart. Nausea is frequently present, but no vomiting. Not infrequently there are severe paroxysms of pain with a sensation of impending death—in this condition a number of sudden deaths have occurred; two cases of sudden death with all the signs of epigastric pain and distress, where the primary cause was arteriosclerosis. While constipation is the rule, the bowels are usually irregular. The gastrointestinal tract should be thoroughly examined, as affections in this region may be associated with coronary sclerosis.

6. Phosphoproteins in Diet.—Von Oefele is convinced that the whole egg is a food fit only for the healthy, but not for the sick. In cases requiring proteins rich in sulphur he prescribes the white of eggs prepared in different ways. When proteins rich in phosphorus are indicated he prescribes in like manner the egg yolk. He asserts that it is very important to know the indication for proteins containing phosphorus, as they affect the life of the cell nucleus, and, consequently, the whole economy of the body. There are many proteins rich in sulphur, only a few rich in phosphorus.

BRITISH MEDICAL JOURNAL.

August 3, 1912.

1. F. C. MADDEN: Surgical Anesthesia by Strontium.
2. R. A. VEALE: Complications Following Administration of Hedonal.
3. G. N. BATES: Congenital Strabismic Deafness Treated by Sabouraud's Method.
4. A. ALFRED: Local Application of Salicylic Acid in Cure of Superficial Glossitis.
5. J. WALL: Gastric Leukemia Case Report.
6. E. J. POTTAS: Salivary Gland Metastasis.
7. A. S. PARKINSON: Records of Hospital Out-Patient Departments.

2. Complications Following Hedonal.—Veale gives the following complications seen in a series of somewhat over 300 administrations: 1. Cutan-

cous, (a) local edema, (b) blisters; 2, pulmonary, (a) edema, (b) pneumonia, (c) infarction; 3, venous, (a) thrombosis at site of injection, (b) thrombosis of femoral vein, (c) cerebral thrombosis. He remarks that the injection of a powerful drug in large quantities of fluid is not without considerable risk. When 1,100 to 1,200 c. c. of fluid have been injected, the danger zone has been reached. Practically no complications have been observed when smaller amounts have been used. The drug gives an excellent surgical anesthesia, and in cases of severe shock or in which there has been much previous loss of blood, this method of anesthesia is of advantage for it supplies the desired infusion.

4. **Local Application of Salvarsan.**—Allport reports a case of chronic superficial glossitis which had not responded to any form of treatment, and which had grown worse under mercury and the iodides, but which yielded promptly to the local application of salvarsan. He dissolved 0.1 gramme in half a drachm of water, added half an ounce of glycerin, and employed this as the application. The striking feature of the case is the extraordinary rapidity of the healing. After one week, only two days of treatment being given, the ulcers had diminished to one quarter their original size.

5. **Formaldehyde Poisoning.**—Watt reports a fatal case of poisoning by this drug in which death resulted within three hours after taking about an ounce of the commercial formalin. The characteristic features of the case were tendency to vertigo, unconsciousness, and greater implication of the respiratory than of the circulatory system.

LANCET

August 17, 1912.

1. F. SHUFFLEBOTHAM: Early Functional Treatment of Contusions and Sprains of Back.
2. C. A. BALLANCE: Epithelial Grafting for Sure and Rapid Healing of Cavity Left after Complete Mastoid Operation.
3. H. L. SARGENT: Operative Treatment of Simple Fractures of Long Bones in Children.
4. G. C. PURVIS: New Method of Demonstrating the Presence of *Bacillus coli* in Sewage Polluted Water.
5. E. J. DOWNING and A. PAINÉ: Etiology of Appendicitis as Result of Blood Infection; Particular Reference to Tonsils.
6. H. W. CROWT: How to Fit a Laboratory for Ten Pounds (\$50).

1. **Contusions and Sprains of the Back.**—Shufflebotham discusses the anatomy of the back, and shows that such injuries may cause lesions of the muscles or the articulations, of which there are many, or of both. Bright's disease, diabetes, muscular rheumatism, arthritis deformans, and other diseases may be exaggerated by such injury. Lumbago is a common sequel, and locomotor ataxia has come on in a syphilitic subject soon after an injury to the back. The trauma may even be the exciting cause of diabetes, and when the sugar appears late it may be dangerous and rapidly fatal. Hematuria and albuminuria may also follow this form of injury. Neurasthenia is a very common sequel. In view of the possible ill results of an injury to the back, the treatment must be of the best and instituted at once. Rest for one or two days is essential, and it is to be followed by expert massage under the guidance of the physician, and by passive movements. As soon as possible, systematic exercises are to be begun, they should be simple, but should efficiently develop the tone of the damaged muscles and prevent the development

of articular stiffness. The results are good if such measures are carried out at once and adequately.

2. **Epithelial Grafting after Mastoid Operation.**—Ballance holds that the advantages to be gained by grafting the mastoid cavity are: 1. Rapid healing of the entire wound. 2. Immediate protection of the raw bone surface by a layer of living epithelium, and in consequence, elimination of the pain and discomfort incidental to tamponing and of the danger of reinfection of the bone. 3. Considerable shortening of the time during which specially skilled attendance is needed. Two weeks after the grafting operation the bone granulations are all covered by visible living epithelium. 4. Improvement in hearing. The fenestræ become covered by the thinnest possible layer of tissue, consequently the hearing is generally very good, certainly much better than when granulation has long been present over the fenestræ. He grafts about one week after the operation. During that week the skin over the mastoid wound has been closed, and the cavity has been irrigated twice daily through the meatus with a mild antiseptic.

4. **Demonstration of *Bacillus coli*.**—Purvis adds one gramme of sodium salicylate to 100 c. c. of double strength nutrient broth (+10 Eyre), and puts from one to twenty-five c. c. into tubes of varying size. These are then sterilized in the usual way. The suspected water is then added to the tubes, a quantity equal to the amount of medium in the tube being used. The tubes are then incubated for twenty-four to fifty-eight hours at 42° C. If turbidity of the broth has developed, one may suspect *Bacillus coli* and its identity will have to be proved by the usual microscopical and biochemical tests. The only bacillus which is likely to grow along with the colon bacillus in this method is the subtilis; this can be removed from the other by plating. Purvis has also found that if one per cent. of sodium salicylate is added to a solid medium, such as agar, and the plate is exposed to the air and then incubated at a temperature of 37° C., no bacterial colonies will grow, but moulds and torulae that were present in the air will grow well.

5. **Etiology of Appendicitis.**—Poynton and Paine report a case of appendicitis in which there was inflammation of one of the tonsils. From the appendix fluid and from the tonsil they isolated the same organism, a streptodiplococcus. This organism induced arthritis in rabbits, and in one caused an acute appendicitis. In the appendix the diplococci were found in the mucous and submucous membranes, but were far more numerous in the serous membrane. The condition of the human appendix was a counterpart of that found in that of the rabbit. This seems to prove almost conclusively that a cause of appendicitis may be a streptococcal invasion through the blood stream from a follicular tonsillitis.

BULLETIN DE L'ACADÉMIE DE MÉDECINE.

July 25, 1912.

1. G. MARINESCO and J. MINES: Phenomena of Nerve Growth and Degeneration *in vitro*.
2. VIDAL and WEISSENBACH: Panmeningococcal Meningitis, Treated and Cured with Antipneumococcal Serum; Inefficacy of Antimeningococcal Serum.
3. MIGNAN: Chloroform in Central Receiving Hospital for Insane in Paris.

2. **Parameinogococcic Meningitis.**—Widal and Weissenbach report a case presenting symptoms typical of the ordinary meningococcic meningitis, but in which three injections of large amounts of antimeningococcic serum caused no improvement. The organisms isolated from the case were found inagglutinable by this serum. Antiparameinogococcic serum prepared by Dopter was then administered, with prompt benefit and ultimate recovery. Cases heretofore not benefited by antimeningococcic serum have probably often been due to the parameinogococcus.

3. **Clinotherapy.**—Magnan points out the advantages of merely placing excited alcoholic patients, maniacs, and melancholics in bed, without restraint, over the use of the straight jacket, which by exerting pressure on the thorax as the patient struggles, interferes with respiration, and may even produce death in cases of delirium tremens.

JOURNAL DE MÉDECINE DE PARIS.

August 10, 1912.

1. SAVARIAUD: Chloroform in the Child.
2. ALEXANDRE GULDENLOU: Urinary Disorders of Obstetrical Origin.
3. ALPHONSE HUGUET: Pyrorectomy for Chronic Juxtanglelic Ulcer.
4. L. LUCVILLE: Superiority of Stereoradiography to Simple Radiography in Medicine and Surgery.

1. **Chloroform in the Child.**—Savariaud states that only practice will make an expert anesthetist for children. The drop method is best, and the dose should be gradually diminished as insensibility begins. Color and rate of respiration are the indices of safety. The tongue is liable to fall into the pharynx. In case of collapse, artificial respiration is demanded, rhythmic traction of the tongue not being sufficient.

2. **Urinary Disorders of Obstetrical Origin.**—Guldjoglou points out that pregnancy causes changes in the form and position of the urethra, lengthening and flattening it, and causing it to be pressed against the symphysis pubis, with the frequent result of causing edema of the meatus. Slight retroversion aggravates these conditions. Paralysis of the urethral fibres may result and, during the second half of pregnancy, bring about incontinence, with its disagreeable excoriation of the thighs, etc. An abdominal bandage will help to prevent such complications.

PARIS MÉDICAL

August 3, 1912.

1. DOPTER: Infectious Diseases and Hygiene in 1912.
2. AYMARD: Anthrax Therapeutics.
3. LAFORGE: Pharyngococcic Meningitis.
4. RAYMOND: Pancreatitis from Mumps.
5. DERRÉ and PARVÉ: Antigen in Diagnosis of Renal Tuberculosis.
6. GIBALL and HORNES: Antilyseric Serum in Bacilla Dysenteria.
7. DOPFER and ROUGELETTE: Purification of Drinking Water by Oxochlorides.
8. R. CRUCHET: Practical Diagnosis of Hysteria in Child.
9. M. CHIRVY and M. MICHULSKY: Petriogical Internation by drathrosis.
10. M. MARX: Prostatic Hypertrophy.

4. **Pancreatitis from Mumps.**—Raymond says that pain, aggravated by pressure, is the most noteworthy symptom of pancreatic involvement in mumps; tenderness in the region may persist after other symptoms have disappeared. Constipation, followed by a colliquative diarrhea, is common. Fever, epistaxis, profuse sweating, irregular pulse,

and the facies of gripe are also noted. Jaundice may supervene. The diagnosis, in view of the very obvious mumps, is therefore not difficult. The prognosis is very favorable. Pain may be met with mustard plasters, hot applications, ice, and morphine. Liquid diet and ice control the vomiting. Purgatives are less useful than enemata for the initial constipation.

8. **Hysteria in Children.**—Cruchet states that, eliminating simple suggestion, imitation, and, above all, simulation, hysteria is rare in the child, particularly before puberty, much rarer than has been thought. Babinski's definition of hysteria, in limiting it to suggestion, is incomplete.

10. **Prostatic Hypertrophy.**—Marx points out that too many men are made prematurely old by prostatectomy. Hypertrophy weakens erectile power and ejaculation, beside its well known dangers, but both the soft and hard forms are amenable to prophylactic measures. The soft hypertrophy may be combated by bleeding, hot sitz baths, the use of suppositories of adrenalin, hamamelis, and cocaine, gentle chologogues, milk and vegetable diet, absence of constriction about the waist. The hard prostatic tumor will be benefited by similar treatment; particularly useful in this form are frequent saline enemata and suppositories containing mercury and ichthyol. Massage is also useful, and perhaps the iodides internally. Walking is advised, also moderation in sexual intercourse. Spiced foods and drinks are prohibited in both forms of hypertrophy. Increased erectile power should follow this treatment. Many men are ignorant of an advanced hypertrophy. To avoid the catheter life, Marx advises patients with enlarged prostates to urinate three or four times daily while on all fours; this procedure, according to him, completely empties the bladder.

PRESSE MÉDICALE.

August 3, 1912.

1. FERRAND BEZANÇON: Etiological Value of Diminution of Vision in Unborn Limited to Apex.
2. EMIL SERGENT: Chronic Mediastinitis in Relation to Tuberculosis.

August 7, 1912.

1. KIRMISSE: Osseous Traumatism in Child.
2. H. ROGER and BAUME: Endothorachian Therapeutics in Gas-troic Crises of Tabes.

August 10, 1912.

1. LOUIS RÉNON: Present Status of Tuberculinotherapy.
2. P. ALLIAGE: Screws in Closed Fractures of Olecranon.
3. H. CHAMBERIER and E. CHAMBERIER: Decolorizing Agents after Use of Tincture of Iodine.

1. **Significance of Limited Murmur at Apex.**—Bezancón states that limitation of murmur at the apex, in the absence of any nasal obstruction, is significant in the child, probably of some mediastinal adenopathy, but perhaps of a pulmonary sclerosis from an early infection; in the adult, the limitation means sclerosis of pleura or of the parenchyma of the lung, usually accompanied by some degree of emphysema. Within such a sclerotic mass may be a pus focus, sclerosis not always meaning a healed tuberculous lesion, but frequently one in full activity. If no active tuberculosis is found on careful examination, there is likely a latent form.

2. **Mediastinitis.**—Sergent avers that a chronic mediastinitis is always a sign of either tuberculosis or syphilis.

4. Endorrhachidian Injections in Tabetic Crises.—Roger and Baumel have tried many substances applied by spinal injection, and have found solution of magnesium sulphate efficacious in controlling tabetic pain. Such injections, they state, produce a true "leucocytic shower" and a sort of therapeutic meningitis which favors the resorption of meningitic products. This resorption may cause the cessation of pain rather than the anesthetic effect of the cocaine or novocain sometimes used.

7. Decolorizing the Iodine Stain.—The Chabniers state that decolorization is important, not only for the sake of the operator, but because the tincture of iodine, after being allowed to remain in contact for a few minutes with the site of operation, may be rendered colorless without prejudice to its antisepticizing properties. Sodium hyposulphite is the decolorizing agent preferred, made with sterile warm water in ten per cent. strength. Another important point is that if the operator violates his aseptic technique, he may restore a sepsis by immersion of the hands in tincture of iodine mixed with an equal part of alcohol, and a subsequent dipping in the hyposulphite solution. The hands are then both surgically and esthetically clean.

CORRESPONDENZ-BLATT FÜR SCHWEIZER AERZTE

July 1, 1912.

1. Theodore Langhaus.
2. ALFRED HÜSSY: Sun and Free Air Treatment of Surgical Tuberculosis.
3. C. WIEDER: Epidemic Occurrence of Purulent Processes.
July 10, 1912.
4. HANS ISLIN: Conservative Treatment of Glandular Tuberculosis.
5. P. WOLFFER: Hematomyelia and Syringomyelia after Trauma.
July 20, 1912.
6. H. KOLLER: Nursing and Invalidity to Nurses.
7. C. O. GELPKE: Disappearance of Cholera Epidemic after Severe Thundershower.

2. Sun and Free Air Treatment of Surgical Tuberculosis.—Hüssy observes that surgical tuberculosis, that is tuberculosis which we have treated by operations, should be viewed from the same standpoint as phthisis, when we will get better results. The patient suffering from joint or bone tuberculosis should be sent to sanatoria situated in high mountainous regions, where there is plenty of sunlight and where climatic conditions are much better than in low countries. To make this possible the number of such sanatoria situated in greater altitudes should be increased and either be founded or assisted by the government.

4. Conservative Treatment of Glandular Tuberculosis.—Islin speaks of the rôle which the tonsils play as portals to the body for the tubercle bacilli. The tonsil itself seldom retains the bacilli, and primary amygdalar tuberculosis is very rare if the tonsil is normal, while in hypertrophied tonsils tuberculosis appears quite often. In a normal condition the bacillus of tuberculosis will be destroyed in the tonsil, although the author remarks that often the bacilli will enter the body. He takes the view that the tonsils should be considered as a defensive wall against the attacks from tuberculosis, and he is therefore opposed to extirpation of normal tonsils. If these tonsils are to be treated we should use Röntgen rays, which treatment has been very successful.

7. Disappearance of Cholera after a Severe Thundershower.—See editorial article, page 440.

PRAGER MEDIZINISCHE WOCHENSCHRIFT.

July 4, 1912.

1. OTTO PIFEL: Chronic Inflammation of Glands of Palate and Treatment.
2. F. HÖCKE: So Called Respiration Action of Heart.
3. MAX PERLESS: Massage of Uterus.
4. FRIEDERICH KANNIGISSE: Was Napoleon Epileptic?
July 11, 1912.
5. FRANZ VON FINK: Treatment of Ulcer of Stomach.
6. AD. HALL URBAN: Oldest History Written by Physician of Mining City and Spa St. Joachimsthal.
July 18, 1912.
7. FRANZ ERBEN: Excretion of Oxyprotein Acid and Aminoacid in Urine of Normal and Sick People.
July 25, 1912.
8. GUSEVA WAWOR: Twenty Years of Obstetrics in Country (To be continued).
9. THUREN HOLSTROM: Leithetia and Phlegmonous Angina.

5. Treatment of Ulcer of the Stomach.—Von Fink, collecting the opinions of continental European surgeons, remarks that operation is indicated in ulcer of the stomach in the following cases: 1. Sudden, severe hemorrhages from the stomach, when it is possible exactly to locate the seat of the ulcer without endangering the condition of the patient through too much handling of the stomach; 2, in oft repeated, although not severe hemorrhages, where the patient becomes anemic from the loss of blood, as well as from the impossibility to take enough nourishment, as these patients are in danger of a sudden, severe bleeding attack and perforation; 3, in acute perforation, when the prognosis depends upon the early recognition of the condition and operation; 4, if the seat of the ulcer is near the pylorus with following stenosis, stasis, and decomposition of the stomach contents, and derangement of the stomach mechanism; 5, if the ulcer is situated in the centre of the stomach wall; and, 6, in patients who on account of the ulcer suffer from subjective signs, such as pain, disturbance of digestion and function of the stomach, vomiting, anemia, with subsequent melancholia, impossibility to work, general nervous breakdown.

ZENTRALBLATT FÜR CHIRURGIE.

August 10, 1912.

1. G. SULTAN: Diagonal Suture.
2. E. SELKE: Subcutaneous Rupture of Triceps Surae.

ZENTRALBLATT FÜR GYNÄKOLOGIE.

July 20, 1912.

1. W. MÖLLER: Is Double Ligature of Umbilical Cord Necessary or Advantageous?
2. WEISSWANGE: Reform of Midwife System.
3. F. HOLZ: Technique of Uterus Tampon.
July 27, 1912.
4. P. ZWEIFEL: New Instrument for Perforation.
5. J. KRECH: Uterine Manipulation by "Dublin" Method in Third Stage of Labor.
6. P. KNAPP: Miniature Obstetrical Phantoms.
7. W. LINDEMANN and E. NOACK: Transference of Bacteria from Vaginal Canal to Newborn and Indirectly to Mother.
8. KRETZ: Differentiation of Syncytium from Placental Cells.
9. MAX HESSE: Campaign against Criminal Abortion.

2. The Reform of the Midwife System.—Weisswange, in referring to the German midwives, calls attention to the fact that at the end of from six to nine months they are supposed to be competent to conduct a birth in an aseptic manner. In Japan and Turkey a two years' course is required, and in Russia a one or two years' course may be taken. The midwife should not be allowed to practise till the understanding of a sepsis and antiseptics has been thoroughly instilled. If objection is made on the ground that the remuneration is insufficient, it is a matter for the state to take up and see that proper returns are provided. Until some such move

is made nothing need be expected from severe rules and regulations.

5. **Uterine Manipulation in the Third Stage of Labor.**—Reich mentions four ways by which the uterus may be emptied of its contents, the French method, in which the cord was pulled on; Credé's method of immediate expression; Ahlfeld's expectant method, and the English or Dublin method. In this last the uterus is stimulated by the pressure of the hand passively resting upon it. The author calls attention to the advantages of this last method in that there is avoided the relaxation that frequently occurs after active contractions of the uterine muscle.

7. **Infection of the Mother by the Newborn.**—Lindemann and Noack report several cases of infection in the mother, where similar organisms were found in the mouth of the newborn and in the maternal birth canal.

AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

August, 1912.

1. E. WERTHEIM and H. GRAY: Extended Abdominal Operation for Carcinoma Uteri.
2. F. W. RICE: Management of Occiput Posterior Positions.
3. H. J. KREUZBACH: Reflections after Twenty-five Years' Practice in Obstetrics.
4. I. R. BROMWELL: Menstruation, Normal and Abnormal.
5. W. J. FRICK and G. C. MOSHER: Pregnancy in Uterus bicornis.
6. H. HEIMAN: Treatment of Summer Diarrheas.
7. J. VAN ALLEN MANNING: Treatment of Acute Stage of Polymyelitis before Appearance of Paralysis.

1. **The Extended Abdominal Operation for Carcinoma Uteri.**—Wertheim's article, translated by Grad, occupies some sixty pages; being based on the observation of five hundred operative cases and being the word of one of the masters of the profession it necessarily commands attention. Much stress is laid upon the technique of the operation, careful asepsis, rapid completion of the operation, a minimum loss of blood, careful handling of the organs to be liberated, and the consideration of the heart in reference to the narcosis; all these points being of great moment in an individual already reduced in strength by the disease. The various steps of the operation are fully discussed, and six full page plates graphically present the procedure. The indications for the operation are not given in great detail, but are briefly reviewed. Under the caption of operative mortality several tables are given which explain the cause of the cases of death, whether directly due to the operation or not. In this list peritonitis stands first with thirty-nine deaths. In nineteen of these the source of the infection was determined. When the figures are compared, it is seen that the mortality, at first very high, has gradually diminished, from thirty deaths in the first 100 operations, to nine in the fourth, and fifteen in the fifth. The recurrences of cancer are given considerable space. Among the cases operated in that remained under observation for at least five years, amounting to 250, recurrences were found in seventy-eight cases. The author makes an interesting statement, and one not generally appreciated, when he says that it has become a firm conviction that it is seldom possible to save younger people from the ravages of cancer. It is well known that young animals are more readily inoculable in experimental cancer research than are the adult. The late results and absolute accomplish-

ments are given. A comparison is made between the extended abdominal operation and the vaginal. There then follows a presentation of the reasons for the superiority of the abdominal method. Some three pages of conclusions complete the article. Reference is again made to the necessity of obtaining the cases at an earlier date; that until that is done the percentages cannot be bettered.

6. **The Treatment of Summer Diarrheas.**—Heiman reports the results obtained in treating the patients suffering from summer diarrhea with albumin milk according to Finkelstein and Meyer. This is prepared as follows: A tablespoonful of essence of rennet (or two tablets of rennet) is added to one litre of milk, which is then placed in a water bath at 42° C. for one half hour. It is then filtered slowly by gravity without any pressure for about an hour, through cheese cloth. The coagulum is then washed twice in half a litre of water through a very fine sieve and forced through by means of a wooden club. Then half a litre of buttermilk is added. This mixture was given for from two to fourteen days, in quantities corresponding to the usual feeding mixtures prescribed for the respective age. In the series of forty-two cases, twenty of which belonged to a very severe type of the disease, there were nine deaths, a mortality of twenty-one per cent. Excluding four of the cases in which the children were practically moribund when admitted, there were five deaths, a mortality of thirteen per cent. The special for this mixture is found in those cases in which marked emaciation has taken place, as a result of prolonged withdrawal of food.

7. **Treatment of the Acute Stage of Poliomyelitis.**—Manning calls attention to the great importance of treatment of the early stage of poliomyelitis. That it should not be delayed during the stage of invasion while the diagnosis is yet doubtful, for the diagnosis of this disease in many instances is not made, or made but tentatively, until the oncoming of paralysis. The brief hours which intervene between the onset of poliomyelitis and the appearance of paralysis constitute the physician's only opportunity for preventing disability or death. Information is requested by the author concerning the following points relating to acute cases of epidemic poliomyelitis during the season of 1912: 1, Contact of cases with old cases of poliomyelitis; 2, contact with sick animals; 3, antecedent insect bites; 4, coincident presence of bed bugs (address 151 Lafayette Avenue, Brooklyn, New York).

AMERICAN JOURNAL OF SURGERY.

June, 1912.

1. WILLY MENYER: Operative Treatment of Intestinal Colic.
2. WALTER M. BRECKEN: Stomach and Pancreas Shaking.
3. CHARLES M. DODD: Some Preliminary Notes on Deep Lung Abscess and Inflammation.
4. ROBERT T. MCGEE: Necrotic Hematoma of Abdominal Surgery.
5. EDNA F. REIMANN: Intraperitoneal Inflammation of Breast.
6. JAMES P. TOUGER: Carcinos and Carcinoma of Mesenteric Relation to Rectal Disease.
7. JAMES P. WARDER: When Shall We Operate on Simple Fractures of Long Bones?
8. LEWIS S. PRINGLE and PAUL M. PRINGLE: Successful Two-Stage Operation for Removal of a Desmoplastic Pancreas.
9. HOWARD LILLIAN: A Case of Perforating Duodenal Ulcer.
10. EDWARD L. KINGS: New Method of Treating Lung Pouch.
11. WILLIAM S. GUTHRIE: Ulcers of Colon and Their Extracolonic Changes in the Peritoneum.
12. H. J. BOYCE: Treatment of Bleeding from Genital Organs of Woman.
13. JOHN LUSKIN: Pelvic and Peritoneal Infections.

14. CHARLES H. MAY. Removal of Foreign Bodies from Cornea and Conjunctiva.
15. WILLIAM MURRAY DUNSTON. Surgical Anatomy of Temporal Bone.

1. **Operative Treatment of Cardiospasm.**—Meyer remarks that while the average case of cardiospasm will yield to mechanical stretching of the cardia, some cases will not. Either the spasm will return in spite of repeated division, or, in cases which the author designates as "intractable," even if division is successfully accomplished, the result will nevertheless be unsatisfactory on account of the formation of a pouch of the esophagus above the diaphragm. In such cases two types of operative procedure are available: 1. Esophagoplication and vagotomy with the aid of thoracotomy, without attacking the cardia itself; and, 2, cardioplasty. The first of these operations, consisting in the formation and suture of longitudinal folds of the esophageal pouch and the thorough separation of the pneumogastric nerves from the esophagus, was performed in two cases, with the result that cardiospasm ceased. Which of the two steps in the procedure was the essential one for cure can be decided only by performing them separately in other cases. Cardioplasty, done either from below, by way of the peritoneal cavity, or from above, through the thorax, has been accomplished only once in a human being, by Wendel, who proceeded by the abdominal route and adopted the technique of pyloroplasty by the Heineke-Mikulicz method. The diathoracic route, as yet unused in human surgery, was availed of by Meyer in experimental work on four dogs, with successful results.

2. **Shoulder Disability.**—Brickner discusses cases of stiffness and pain of the shoulder, developing either after trauma—even by comparatively slight and by indirect violence—or without any antecedent trauma. Pain is greatest, as a rule, in the acromial and deltoid regions, but may radiate down the arm and into the forearm. Points of tenderness, the intensity of which varies according to the acuteness of the process, are usually present. The most prominent symptom, however, is limitation of abduction. Brickner is convinced that Codman is right in describing subacromial bursitis as a frequent cause of the condition. The marked tenderness on pressure against the inner or axillary aspect of the arm, which the author noted in cases undoubtedly of this type, is surmised by him, in view of cadaver dissections, to have been due to sensitiveness in the irritated circumflex nerve. Certain cases witnessed led Brickner also to suggest that there may be also a form of mild, recurrent, subacromial bursitis, relieved by aspirin and perhaps rheumatic in origin. Concluding, he states that in cases of shoulder disability one should exclude *bona fide* brachial neuritis, intraarticular lesions (including luxations), fracture of the humerus, acromion, scapula, or even the clavicle, and a gross or developing lesion in the head of the humerus (gumma, tuberculosis, neoplasm). All these being excluded, one may look for a bursitis, an injury to the supraspinatus tendon, perhaps involving the bursa or the greater tuberosity, or a fracture of the tuberosity itself. If physical signs and skiagraph show none of these, the condition may have arisen from a spontaneously reduced shoulder dis-

location or a slight tear of the joint capsule through a sprain.

8. **Suprapubic Two Step Prostatectomy.**—Pilcher and Pilcher consider the suprapubic operation in two steps to be the procedure of choice: 1. In all cases of prostatic dysuria, with much residual urine, in which a catheter cannot be introduced; 2, in all cases with much residual urine where a permanent catheter is not well borne or causes fever or does not properly empty the bladder; 3, in all advanced cases in which the patient is much debilitated, or is suffering from constitutional symptoms dependent upon the disease, or in the presence of advanced arteriosclerosis and greatly increased blood pressure. Describing the operative technique, the authors advise, in the first stage of the intervention, that the drainage tube inserted high up on the anterior surface of the bladder be held there by two stay sutures of No. 2 catgut, closing entirely the bladder wall around the tube. This insures a dry wound after the operation.

10. **Extirpation of Penis.**—Keyes, in view of, the dangers of hemorrhage from the corpora cavernosa when these are divided in the technique commonly employed, advises, 1, the addition of an inverted V perineal incision, which exposes the perineal structures much more satisfactorily than the median incision; 2, freeing the bulbous urethra from the corpora cavernosa and then attacking these, not from before backward, but from behind forward. In so doing one comes upon the arteries of the corpora cavernosa where they may be readily divided and ligated before they enter these bodies. Close to these, the dorsal vessels are easily exposed and ligated.

11. **Three Genital and Four Extragenital Chancres in One Patient.**—Gottheil reports a case the practical interest of which rests in the fact that, for four or five weeks after the implantation of the syphilitic virus, the patient did not suffer from a general infection to the extent of being insusceptible to a fresh inoculation. Excision of the chancre in cases seen reasonably early deserves a trial, especially in instances where the lesion is so situated that the operation is a trivial one.

JOURNAL OF EXPERIMENTAL MEDICINE

August, 1912.

1. H. A. STEWART and S. C. HARVEY. Vasodilator and Vasoconstrictor Properties of Blood Serum and Plasma.
2. MARTHA WOLFE and S. L. MELTZER. Experimental Bronchopneumonia by Endotracheal Insufflation.
3. R. L. DIXON. Observations of Thoracic Duct Lymph after Injection of Oil of Turpentine into Peritoneal Cavity of the Dog.
4. I. LEVINE. Changes in Tissue Surrounding Growing Tumor and Significance of the "Precancerous State."
5. I. LEVINE. Tumor Inoculation into Organs and Analogy between Human Cancer and Tumors of White Mice and White Rats.
6. ALVIN CARPENT. Pure Cultures of Cells.
7. R. ISOBELLS. Influence of Isoascorbithins on Final Results of Homoplasmic Transplantations of Arteries.
8. J. H. KING, R. D. MOYLE, and W. C. HARVEY. Glycosuria Following Anesthesia Produced by Intravenous Injection of Ether.
9. H. KOSCHETZ. *Trepsema mucronum* (New Species), a Mucin Producing Spirochete from *Pyothrix alveolaris*, Grown in Pure Culture.
10. H. KOSCHETZ. Pure Cultivation of *Spirocheta Duttoni*, *Spirocheta Kochi*, *Spirocheta Obermeyer*, and *Spirocheta Naxii*.
11. H. KOSCHETZ. Method for Cultivating *Trepsema pallidum* in Fluid Media.
12. PAUL A. LEWIS. Preventive Action of Diphtheria Antitoxine in Serum Sensitized Rabbits.
13. J. W. CHURCHMAN. Selective Bactericidal Action of Gentian Violet.

1. **Properties of Blood Serum and Plasma.**—Stewart and Harvey undertook a systematic study of the vasoconstrictor action of the serum in Addi-

son's disease, and began by establishing a standard in normal serum. It had been previously shown by O'Connor that there was a constrictor substance not present in an active form in plasma, but one liberated during the process of coagulation. They found that in plasma there exists a vasodilator substance specific for the vessels of the kidney. This substance is a proteid of the albumin class and is precipitated by boiling and by alcohol. It is present also in the serum and acts directly on the muscle coats of the arteries. The process of clotting of the blood liberates a constrictor substance that acts on the renal vessels and also on the vessels of the limb. This constrictor substance is not a proteid; it resists boiling, is soluble in alcohol, and acts directly on the muscle coat.

2. **Experimental Bronchopneumonia.**—Wollstein and Meltzer call attention to recent experiments in which one of them (Meltzer) had succeeded in producing in forty-two out of forty-four dogs, lobar pneumonia with pure cultures of the pneumococcus. The favorable outcome of these experiments suggested the advisability of applying the same method to the action of organisms usually found in association with bronchopneumonia. The organisms used in the series of endobronchial insufflations were the streptococcus and the influenza bacillus. Of the twenty animals experimented upon one died within twenty-four hours. The other nineteen dogs were killed at intervals varying from twenty hours to six days. All had typical pneumonic lesions in various stages of progression and resolution, depending upon the time elapsing between the injection and the killing of the animal. These lesions contained the streptococcus in pure culture. With the influenza bacillus, eleven dogs were experimented upon, and in them there were produced without fail, pneumonic changes. These lesions were similar in their nature to the ones known in human pathology as bronchopneumonia, and differed materially from the pneumonic lesions produced experimentally by the endobronchial insufflation of pure cultures of the pneumococcus.

6. **Pure Cultures of Cells.**—Carrell shows that it is possible from old cultures of tissues growing *in vitro* to isolate and propagate cells that belong to a definite type. A tissue, formed by a pure strain of cells, can be obtained in this way.

9. **Treponema mucosum Obtained from Pyorrhoea alveolaris.**—Noguchi has succeeded in obtaining from a case of pyorrhoea alveolaris a pure culture of a spirochete which has the power to form mucin and produce a strong fetid odor that is quite characteristic of that condition of the teeth.

10. **Pure Cultivation of Spirochetes.**—Noguchi describes a method by means of which he is able to obtain pure cultures of the four distinct species of spirochetes that are responsible for the diseases known as relapsing fever. They are *Spirocheta Obermeieri*, *Spirocheta Duttoni*, *Spirocheta Kochi*, and *Spirocheta Noveyi*. *In vitro* these stains reach their maximum growth after seven, eight, or nine days at 37° C. No growth was obtained at room temperature.

11. **Method for Cultivating Treponema pallidum in Fluid Media.**—Noguchi describes in detail a simplified method for obtaining pure cultures

of *Treponema pallidum* and allied species of spirochetes in fluid media. As the organism is an obligatory anaerobe, requiring the presence of a fresh sterile tissue in culture, many technical difficulties interfere. By this new method the entire process of cultivation is carried on without the aid of a sealed jar, vacuum, or pyrogallol.

JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS.

JULY, 1902.

1. J. D. PILCHER: Action of Caffeine on Mammalian Heart.
2. ISAM. OTT and JOHN C. SCOTT: Action of Glandular Extracts upon Amount of Epinephrine in Blood.
3. T. BICKELFORD ROBERTSON and FREDERICK C. BURNETT: Action of Sodium Citrate upon Mammalia, with Especial Reference to Acquired Tolerance and to Its Action upon Cerebellum.
4. LAFAVETTE B. MERRILL, THOMAS P. USKOFF, and R. R. ROSS: Action of Salts of Cobalt on Arterial Blood Pressure.

1. **Action of Caffeine on Mammalian Heart.**—Pilcher found in experiments upon the exposed heart of dogs that, upon intravenous injection of a total quantity of caffeine not exceeding 20 mg. for each kilogramme of animal, there occurs a moderate rise in blood pressure, an increased heart rate and a decrease in heart volume (increased cardiac "tone"); there may or may not be an increase in the amplitude of the cardiac excursions. With larger doses, the blood pressure progressively falls, the cardiac rate and volume increase, and the amplitude of the excursions decreases. Rapid intravenous injections of caffeine cause a temporary fall of blood pressure, usually followed, with small doses, by a slight rise.

2. **Glandular Extracts and Epinephrine in Blood.**—Ott and Scott found that intravenous injection in cats of thyroid extract, iodothyrene, parathyroid, thymus, pituitary, pineal, pancreatic, ovarian, and orchitic extracts, as well as of the anti-thyroid serum of Moebius, diphtheria antitoxine, egg albumin, peptones, and the albumin of muscle and liver extracts, caused the fall of tonus in contracting strips of intestinal muscle typical of the action of epinephrine, as well as the temporary inhibition of the rhythmic contractions. While it is evident, in view of the result obtained with egg albumin, etc., that foreign albumins increase the amount of epinephrine in the blood, the glandular extracts used were free of albumin in so far as Heller's ring test indicates. Iodothyrene and the pituitary preparation used—intundihline—being admittedly free of albumin, it can be inferred that they stimulate the adrenals to increased activity. As to the other extracts, one cannot state whether the increase of epinephrine in the blood is due to a hormone or to some protein.

3. **Action of Sodium Citrate.**—Robertson and Burnett discovered that when rabbits are given repeated and gradually increasing doses of sodium citrate, they acquire so pronounced a degree of tolerance for the drug that doses normally causing very severe intoxication have little or no effect. This is to be regarded as essentially a tolerance to deprivation of tissue calcium. The cerebellar cortex, while not affected by direct application of sodium citrate to its surface, yields a profound convulsive reaction when the drug is applied by injection to the underlying white matter. With certain exceptions, the symptoms of acute citrate intoxication in rabbits, following the subcutaneous administration of large doses, are attributable to direct

cerebellar excitation by the drug. Of the various parts of the central nervous system, the cerebellum is the one which is most sensitive to the excitant action of deprivation of calcium.

4. Choline Salts and Blood Pressure.—Mendel, Underhill, and Renshaw, using exceptionally pure choline salts, never failed to observe the characteristic transitory fall of blood pressure ascribed to choline, and believe that the view of Popielski and his pupils, that the fall of pressure is due to impurities in the choline, is not tenable. It seems very doubtful if properly prepared and preserved choline salts readily decompose.

MEDICAL REVIEW OF REVIEWS.

August, 1912.

1. B. E. MCKENZIE: Physical and Mental Training in the Treatment of Nervous Diseases.
2. THOMAS D. WOOD: Teaching Hygiene for Better Parenthood.
3. ALFRED C. REED: Scientific Medical Inspection at Ellis Island.
4. CHARLES J. LACROIX: Importance of Early Recognition of Surgical Affections in Children.
5. VICTOR HABERMAN: Intelligence Tests.

DUBLIN JOURNAL OF MEDICAL SCIENCE.

July, 1912.

1. HENRY C. DRURY: Remote Effects of Syphilis.
2. J. O'CARROLL and F. C. PURSER: Meningitis Due to Bacillus Typhosus.
3. HENRY DELLETTI, BETHELL A. H. SLOMONS, and DAVID G. MADILL: Clinical Report of Rotunda Hospital for One Year, November 7, 1910, to October 31, 1911.

2. Meningitis Due to Bacillus Typhosus.

O'Carroll and Purser report a case which seems to have been from the post mortem findings one of primary meningitis caused by the typhoid bacillus, and not a meningitic complication of an ordinary case of typhoid fever.

GLASGOW MEDICAL JOURNAL.

August 1912.

1. A. W. RUSSELL: Chronic Ocular Pain in Case Finally Treated by Double Oophorectomy.
2. ALAN MACLENNAN: "Tunnel" Skin Grafting: New Method of Covering Raw Surfaces with Epithelium.
3. DONALD DUFF: Successful Removal of Large Retroperitoneal Sarcoma: Method and Treatment.
4. MILNE MCKILVER: Primary Carcinoma Arising from Bronchus in Tuberculous Lung.

2. Tunnel Skin Grafting.

MacLennan's method is to form a tunnel beneath the granulations and slip the graft into the tunnel, so that it lies in a cell imbedded in blood clot and protected from contact with the dressing.

JOURNAL OF MENTAL SCIENCE.

July, 1912.

1. R. DODS BROWN and DONALD ROSS: Production of Leucocytosis in Treatment of Mental Diseases.
2. T. W. McDOWALL and COLIN McDOWALL: Abnormal Development of Scalp.
3. GEORGE H. SAVAGE: Some Dreams and Their Significance.
4. ROBERT JONES: Varieties of Dementia, and Question of Dementia in Relation to Responsibility.
5. RICHARD EAGER: Therapeutic Value of Thyroid Feeding in Mental Diseases.
6. HUBERT J. NORMAN: Emanuel Swedenborg, Psychologist.
7. IAN MCKENZIE: Physical Basis of Mental Disease.

1. The Production of Leucocytosis in the

Treatment of Mental Diseases.—Brown and Ross describe their results in the treatment of nine cases of insanity by the artificial production of leucocytosis by the administration of nucleic acid and argentinum colloidal. These drugs were used hypodermically at intervals of from two to four days, and invariably caused a leucocytosis and some rise in temperature. The treatment was continued for three weeks and appeared to be beneficial in five of the cases, four of which were classified as delirious insanity, and one as melancholia. One case of each of these conditions, as well as one each of advanced

paresis and dementia præcox, were not improved. The authors review the work of other investigators along the same lines, much of which was even more favorable than their own, and are convinced that nucleic acid and metallic ferments present a means of stimulating the natural defences of the body against disease, the utility of which has been proved, and which might well be adopted in certain mental diseases.

5. Thyroid Feeding in Mental Diseases.

Eager has carefully watched the effects of thyroid feeding in forty-one cases of mental disease, and believes that in selected cases it is decidedly beneficial. Following the method of McPhail and Bruce, Eager administered sixty grains of thyroid extract daily, in three doses for two weeks, unless the pulse and temperature showed too great a reaction, when it was temporarily suspended. The patients were put to bed, and records were kept of pulse, temperature, urine, weight, etc. The final results obtained were thirty-four per cent. recovered, twelve per cent. improved, and the rest not benefited. The largest percentage of recoveries occurred in patients under thirty-five years of age. Of the effects produced by the treatment, increase in the pulse rate and rise in temperature were almost constant. Loss of weight was pronounced, the greatest amount being nineteen pounds in two weeks. Desquamation of the superficial layers of the skin appeared after the treatment was stopped. Urinalysis showed the effects of increased proteid metabolism. The author feels that the beneficial results are largely due to stimulation of some internal secretion, probably that of the organs of reproduction, since improvement is most marked during the period when these organs are normally most active.

6. Emanuel Swedenborg, Psychologist.

Norman presents to view certain facts concerning the work of Swedenborg which are not generally known; the usual opinion is that he was simply an exponent of mystical lore while as a matter of fact he was one of the most clear and able thinkers of his own, or indeed of any time. "Most of the discussions as to Swedenborg's place in the history of thought have centred round the latter period of his life; the mental trouble which came upon him in the midst of his scientific activities altered the whole course of his intellectual career." He discovered the animation of the brain. He published various works on anatomy, physiology, and psychology. He was one of the first in modern times definitely to trace nervous impulses through nerve fibres to the brain. In what may be called his psychological period he is distinctly to be ranked with the sensationists. Numerous passages are quoted from Swedenborg's works, illustrating keen insight and analytical thought in many problems of psychology. Later in life, he dreamed the dreams and saw the visions with which his name is now almost exclusively associated.

PRACTITIONER

August, 1912.

1. ARTHUR E. BARKER: Bone Grafting.
2. G. NEWTON PIER: Adherent Pericardium.
3. SYMOUR TAYLOR: More Serious Forms of Cardiac Valvular Diseases: 1. Aortic Regurgitation. 2. Mitral Stenosis.
4. P. T. POYNSTON: Some General Observations upon Heart Disease.
5. HUGH BABLER: Sudden Strains and Injuries of Heart.
6. RICHARD THORNTON: Treatment of Cardiac Cases by Nauheim Baths at Home.

7. T. BODLEY SCOTT: Some Clinical Aspects of Abnormal Arterial Tension.
8. R. TANNER HEWLETT: Review of Tropical Diseases.
9. CLAUDE B. KIRK: Review of Recent Literature on Typhoid Fever.
10. H. EWAN WALLER: Relationship of the Thyroid Gland to Other Internal Secretions of Sexual Origin.
11. GEORGE A. WOLFENDALE: Importance of Early Diagnosis and Treatment of Pulmonary Tuberculosis.

2. Adherent Pericardium.—Pitt reports several cases and discusses the condition at considerable length. He considers prophylactic treatment to be the most important, and says that much more might be done to prevent acute rheumatism in children from developing by keeping the nasopharynx in a healthy condition and insisting that they should be instructed at school in nasal breathing. The majority of cases owe their origin to mouth breathing, and are very often associated with adenoids; but too often, when the adenoids have been removed, no instructions have been given about the training necessary to prevent their recurrence. Acute pericarditis is the most grave cardiac lesion of childhood. All patients with rheumatism should be put to bed as soon as possible and, when acute pericarditis has developed, very prolonged rest in bed is necessary, when possible for at least six months, because if the heart work is reduced to a minimum the heart is less likely to dilate, the adhesions will be less extensive, more supple, and more likely to be absorbed than when the child is allowed to run about and take exercise. It is the toughening and intensifying of the adhesions, changes which take place very often from three to six months after the attack of acute pericarditis, which lead ultimately to the grave interference with the efficiency of the heart. It is a question to what extent the density of the adhesions can be controlled by drugs. Many give potassium iodide and mercury to aid the absorption of the fibrin in the pericardial sac and to allow as little connective tissue to form as possible. In the later stages fibrolysin has been used, but it is difficult to say whether it is of any great value. The subject of operative intervention by Brauer's operation of cardiolytic is discussed.

3. Aortic Regurgitation; Mitral Stenosis.—Taylor deals at length with the etiology, pathology, prognosis, and treatment of these conditions. In the treatment of aortic regurgitation he deprecates the use of digitalis, and says that after some experience he has come to the conclusion that a patient's chance of living is enhanced by avoiding too much meddling interference by baths or drugs. In mitral stenosis, on the contrary, he gives digitalis freely as the most powerful drug with which to supplement venesection which he considers the most valuable remedial treatment.

6. Nauheim Baths.—Thorne describes the method of giving the Nauheim baths to patients in their own homes, the details of which can hardly be condensed into an abstract. The conditions in which these baths can do little or no good are given as: 1. Valvular disease, in which the muscular walls are normal and there is no loss of compensation; 2, fibrotic conditions of the muscular walls pure and simple; 3, an extensive arteriosclerosis of the peripheral vessels. The most hopeless cases are those of general arteriosclerosis in heavy drinkers, in which it is possible that the baths may do harm.

PROCEEDINGS OF THE ROYAL SOCIETY OF MEDICINE.

June, 1912.

1. HENRI GÉRAUD and H. J. JOHNSTON-LAVIS: Gonococcus Empyema.
2. E. W. GOODALL: Hypersensitiveness.
3. WILLIAM HILL: Instruments to Facilitate Oral Tracheobronchoscopy.
4. WALTER EDMUNDS: Changes in Central Nervous System Resulting from Thyroparathyroidectomy.
5. A. W. RUSSELL: Extraperitoneal Cesarean Section.
6. WALTER C. SWANNE: Clinical Significance of Aclolysis in Pregnancy.

(Titles of the fifty-five other contributions in this periodical cannot be given because of space limitations.)

1. Gonococcic Empyema.—Géraud and Johnston-Lavis report a case of generalized gonococcal infection the evolution of which was divisible into five distinct periods, *viz.*, simple urethral gonorrhoea; renal infection, with anuria; general infection; localization as a pleurisy, and empyema. Notwithstanding prompt and apparently efficient incision of the pleura, the latter was not freely liberated of its purulent contents, owing to the formation of pockets by adhesions. After a period of high fever and steady loss of flesh and strength, drainage of the upper portion of the pleura was effected by the use of the urethroscope and a series of bougies, followed by the introduction of a rubber drain. Thereafter rapid improvement and complete recovery took place. A peculiar feature of the case was that while there was manifest concordance between the respiration and pulse rates, these rates almost always went down when the temperature rose.

2. Hypersensitiveness.—Goodall considers that the resemblance between serum sickness and an attack of an acute infectious disease, is more apparent than real; whereas after an acute infection the individual is immune to another attack, usually for a considerable period, the person who has undergone an attack of serum sickness often remains extremely sensitive to another injection of the protein which had caused the illness. Moreover, the rashes most commonly associated with serum sickness—urticaria and a variety of erythema multiforme, often erythema marginatum,—can hardly be said to be distinctive of any infectious disease. Much similarity, on the other hand, is apparent between the more severe attacks and the illnesses brought on by the ingestion of certain articles of diet, the bites of certain insects, and the inhalation of certain pollens, etc. When these illnesses are accompanied by a rash it is very frequently urticaria or a variety of multiform erythema.

3. Oral Tracheobronchoscopy.—Hill has invented a funnel shaped endoscope with a lateral slot, which not only permits of binocular vision and easy use of instruments in operations on the larynx, but also facilitates the rapid passage of a tracheoscope or bronchoscope in cases where there is dyspnea from laryngeal spasm or where it is desired to relieve at once, without resorting to tracheotomy, dyspnea occurring on administration of an anesthetic in cases of laryngeal and tracheal obstruction.

4. Changes in Central Nervous System after Thyroparathyroidectomy.—Edmunds found the percentage of calcium in the brain of a thyroparathyroidectomized dog to be one half the normal, and agrees with MacCallum and Voegtlin that removal of the parathyroids leads to a drain of calcium from the system. Marked changes in the spinal, medul-

lary, cerebellar, and cerebral cortical cells were found; many of the spinal and cerebral cells were nearly totally destroyed and quite beyond regeneration.

5. Extraperitoneal Cæsarean Section.—Russell practised in six cases a procedure the successive steps of which were Pfannenstiel's transverse crescentic incision just above the symphysis pubis, reflection of the flap from the recti muscles, separation of the muscles in the middle line, distention of the bladder with six to ten ounces of sterile saline solution, blunt dissection of the bladder from the anterior wall of the cervix (with gauze swab over finger), emptying of the bladder and its displacement aside to all, median longitudinal incision of the lower uterine segment, and extraction of the infant, either with forceps, by expression from above, or by pulling out a leg in case of a breech presentation. Russell concludes that the classical Cæsarean operation should be chosen for ordinary cases, and the extraperitoneal method reserved for cases advanced in labor.

6. Acidosis in Pregnancy.—Swayne, from the analysis of four cases of vomiting, six of albuminuria and five of eclampsia in association with pregnancy, concludes that the administration of chloroform to patients with acidosis or eclampsia should be avoided. An increasing acidosis should be looked upon as an additional indication for terminating pregnancy in cases either of albuminuria or severe vomiting, and to the ordinary treatment of these conditions should be added measures directed to the correction of the acidosis.

CANADIAN MEDICAL ASSOCIATION JOURNAL

August, 1912.

1. R. J. MAXWELL: Treatment of Fractures of Long Bones.
2. JOHN P. MORTON: Labyrinth Tests.
3. MALCOLM MACKAY: Pleurisy in Children.
4. W. B. KENDALL: Diet in Tuberculosis.
5. J. N. ROY: Revolver Bullet in Chiasm.
6. JOHN L. TOMP: Does Human Tick Borne Disease Exist in British Columbia?
7. G. STERLING RYERSON: Experiences with Radium.
8. E. P. BENOIT: Les Lésions articulaires de la goutte chronique démontrées par la radiographie.

1. Fractures of the Long Bones.—Manion says that the treatment of fractures has not advanced so rapidly as other branches of surgery, and, outside of the always progressing few, injuries of the bones are treated practically as they were a generation ago. He finds four methods of treatment recognized in different quarters at the present time: 1. Reduction with absolute immobilization in splints for some weeks; 2, reduction and immobilization in splints for a short time, with or without extension, with relatively early massage; 3, mobilization and massage, as advocated by Lucas-Champonnière; 4, open or operative treatment. Absolute immobilization until the bone is solidly healed has been and occasionally is carried to excess. Much of the injury is due to the traumatism of joints, muscles, and ligaments, and this injury is increased by this method of treatment. Immobilization in splints for a short time, with extension if necessary, and relatively early massage and motion of the joints is the ideal treatment for the general practitioner. The third method requires more care and much more time on the part of the surgeon. The very gentle massage increases the blood supply and exercises the muscles, while the mobilization or slight move-

ments of the joints in the neighborhood keeps them in good condition. The massage must always be painless, and the movements of the joints are slight. Splints are not altogether abandoned, but are discarded as soon as it is safe. The open treatment of all fractures, advocated by W. Arbuthnot Lane, the writer is not inclined to accept, although it is unquestionable that it is necessary in some.

4. Diet in Tuberculosis.—Kendall says that forced feeding is not essential in the treatment of pulmonary tuberculosis. Great gains in weight should not be sought, but an endeavor made to secure a gradual increase in the patient's weight up to a point slightly above normal. A lower protein content is better tolerated than the amount now usually given. The partaking of meals should be under close supervision, with rest before and after meals enforced. Constant attention must be given to the question of proper proportion of food elements. Cheerful and contented patients are more likely to be hearty eaters, and to progress favorably, than those who worry. Figs and milk are not indispensable in the dietetic management of tuberculous patients. Lunches should not be given between meals unless there is a special reason. It is a hardship to advise patients to procure food the price of which is almost prohibitive, when a diet of equal or greater nutritive value can be purchased for less money.

5. Revolver Bullet in the Chiasm.—Roy reports the case of a man who had been shot in the left temple a few hours before. The wound was three cm. from the outer canthus, two mm. below the horizontal meridian, and about four mm. in diameter. There was considerable palpebral edema and exophthalmos of the left eye, circumcorneal hemorrhage, and slight chemosis. The sensibility of the cornea, the anterior chamber, and the tension were normal; the pupil was dilated and did not react to light. A large chorioidoretinal hemorrhage could be seen with the ophthalmoscope, together with a hemorrhage into the vitreous. The color of the disc was normal, and the patient counted fingers at 20 cm. The right eye showed paralysis of the third nerve, ptosis, and dilatation of the pupil, which was immobile. There was no perception of light, although the optic nerve and all other parts of the eyeball were normal in appearance. The position of the bullet was located accurately, by means of the x rays, in the chiasm. The patient recovered; the hemorrhages in the left eye gradually cleared up, leaving some proliferating retinitis; the nasal half of the disc became pale, the temporal half slightly discolored, the pupil remained rather more dilated than normal and reacted slightly to light in an irregular manner, vision was hemianopic, fingers at 0.30 cm., color vision destroyed. In the right eye the optic nerve became totally atrophic, the pupil dilated and without reaction, the vision nil. The paralysis of the third nerve passed away entirely.

REVUE DE CHIRURGIE

June, 1912.

1. A. SCHWARTZ and G. KÜSS: Exposure of Musculospiral Nerve in Upper Arm; Operative Technique.
2. SOBEREYRAN and DESMONTS: Suprasternal Adenoplegmon.
3. R. TOUPET: Surgery of Hypophysis.
4. M. RACHLUSSE: Statistical Study of Extrauterine Pregnancy.

1. Exposure of Musculospiral Nerve.—Schwartz and Küss object to the classical incision

for exposure of this nerve in its course around the shaft of the humerus, viz., an incision extending from the root of the spine of the scapula along the posterior border of the deltoid muscle to the insertion of this muscle, on the ground that only a small portion of the nerve is exposed thereby, not enough to permit of conveniently suturing or freeing the nerve. Prolonging this incision above or below would be useless, as it would not follow the spiral course of the nerve, while the making of another incision in the external bicipital groove, to be joined to the original incision, involves the risk of severing important nerves or muscular masses. The authors advocate, instead, a median incision on the posterior aspect of the arm, beginning four fingerbreadths above the olecranon—with the forearm flexed to a right angle—and extending almost to the posterior edge of the deltoid. The brachial aponeurosis is then incised and reflected, exposing the V shaped tendon of the long head of the triceps and a quadrilateral tendon just external to it. The tendinous layer is incised between these two portions and the muscular fibres above are separated until the whole thickness of the triceps has been gone through. The musculospiral nerve is then seen in its groove, covered by a more or less transparent aponeurosis, which is incised. This technique was followed with great ease and success in two cases of paralysis due to injury or incarceration of the nerve in fracture of the humeral shaft.

2. Suprasternal Adenophlegmon.—Soubeyran and Desmonts discuss abscesses of the so called space of Grüber, a shallow cavity enclosed between fascial layers and extending upward from the sternum, between the sternocleidomastoid muscles, for five or six cm. On either side the space communicates by an opening of variable size with a cul-de-sac located behind the muscle. The membrane enclosing the space anteriorly, and probably also that behind it, are divisions of the superficial cervical fascia, to which is added posteriorly the intermediate cervical fascia. Within the space and the two lateral diverticula are located the anterior jugular veins, as well as in some cases lymphatic ganglia and vessels. The lymphatics are chiefly responsible for the abscesses sometimes occurring in the space, boils, abrasions, erysipelas, or skin inflammations in the infrahyoid region generally affording entrance to the infection. The posterior wall of the space being very strong, pus tends to advance in other directions; abscesses generally open through the skin in front of the sternum, though in some instances the pus penetrates the sheath of sternomastoid muscle. The diagnosis is readily made, in view of the definite limits of the inflammatory swelling. The treatment consists of incision as soon as the presence of pus is recognized. The skin is incised from a point two or three cm. above the manubrium sterni to one somewhat below its upper margin. The anterior fascial wall of the space is then cautiously opened with the scalpel, or better, a grooved director, and the pus evacuated. The aperture should then be enlarged and the walls of the lateral diverticula explored with the finger or curved forceps. If pus is detected in them the corresponding openings are enlarged to provide for its escape. Finally, drainage is established at the

lower end of the skin incision. The authors were able to collect reports of but nine cases of this variety of abscess in the literature, but believe that it is met with oftener than has been supposed.

3. Surgery of Hypophysis.—Toupet bases his observations on fifty-six cases of hypophysectomy. The two most important points determining success or failure in these operations are the absence or presence of extensions of the pituitary growth to neighboring endocranial structures and the relation of the sphenoidal sinus to the tumor. Where there are extensions to neighboring structures, viz., in 78.5 per cent. of the fourteen cases with autopsy, the condition is practically inoperable, as it is hardly possible even merely to ascertain the exact seat of such extensions, and even less to curette such structures as the cavernous sinus and third ventricle. As for the sphenoidal sinus, which varies greatly in size and in the thickness of its walls, Toupet advises the preliminary injection into it of bismuth paste, followed by an x ray-examination. Discussing the various routes of access to the pituitary, he points out the fallacy of the advantages claimed for the endocranial route, and lays most stress on the nasal and intranasal methods of exocranial access.

Proceedings of Societies.

AMERICAN GYNECOLOGICAL SOCIETY.

Thirty-seventh Annual Meeting, Held at Baltimore, Maryland, May 28, 29, and 30, 1912.

The President, Dr. HOWARD A. KELLY, of Baltimore, in the Chair.

(Concluded from page 461.)

Remote Results in Abdominal Hysterectomies for Cancer of the Uterus.—Dr. THOMAS S. CULLEN, of Baltimore, said he had performed in all over fifty Wertheim operations. He reported the result in forty-eight cases: immediate deaths, eleven cases; remote deaths at periods varying from a few months to five years, twenty cases; patients lost track of, five cases; patients living and well at periods varying from one to thirteen years, twelve cases.

Twenty-five of Doctor Cullen's cases had been operated in over five years with the following results: The mortality in the first twenty-five cases was seven, or twenty-eight per cent.; in the succeeding twenty-three cases, four, or eighteen per cent. With the early detection of cancer the mortality would naturally be lower. Immediate death, seven cases; not located, one case; remote death at periods varying from a few months to five years, eleven cases; living and well, six cases or twenty-four per cent.

In twenty-four per cent. of Doctor Cullen's cases operated in over five years ago the patients were living and well.

Dr. JOHN A. SAMUELSON, of Albany, in speaking of the end results (five year limit), stated that eight of the twenty-five patients of his were operated upon over five years ago. Two of these died as the result of the operation, and two died later from recurrence. Four were clinically free from cancer at

the present time; that is, four of eight patients operated upon and of six surviving the operation.

He had had the opportunity to obtain autopsies on five patients dying from recurrence. In three the immediate cause of death arose from the compression of the ureters by cancer extending from metastases in accessible iliac lymph nodes. In the fourth there was an extensive local recurrence in the field of operation from cancer not removed at operation. In the fifth there was an extensive local recurrence filling the pelvis and metastases to the lungs, heart, one kidney, and skin.

Dr. LEROY BROWN, of New York, said that gynecologists were not getting their cancer cases early enough. The proportion of operability was not as high as in foreign clinics. The proportion of immunity after five years was not as high as in foreign clinics, and the key to the situation was that operators did not get these patients early enough, and it was necessary to educate the laity in various communities. Personally, he had six cases to report, with one death. This patient died after a prolonged operation of some two hours and a half, and those who were alive were not to be included in the five year limit.

Dr. JOHN O. POLAK, of Brooklyn, New York, said he had been following the radical operation for about ten years, and that as far as any statistics he could get of his patients were concerned, he had not a single patient living on whom the radical operation was done. Against this he had four patients alive who were operated upon by the Byrne method, one having been operated upon nearly nineteen years ago, and one (the shortest period) having been operated upon eight years ago. These were all cases that he considered practically inoperable by any radical procedure, and that was the reason he adopted the method of Doctor Byrne.

Dr. SETH C. GORDON, of Portland, Maine, said that patients with the extremely advanced cases of cancer, no matter what was done for them, would die. If they did not die primarily, they died very soon afterward. The only hope lay in education of the laity and early removal of the disease. There was no question in his mind that the surgeon could cure cancer of the uterus just as he could cure cancer of the lip, but it must be seen and operated on early.

Dr. I. S. STONE, of Washington, D. C., believed that his patients lived many years longer after a radical operation than they otherwise would, and consequently he was encouraged to do radical operations. At the same time, he was not unmindful of the fact that the cautery method of Byrne in the delayed cases was far more desirable than any other method and yielded better results.

Dr. WILLIAM P. GRAVES, of Boston, had done the Wertheim operation for cancer of the cervix in eighteen cases, and this covered a period of a little over three years. Of his eighteen cases he had been able to follow all of them. Of the living patients he had seen all of them within four months. He had had a primary mortality of two, or eleven per cent.

Dr. HUGO EHRENFEST, of St. Louis, called attention to what he considered a fallacy in comparing the results of operations as they were found in the reports of German clinics with the results obtained

in America. Early diagnosis was the crucial point, and education of the public was the one factor which led to early diagnosis. Illiteracy was more prevalent in European countries than in America, and to feel that early diagnosis was entirely dependent upon the education of the public was wrong. It was not so much the education of the public as it was the well advertised name of a clinic.

Dr. E. E. MONTGOMERY, of Philadelphia, stated that his experience in the treatment of cancer was that we had very much yet to learn from the pathologist as to the best method of treatment. He had seen patients in whom the condition was such that he had little hope of their recovery, and yet he had operated upon them, doing either the vaginal or abdominal operation, as the conditions of the patients seemed to make most desirable, and had found that these patients lived for a number of years; some of them were still living after more than ten years, without any recurrence of the disease. He had seen other cases in which the disease occupied either the body of the uterus or the vaginal portion of the cervix, and in which his experience would lead him to say that here was a case in which one might hope for a radical cure, and yet within a few months afterward there would be recurrence of the disease and death of the patient.

Dr. CHARLES M. GREEN, of Boston, spoke of one case which had a lesson, in that the operation was a success for sixteen years, with no evidence of any recurrence about the pelvis. The patient then had general abdominal carcinosis.

Dr. SIDNEY A. CHALFANT, of Pittsburgh, said it was not the custom of Doctor Simpson to do the radical Wertheim operation. Of the cases embracing the five year limit, they had had thirty cases admitted. Of these only nine were suitable for the radical operation. Of these nine patients three died as a result of the operation; one died later of pneumonia at the end of one year; one died five years after operation of recurrence; and one died five and a half years after operation. Of the nine, there were three living and well at the end of three years. Of the thirty patients, four were considered inoperable, so far as radical operation was concerned. These four had had amputation of the cervix with the cautery. Of these four, one was living and well at the end of seven years; another one was living and well at the end of six years.

Treatment of Prolapsus Uteri with Its Advantages and Disadvantages.—Dr. E. E. MONTGOMERY, of Philadelphia, said that prolapse might be simple or complicated. No surgical procedure was applicable to every case. Certain principles must be kept in mind on which any operative procedure must be based. Their purpose should be to reduce the size of the heavy organ, replace support, and antagonize or deflect intraabdominal pressure by correction and fixation of the position of the uterus. The operative procedure might be vaginal, abdominal, or both combined. The uterus might be retained or extirpated. In all conditions requiring severe and complicated measures, its retention should be associated with sterilization. After the climacteric in marked prolapsus, attended with edema and gravity sores, hysterectomy was preferable as a procedure. In the majority of cases the vaginal route was the most satisfactory. In all

cases the rectovaginal interposition of the levator ani muscles was of the greatest value.

Prolapse of the Uterus.—Dr. J. M. BALDY, of Philadelphia, said that plastic work alone would not cure a certain proportion of cases. Consequently abdominal work of some kind was necessary in certain instances, but supplementary plastic work was always necessary. The abdominal work could be better and more surely done if the uterus was sacrificed than if an effort was made to retain it. In the class of cases in which this operation was performed the woman was past the childbearing period and no sentiments in regard to the uterus need be wasted.

Principle Involved in the Operation for the Relief of Procidentia Uteri with Rectocele and Cystocele.—Dr. J. RIDDLE GOFFE, of New York, said the true principle in normal support of the pelvic organs in women conformed to that of the other organs, namely by suspension from above. Any operation for the relief of prolapsus with rectocele or cystocele that ignored this principle, was false in conception and in the long run was doomed to failure. The universal maxim in plastic surgery was to discover Nature's plan and conform to it. In childbearing women the uterus was retained and restored to its normal position by the shortening of the uterosacral and the round ligaments. In cases of extreme procidentia, especially in women beyond the childbearing period, the uterus was removed, but the deflected plane of tissue was maintained by stitching together the broad ligaments across the pelvis. The round ligaments were retained and still assisted in tilting this plane of tissue so as to deflect intraabdominal pressure as before. It was diverted from its original direction where it would tend to force the contents of the pelvis out of the vagina. The other prominent feature of the operation was the restoration of the bladder to its normal position and function. A series of forty-four cases was presented in which the operation he described had been performed, the period of time elapsing since the operation extending from two to five years. On examination of all these cases it proved entirely satisfactory with one exception. Two women had become pregnant and borne children at full term, two years after operation.

Procidentia of the Uterus Treated by Plication of the Vagina and Conjoined Shortening of the Uterosacral and Broad Ligaments.—Dr. WILLIAM M. POLK, of New York, pointed out that the purpose of the operation was to remedy the defects without removal of the uterus, ovaries, or tubes. Two patients became pregnant subsequently and carried their children to term. Eight cases retained all the benefits two years from the date of operation. The bladder was separated from the vagina as far as the urethra. The entire anterior vaginal wall was then folded in by suturing the sides of the vagina together with kangaroo tendon. The uterosacral and base lines of the broad ligaments were conjointly shortened by a ligature which encircled above the uterine artery and within the ureter, the lower half of the broad ligament and the uterosacral fold, one half inch from the uterus for the broad ligament, and an inch for the sacral fold. The sutures, one for either side, were drawn forward and passed deeply into the tissue of the uterovaginal

region and tied. Kangaroo tendon suture material was used for the plication and for this shortening. Additional sutures were used to fasten securely the tissues brought forward from the broad ligament and uterosacral fold to make more secure the anchorage. The fold produced by the plication at the anterior vaginal wall was now incised from below, turning back excessive tissue, it being trimmed off only where necessary, and the surfaces were brought together by through and through sutures. In this way a strong supporting column was given to the base of the bladder, the whole being swung by taking up the slack in the lateral vaginal attachments, and by shortening of the broad ligament and uterosacral that had already been mentioned. The operator had carried out the procedure in eighteen cases without any undue shock or hemorrhage, and with good recovery in each case.

Operative Treatment for so Called Functional Dyspepsia.—Dr. WILLIAM H. WATHEN, of Louisville, said that every case of continued or inveterate dyspepsia or dyspepsia disappearing and recurring at regular intervals was antedated by disease in some part of the body, but in the large majority of cases the lesion would be found in some abdominal viscus as the appendix, the gallbladder, the stomach, the duodenum, the large or small intestine, or the uterine annexa. Dyspepsia caused by appendicitis or gallstones, with no stomach or duodenal adhesion, could be cured by the removal of the appendix, or by the removal of the stones and drainage of the gallbladder and bile ducts. In gastric ulcer the lesion should be excised, or if this was not possible, it should be infolded by linen sutures introduced deep enough to include the bloodvessels around the ulcer. The excision of a gastric ulcer was important because of the fact that seventy-five per cent. of the cases of carcinoma of the stomach had their origin in a chronic ulcer. As carcinoma was seldom, if ever, primary in the duodenum, the excision of the ulcer was not often indicated, as in ulcer of the stomach.

Election of Officers.—The following officers were elected for the ensuing year: President, Dr. Henry C. Coe, of New York; vice-presidents, Dr. George H. Noble, of Atlanta, Ga., and Dr. George Gellhorn, of St. Louis; secretary, Dr. Leroy Broun, of New York; and treasurer, Dr. J. Wesley Bovee, of Washington, D. C.

Washington, D. C., was selected as the place of the next annual meeting.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Handbook of Physiology. By W. D. HALLIBURTON, M.D., LL.D., F.R.C.P., F.R.S., Professor of Physiology, King's College, London. Tenth Edition. Being the Twenty-third Edition of Kirkes's Physiology. With Nearly Six Hundred Illustrations in the Text, Many of Which are Colored, and Three Colored Plates. Philadelphia: P. Blakiston's Son & Co., 1911. Pp. xvii-923 (Price, \$3.)

Professor Halliburton is so well known as a careful and conscientious writer and investigator that his statement that this, the tenth edition of his work, represents a very

thorough revision of the preceding edition can be accepted without question. A cursory examination of its pages serves, moreover, to sustain this confidence. Perhaps the most kaleidoscopic subject in the domain of physiology is the rôle played in the organism by the various ductless glands. An entire chapter is devoted to those features of the question which have been established, and, though physiologists have so far failed to determine the functions of these organs, the fact remains that the ground covered in the work represents the status of the exact knowledge we are warranted in imparting to students. Some subjects, the physiology of sleep and narcosis for example, convey considerable practical knowledge. Stress is laid upon the baneful effects of lack of sleep, especially in growing children as represented mainly by the mistaken Spartan discipline of certain parents, schoolmasters, and employers. The opinion is expressed, moreover, that many children, judged to be "defective" are really only suffering from want of sleep. The work is copiously illustrated, a fact which adds greatly to its value as a book of reference for the general practitioner as well as for the student.

A Compend of Human Physiology. Especially Adapted for the Use of Medical Students. By ALBERT P. BRUBAKER, A. M., M. D., Professor of Physiology and Medical Jurisprudence in the Jefferson Medical College, Lecturer on Anatomy and Physiology in the Drexel Institute of Art, Science, and Industry, etc. Thirteenth Edition, with Thirty-six Illustrations. Philadelphia: P. Blakiston's Son & Co., 1912. Pp. viii-248.

Owing to the campaign for the improvement of medical teaching, compends have in recent years become the butt of undeserved criticism, on the plea that they serve only to cram a student's head with a mass of unrelated facts, which as such are soon forgotten. But such compends as Brubaker's should not be included in this class. After students have finished their course of didactic and experimental physiology, a summary of the salient points, carefully arranged in logical sequence by a competent physiologist, is much better calculated to inculcate exact knowledge than the poor notes the students usually take. This is the purpose of Professor Brubaker's little book and it is admirably fulfilled.

Die Prostatahypertrophie. Ihre Pathologie und Therapie. Für Aerzte und Studierende dargestellt von Dr. med. WILHELM KNOB, Berlin. Berlin: Oscar Coblentz, 1912. Pp. 50.

This compact handbook contains the most modern observations on its subject, not excepting those of Tander and Zuckerkandl, published last year. This book is written in a fluent style with but few references. Beside covering the general subject, it states the author's results in twenty-seven prostatectomies. One note with interest the author's attribution of prostatic hypertrophy to an internal secretion. He devotes several pages to the catheter treatment but concludes by preferring operations employing suprapubic prostatectomy under spinal anesthesia. In every treatment of prostatectomy the employment of testicular injections is urged and these are employed with great success in certain cases of prostatitis without residual urine and wherein the prostate is little if at all enlarged.

Lehrbuch der Kystoskopie und Stereokystophotographischer Atlas. Von Dr. S. JACOBY, ehemalig. 1. Assistenten von weiland Geh. Mediz.-Rat und a. o. Prof. Dr. MAX NITZE an der Universität in Berlin. Mit 48 stereoskopischen Tafeln und 121 Textfiguren. Leipzig: Verlag von Dr. Werner Klinkhardt, 1911. Pp. viii-248.

The author of this volume had the unusual opportunity of being assistant to the inventor of cystoscopy during a period of ten years. During this time the art was undergoing gradual development from its crude beginning, and the author had a distinct rôle in perfecting the instrument and enlarging the field of its usefulness in genitourinary surgery. This is particularly true of the photographic reproductions of the normal and pathological findings within the bladder. Nitzé himself recognized that the ordinary photographs taken through his instrument were not perfectly satisfactory even when looked at through stereoscopic glasses. Jacoby has overcome this defect by means of his stereo-

scopic attachment to the cystoscope, and the pictures thus obtained are most satisfactory, both to the teacher and pupil. The author has collected a number of the more important stereoscopic plates taken from photographs and made an atlas to illustrate his textbook on the subject. The special advantages that he has tried to secure in these plates are the topographical relations of the landmarks of the bladder in its normal and pathological condition, the topography of ureteral catheterization and intravesical treatment of bladder tumors, and the appearance of the flow of urine from the ureter in color. The plates being entirely true to nature, and not "touched up," are very accurate in their reproductions of the normal and pathological findings. They cannot fail to be of great help, not only to the beginner in this field, but also to the specialist, especially in connection with his teaching. The textbook covers the subject very fully. The history of the cystoscope is particularly interesting as written by the inventor's first assistant. He goes very much into detail in describing the various parts of the instrument, the different modifications, the electric devices, the stereocystoscope, and the technique of cystoscopy. Beginning with the normal bladder, the various findings are taken up and lucidly described in connection with the plates. A long and interesting chapter is devoted to ureteral catheterization.

The volume is most attractive in form and will find favor both as a textbook and a book of reference.

Gynecological Nursing. By ARTHUR E. GILES, M. D., B. Sc., F. R. C. S., M. R. C. P., Surgeon to the Chelsea Hospital for Women, Gynecologist to the Prince of Wales's General Hospital, Tottenham. With Forty-one Illustrations. New York: William Wood & Co., 1912. Pp. xiii-187. (Price, \$1.50.)

This work consists of a series of lectures on gynecological nursing published in book form. Twelve chapters comprise the book, which is well written and replete with the up to date methods in this branch of nursing. The "ideal nurse" to whom the introductory chapter is devoted, is clearly and truly described, but will be regarded as one entitled to wear a starry crown rather than a white cap. The chapter on ovulation, from a nurse's standpoint, is especially clear and comprehensible, contrasted with the hazy idea obtained from most textbooks on the subject. The chapter on positions is likewise good and should be very helpful to nurses. While there is nothing particularly new on the subject—only such information that a nurse receives if she is trained in a first class hospital—the subjects are given in good order and are thoroughly treated. The book is very well illustrated and should be valuable for reference supplementary to the lectures to nurses on the subject.

An Index of Treatment. By Various Writers. Edited by ROBERT HUTCHISON, M. D., F. R. C. P., Physician to the London Hospital, and H. STANSFIELD COLLIER, F. R. C. S., Surgeon to St. Mary's Hospital, etc. Revised to Conform with American Usage, by WARREN COLEMAN, M. D., Professor of Clinical Medicine and Applied Pharmacology, Cornell University Medical College, Visiting Physician to Bellevue Hospital, New York. Sixth Edition, Revised and Enlarged. New York: William Wood & Co., 1912. Pp. xvi-1051. (Price, \$6.)

The purpose of the editors was to provide the practitioner with a complete guide to treatment within a moderate compass. It is a question whether this can be done within the limits of a single volume. This may account for the absence of a number of valuable remedies. We miss, for example, an article on bacterial vaccines or vaccine therapy. In hemophilia the most satisfactory agent at our disposal, thyroid gland, which reduces the coagulation time of the blood sufficiently to render serious operative procedures possible, is not mentioned. In other instances the authors seem to have overlooked the more recent contributions to our medicinal resources. We note, for example, the absence of any reference to the new and now firmly established pathogenesis of beriberi in respect to polished rice and the dietetic measures this entails. These defects are in great part compensated for, however, by the wealth of practical information afforded under many headings, syphilis for example, which includes the use of "606"

sistant Surgeon. Ordered to the Naval Hospital, Narragansett Bay, R. I. **Howard, J. C.**, Assistant Surgeon. Detached from Guam and ordered to the Asiatic Fleet. **Lee, A. E.**, Passed Assistant Surgeon. Detached from Buffalo Recruiting Station and ordered to duty with Legation Guard, Peking, China. **Rennie, W. H.**, Passed Assistant Surgeon. Detached from the *Prairie* and ordered to the *Montana*. **Shaw, H.**, Passed Assistant Surgeon. Detached from the *Montana* and ordered to the *Prairie*. **Wheeler, W. H.**, Passed Assistant Surgeon. Ordered to the Naval Hospital, Portsmouth, N. H. **Woods, E. L.**, Passed Assistant Surgeon. Detached from the Legation Guard, Peking, China, and ordered to the Asiatic Fleet.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army, for the week ending August 31, 1912:

Appel, Daniel M., Colonel, Medical Corps. Granted thirty days' leave of absence, with permission to apply for twenty days' extension. **Bartlett, W. K.**, Captain, Medical Corps. Ordered to the Army Medical School, Washington, D. C., for temporary duty, and upon completion thereof will revert to status of absence with leave; leave of absence extended ten days. **Birmingham, Henry P.**, Colonel, Medical Corps. Relieved from temporary duty in the Surgeon General's office, about October 1st, and will then proceed to the Walter Reed General Hospital and assume command of that hospital, relieving Colonel **Charles Richard**, Medical Corps, who will assume the duty of commandant of the Army Medical School, Washington, D. C., relieving Colonel **Louis A. La Garde**, Medical Corps. **Bosley, J. R.**, Captain, Medical Corps. Ordered to Madison Barracks, N. Y., for temporary duty. **Brewer, Isaac W.**, First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Niagara, N. Y., and will proceed to his home; upon the expiration of leave of absence for two months and one day, will stand relieved from active duty in the Medical Reserve Corps. **Card, Daniel P.**, Captain, Medical Corps. Relieved from duty in the Philippines and will proceed on the transport to sail from Manila about March 15th to San Francisco, and upon arrival will report to the Adjutant General for further orders. **Christie, A. C.**, Captain, Medical Corps. Ordered to proceed to Philadelphia, Pa., and to New York, N. Y., on official duties. **Clark, Howard**, Lieutenant, Medical Corps. Relieved from duty at Fort Crook, Neb., and ordered to go to San Francisco and take the transport to sail about February 5, 1913, for the Philippines for duty. **De Shon, George D.**, Lieutenant Colonel, Medical Corps. Promoted to the rank of lieutenant colonel from August 6, 1912. **Davis, W. R.**, Captain, Medical Corps. Left Fort Porter, N. Y., en route to Madison Barracks, N. Y., for temporary duty with troops in the field. **Dutcher, Basil H.**, Major, Medical Corps. Relieved from duty at Plattsburgh Barracks, N. Y., and ordered to Fort Sam Houston, Texas, for duty. **Edwards, George M.**, Lieutenant, Medical Corps. Relieved from duty at West Point, N. Y., and ordered to the Philippines for duty about February 5, 1913. **Eddie, Guy L.**, Colonel, Medical Corps. Promoted to the rank of colonel, from August 6, 1912. **Fife, James D.**, Captain, Medical Corps. Granted ten days' leave of absence. **Hanson, Louis H.**, Captain, Medical Corps. Will proceed at once to Fort Wadsworth, N. Y., for temporary duty, relieving First Lieutenant **Harley J. Hallett**, Medical Corps, who will then return to his station. **Heath, George D., Jr.**, Captain, Medical Corps. Relieved from duty in the Philippines, and will proceed to San Francisco on the transport sailing from Manila about March 15, 1913, and upon arrival will report to the Adjutant General for further orders. **Holland, Josiah H.**, Lieutenant, Medical Corps. Ordered to proceed from Fort Douglas, Utah, to Fort Bliss, Texas, for duty with the First Battalion, 18th Infantry, relieving Lieutenant **Kent Nelson**, Medical Corps. **Magee, James C.**, Captain, Medical Corps. Relieved from duty in the Philippines, and will sail on the transport leaving Manila about March 15, 1913, for San Francisco, and upon arrival will report to the Adjutant General for further

orders. **Maguire, Daniel F.**, Lieutenant, Medical Corps. Relieved from duty at Fort Barrancas, Fla., and ordered to the Philippine Islands for duty. **Metcalfe, Raymond E.**, Major, Medical Corps. Promoted to the rank of major, from August 6, 1912. **Rich, Edwin W.**, Major, Medical Corps. Promoted to the rank of major, from August 7, 1912. **Sheep, William L.**, Lieutenant, Medical Corps. Granted twenty days' leave of absence. **Stayer, Morrison C.**, Captain, Medical Corps. Relieved from duty in the Army Transport Service and ordered to Madison Barracks, N. Y. **Thearle, W. H.**, Captain, Medical Corps. Relieved from duty at Fort Leavenworth, Kansas, and ordered to the Philippine Islands, for duty, about February 5, 1913. **Torney, George H.**, Brigadier General, Surgeon General of the United States Army. Will proceed to Fort Leavenworth, Kansas, for the purpose of examining and inspecting the United States Military Prison and the Pacific branch thereof.

Births, Marriages, and Deaths.

Born.

Schlaner.—In Fort Shafter, H. T., on Sunday, July 21st, to Lieutenant A. E. Schlaner, Medical Corps, United States Army, and Mrs. Schlaner, a son.

Married.

Bowers—Spangler.—In Washington, D. C., on Wednesday, August 14th, Dr. Benjamin Franklin Bowers, of Saint Benedict, Pa., and Miss Roberta Spangler. **Cohen—Joseph.**—In Denver, Colo., on Monday, August 10th, Dr. Haskell M. Cohen and Mrs. Joseph. **Duncan—Ellis.**—In Russellville, Ky., on Wednesday, August 7th, Captain William A. Duncan, Medical Corps, United States Army, and Miss Sue Erma Ellis. **Hutchings—Coulston.**—In Wilmington, Del., on Thursday, August 8th, Dr. J. M. Hutchings, of Philadelphia, and Miss Susan L. Coulston. **Huth—Hoyer.**—In Milwaukee, Wis., on Monday, August 26th, Professor Carl F. W. Huth and Dr. Lucia C. Hoyer. **Mulheron—Jones.**—In Albion, Mich., on Wednesday, August 21st, Dr. J. J. Mulheron, of Greenfield, and Mrs. Mary J. Jones.

Died.

Archinard.—In New Orleans, La., on Friday, August 23d, Dr. Paul Emile Archinard. **Collver.**—In Wellandport, Ontario, Canada, on Sunday, August 18th, Dr. J. W. Collver, aged eighty-two years. **Darlington.**—In Buffalo, N. Y., on Sunday, August 18th, Dr. Stanley Hunter Darlington, aged thirty-five years. **Denison.**—In Denver, Colo., on Monday, August 26th, Dr. Henry Strong Denison. **Foster.**—In Crafton, Pa., on Friday, August 23d, Dr. Walter Ross Foster, aged forty-eight years. **Fugere.**—In McGregorsville, N. H., on Thursday, August 29th, Dr. Edouard Napoleon Fugere, of Manchester, N. H. **Johnson.**—In Dudley, Pa., on Saturday, August 17th, Dr. William Horace Johnson, aged seventy years. **Lamb.**—In Lawrence, Mass., on Monday, August 26th, Dr. William Daniel Lamb, aged eighty-eight years. **Lewars.**—In Philadelphia, on Wednesday, August 21st, Dr. Horace S. Lewars. **Martin.**—In Milwaukee, Wis., on Wednesday, August 21st, Dr. Robert Edwin Martin, aged forty-seven years. **Miller.**—In Lebanon, N. J., on Tuesday, August 27th, Dr. Henry H. Miller, aged fifty-eight years. **Newcomb.**—In New York, on Tuesday, August 27th, Dr. James Edward Newcomb, aged fifty-five years. **Parker.**—In Jersey City, N. J., on Sunday, August 25th, Dr. William James Parker, aged fifty-four years. **Price.**—In Shenandoah, Pa., on Wednesday, August 28th, Dr. David John Price, aged fifty-eight years. **Robinson.**—In Los Angeles, Cal., on Monday, August 26th, Dr. William K. Robinson, aged forty-three years. **Rose.**—In Centerville, Md., on Friday, August 23d, Dr. Charles Henry Rose, aged seventy-nine years. **Sparrow.**—In Cambridge, Mass., on Monday, August 26th, Dr. Ernest Harold Sparrow, aged thirty-three years. **Wolff.**—In Providence, R. I., on Sunday, August 18th, Dr. Horace H. Wolff, aged forty-seven years. **Wright.**—In Lake Placid, N. Y., on Monday, September 2d, Dr. Joel Williston Wright.

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Original Communications.

THE INHERITANCE OF ACQUIRED CHARACTERS.

A Study of the Recent Literature.

By JONATHAN WRIGHT, M. D.,

New York,

Director, Department of Laboratories, New York Post-Graduate Medical School and Hospital.

II.

RECENT BIOLOGICAL OBSERVATIONS AND THE DISCUSSIONS ELICITED BY THEM.*

In the previous paper I cited much of the recent general expression of biological opinion in regard to the subject. It remains for me to refer to more specific facts and their influence on biological thought.

The most unwavering support for the belief in the hereditability of acquired characters has been found among the palæontologists. From the work of Cope in this country to that of Hoernes abroad, the evidence of the parallel change in animal structure as revealed in the fossils, and of geological changes as revealed in the rocks, has been too strong not to convince the majority, at least in this branch of scientific workers, of the influence of environment upon the germ plasm. Hoernes¹² refers to a very late expression of Darwin's opinion elicited from his acquaintance with Neumayer's examination of shell animals in the Alps. Darwin says, under date of March 9, 1887:

It seems to me to be an admirable work and is by far the best which I have ever met with, showing the direct influence of the conditions of life on the organization. . . . There can now be no doubt that species may be found greatly modified through the direct action of the environment; I have some excuse for not having formerly insisted more strongly on this head in my *Origin of Species* as most of the best facts have been observed since its publication.

So we find here as with Weismann that the ultra-Darwinians have outDarwined Darwin. Suess, also a palæontologist of note, has declared, more than thirty years later, that the very important "influences of the environment on living beings is in no way antagonistic, but on the other hand, supplemental to the Darwinian theory, that is to say to the struggle for existence."

In the following excerpt¹³ we have an exceptional contribution to the argument from medical sources as well as from other biological fields:

At the time when the problem of transformism was entirely dominated by the Darwinian idea of the survival of the fittest, very few were disposed to accord any importance to pathological phenomena in the formation of new species. At the present time, however, when a reaction against the theory of adaptation and natural selection is becoming more and more pronounced, they are beginning to place pathological phenomena among the factors of evolution. The idea is not new because Virchow has already insisted that there exist pathological races, such as the bull dog and the pug dog, and even pathological genera and species among worms and crustacean parasites. J. von Kennel places among pathological species anural cats, *Babynussa alfurus*, the narwhal, and *Anarchichas frontalis*, of New Zealand.

In a recent article (*Biologisches Centralblatt*, xxxi, p. 475) Prowazek attempts to show that immunity and anaphylaxis can easily play a rôle in the evolution of species. Bats, immunized against tetanus, appear to transmit this character to their descendants; in like manner, according to Ehrlich, immunity against ricin and against abrin is transmitted through the uterus. As far as anaphylaxis is concerned, it is hardly possible to say, for lack of convincing experiments, if it is transmitted in a hereditary way; but according to Prowazek, it may well be one of the factors of evolution. There may be, as well among animals as in the vegetable world, hypersensitive species. Certain plants have a particular tendency to form galls; the swellings upon the branches of eucalyptus of *Acacia pendula*, the nectarines even, may be considered as the consequences of anaphylaxis as well as the "pearl glands" of certain vines. . . . The hypersensitiveness of protoplasm in the presence of certain substances such as ferments and noxious agents generally, may bring about hypertrophy of the cell and one can explain in this way some of the galls, certain special formations among *Siphonaceæ*, etc. All these characteristic formations of different species may therefore be acquired rather under the influence of hypersensibility than under that of natural selection. Prowazek considers further as anaphylactic reactions, the property which certain flagellates have of surrounding themselves with mucus and forming cystic envelopes of mucus, the mucosity of the skin of certain holothuria, the fragility of certain worms. . . . One might explain perhaps, by anaphylaxis, the appearance of species perfectly adapted at once, such as certain insect devouring plants.

When the conditions of life have changed, the phenomena of anaphylaxis can lead to a hypertrophy of certain organs, such as those of locomotion, of reproduction, etc., in a whole series of beings belonging to various genera, for example, the hypertrophy of the apparatus of locomotion in the protozoa has given place to forms with numerous flagellæ as well among the ciliata as among the flagellata. One then sees the same modification manifested in the most widely separated organisms so that, as it were, the same species is repeated in many genera. The botanists have, moreover, for a long time drawn attention to the phenomena of parallelism which one meets when one compares the cactuses with certain other genera. "It is evident that experience alone can detect the rôle of anaphylaxis in the formation of new species."

It is easy to see from the foregoing that the author, or his reviewer, looks upon these phenomena as destructive of the theory of natural selection, at least to some extent. We may venture to remark that some of these instances seem to imply a careless analysis and an exaggerated application in

*Read at the Seminar of the Staff of the Laboratories, May 23, 1912.

¹²*Scientia*, 1, x, 1911.

¹³*Revue scientifique*, December 23, 1911.

forcing them into line as examples of factors in evolution.

In the course of experimental researches upon *Lepidoptera*, M. Pictet, whose admirable studies upon the insects are well known, has many times had occasion to prove the transmission from the parents to the offspring of acquired characters; the examples which he cites in this regard are entirely relative to the alimentation of larvæ. The chrysalides of the lepidoptera frequently have difficulty in nourishing themselves with leaves when they are not those which their species are in the habit of devouring. Their growth slows down, their size diminishes, and the butterflies which are born from them are smaller and paler than under usual conditions, but if the new régime is continued in the individuals of the following generation, in many cases the alimentation is more effective and the characters of inferiority tend to disappear. In the third or fourth generation, adaptation seems to be entirely established, and the larvæ are no longer handicapped by the new régime, which proves that the larvæ inherited from their parents the new habit which these have been forced to take on and they even make this more perfect.

Here is a new example cited by M. Pictet.¹⁴ He divided into two lots the caterpillars of a hatch of *Lasiocampa quercus* which normally feed upon the leaves of the oak tree, rose bushes, etc. It is well to note that the caterpillars which are accustomed to feed upon flat leaves begin upon them at the lateral border. The spread of the jaw is calculated to take in the thickness of the leaves and cannot pass a certain limit. The individuals of one of these lots were nourished upon *Econymus japonicus* and treated as controls; those of the second lot were put in contact with the needles of the pine. In order to devour these, the caterpillars of this last lot began at first as they would upon the flat leaves and attempted to gnaw them from the edge, but as their jaws could not spread far enough apart their efforts were ineffectual. However, a certain number advancing along the needles came to a point which is thinner than the rest and this they succeeded in attacking; once the point of the needle was eaten, they continued to feed themselves by making a groove in the thickness of it. This newly acquired character consists, therefore, in attacking the needles from top to bottom and in furrowing them, while normally the leaf is attacked at the edge and eaten.

In placing the caterpillars of the second generation, born from parents adapted to the pine, in contact with leaves from *Econymus*, M. Pictet has proved that these caterpillars have, so to say, lost the habit of eating flat leaves for they attempt to attack them from their point as though they were needles of the pine, and when they did not succeed a large part of them died. Some, however, became adapted to the new régime, that is to say, they return, although with difficulty, to the habit of the species. Some, moreover, who have reached, by chance of going and coming, the point of a little branch of the leaf, immediately attack this from above downward and begin to make a furrow in its interior. This fact shows that what facilitates in certain species a habit newly acquired, can be transmitted by heredity to the following generation.¹⁵

There is an intrusion into the discussion also of the principle of orthogenesis, more especially in connection with the hypertrophy of parts as a factor in evolution which I will discuss in another connection.

If one regards the conditions of life as we observe them, brought about by natural selection, to be a tight fit adaptation, that is, a condition of an organized being so perfect that it is exactly in harmony with its environment, we must admit that such instances as these are inconsistent with the theory of natural selection or the survival of the fittest; but as a matter of fact, though this may be, as the optimists are fond of saying, the best of all possible worlds in a theological sense, such is not a

view excusable in scientific observers. There are all degrees in the variation of beings, living contemporaneously, to their environment; the more the environment changes, the more this is so. Without due reflection, we might well imagine a condition of affairs in which the environment did not change, and after an unknowable stretch of time all living beings might be thought capable of then becoming perfectly adapted to their environment. This, however, is absolutely destructive of one of the fundamental conceptions of life. Without change, without variation, we should be in a state of stable equilibrium which is the very negation of life. There are certain seeds, and even certain more or less developed living things, which, when entirely deprived of water or when placed in an environment of temperature near to absolute zero, apparently do not change in the least over any period of time during which man can observe them. They are then incapable of every vital manifestation and in a certain sense we may say that they are perfectly adapted to their environment, because as long as this environment lasts they are still in existence, but in a suspended existence, that is, while on the advent of a higher temperature or on contact with water they are again capable of manifestations of life, they are perfectly adapted to the stable environment in which for the time they exist. While this seems a mere quibbling of words, its development here is excusable on the plea that it is useful in illustrating the point, that the environment under actual conditions as we observe them in life is not a close clipper of living beings. A large latitude of viability exists in the species or genera. This must necessarily be so, or certainly mutation would be impossible.

It is probably from the lack of a wide acquaintance with all the problems in the question of heredity that Loeb ventures to believe that it is practically a close fit selection, constantly applied, which accounts for many of the apparent effects of hereditary transmission. This is only one instance of the inability to realize that, at least as yet, the physico-chemical view of life is entirely inadequate to account, not only for all the facts of heredity, but for all the facts in many other divisions of biology. Loeb says:

It is not an exaggeration to maintain that the present existing species constitute only an infinitesimal fraction of those which may appear, and which probably do appear every day and which escape our attention because they are not adapted to live. Only a small number of forms are viable, those which do not present the lack of harmony too great for the mechanism which assures their preservation. The lack of harmony and the misfits are the rule in nature, the arrangements harmoniously formed are the exception, but since we habitually perceive only the latter, we have the erroneous impression that the adaptation of parts to the plane of the whole is the general phenomenon of organic nature which separates it from that of the inorganic world.

If we knew the structure and the movement of atoms, we should discover probably also a whole world of marvelous harmonies and apparent adaptations of the parts to the whole, but we should very shortly have to take account of the fact that chemical elements present only a small number of stable groups in relation to the great number of combinations possible, but unstable. No one can have any doubt that stable chemical groups are the resultant of the blind forces of nature. There is no reason to consider otherwise the stable groups of inanimate nature.

¹⁴ *Revue des Sciences physiques et naturelles*, xxxi, p. 56, 1911.

¹⁵ Abstract from *Revue scientifique*, January, 27, 1912.

We have, therefore, in a retranslation of the French transcript of Loeb's work, the antithesis of the conception of Bergson.

Perfect adaptation is incompatible with the existence of those attributes which define life, and in this view we must recognize that "survival of the fittest" is a phrase not nearly so exact as is commonly supposed. Most of the instances I have cited are commonly explained by ultraDarwinians as examples of latent capabilities of variations in the germ brought to fruition by the environment. On the other hand, the neoLamarckians aver, and I confess I agree with them, that this is mere verbal quibbling, for no one to-day denies the existence of natural selection. Every one admits that the germ plasm must vary or perish, but the reference of every instance of the apparent influence of the environment on the germ plasm to latent and innate qualities, is a subversion of the rules of logic. The germ plasm must be impressionable or it would not answer external stimuli, even by a renewed activity of latent or innate qualities. I confess I cannot see why it is not logical to conclude that within the limits of variability, certain stimuli from the environment bring about certain manifestations of the response of the germ plasm. Adaptation of living beings by natural selection is certainly not a close fit. To account for certain phenomena of adaptation we may be sure natural selection does not suffice.

If we were to imagine that some man had invented the process of evolution, we could imagine his critics after a thorough trial of the system speaking as follows:

Evolution by natural selection is about the most awkward machine to accomplish its purpose which the mind of man could have conceived. Effectual, yes, of course, so is the wheel of Juggernaut effectual but the thing is never completely and neatly done. The answer to the call of environment is never an exact and complete one; there is always a margin between the demand and its fulfillment. The more steady the demand, the more perfect the supply, obviously; but though it has taken untold geological ages to adapt protoplasm as manufactured by this man, to the range of temperature it must withstand, yet protoplasm is ever complaining, either audibly and verbally in the case of man, that the day is too hot and too cold for it, or it is evidenced in the flagging vigor of inarticulate life. Think of the ruthless slaughter of individuals and of molecules which it has cost that we living things can exist even temporarily in the 100° C., which stretches between the freezing point and the boiling point of water; think how long protoplasm has been moulding itself in the acquisition of the characteristics whereby that is possible, even forgetting for the moment the vast amount of protoplasm which has perished. A million years for such a sorry result! Think how long it has taken the protoplasm of the tonsillar epithelium to distinguish between dust and disease germs and how imperfectly it still does so. Any little change in the temperature, any little ethereal vibration along the sympathetic nerves and it allows morbid germs to enter. Some bacteria will get through under any conditions, but under such slight variations enough of the worst kind will enter to cause suffering and death. How much better an apparatus Helmholtz would have invented to see with than the eye if only the job had been given him—how much more complete a filter we of the laboratory would have made of the mucous surfaces!

The answer to this tirade might well be after all. Helmholtz was only joking, and in all seriousness we must admit that though it is a pretty poor sort of a job there does not occur to us any better arrangement. Perhaps this conception of the process

as Nature shows it, is as near to the truth as we can at present arrive. Neither by adaptation nor by selection is the process perfect; there is always a margin, but that margin is the margin of safety. The seeming adaptation, the seeming more perfect selection again, as the environment changes, needs readjustment, and it is in that apparently weak margin of imperfect adaptation that we are to seek for the possibility of new adaptations, which we are to use again for our grounds of selection in the never ending attempt to adapt living things to their environments. Out of the neurosis of the human race in which alcoholism is continually seeking its victims, it is continually moulding a race, less neurotic, better adapted to the struggle for existence, yet out of this neurosis is frequently selected that strain of energy in the human race which tells for the greatest achievements of humanity. We perceive then that without this imperfection of selection and adaptation, without the margin of safety, evolution is impossible.

I have had occasion to refer to the work of Kammerer on the salamander. He has continued his observations and extended them to the method of parturition in frogs.

The chief agent Kammerer¹⁶ used in changing the inheritance characteristics of his obstetrical frogs was temperature. In recapitulating his former work on salamanders he remarks: "One factor especially which is nearly always associated with the captivity of the animals in our geographical latitude is the fall of temperature, which is brought about on the approach of winter, and it is precisely this factor which appears to be isolated in my new experiments, so concentrated and in such a way applied as to be promptly and regularly efficacious in causing the cessation of the brooding care over the frog eggs," this latter being the hereditary character with which he was experimenting and which is the striking characteristic of the batrachian (*Alytes obstetricans*) with which he worked. It was found when the instinct of brooding and the obstetrical care, exercised by the male toward the eggs and the female, were interfered with for a generation, that the same brooding and the same care were not exercised toward the eggs and the female by the first generation born and bred after the parents had been returned to normal conditions and they and their offspring kept there. This departure from the normal instinct was not in a direction which could be called atavistic, as the cessation of the brooding and obstetrical care could not have been omitted in the phylogeny of the race under natural conditions without its extinction. He formulates this phenomenon in the terms of Semon by intimating that the *mneme*—the habit—the memory of the protoplasm had been broken up. At a certain time in the normal development of the embryo of the land eggs within the egg sac its movements begin to be noted and these mechanically result in the rupture of the sac and the embryo creeps forth. It is possible to delay this period of movement by various artificial means, that employed by Kammerer being the keeping of the eggs in obscurity, moisture, etc. During this extra pe-

¹⁶Vererbung erworbener Eigenschaften beim Menschen, III. Mitteilung, *Archiv für Entwicklungsmechanik*, XXXII, 1. November 1910.

riod of remaining within the egg, the larvæ do not grow in size, so that when they do come out they are not larger or more fully developed than when they remain a shorter time within the egg sac, and it was noted the longer they stayed in the egg sac the smaller was the size of the frog when full grown, the latter also being the result when the larvæ from the eggs develop into frogs on dry land. On coming out of the egg the gills are absorbed, but, "in addition to the absorption the process goes on at first also through the breaking off of the points of the gill bodies and the gill threads, later only by resorption."¹⁷ If the frogs are kept in room pens, with their limited quarters, there easily comes about a disarrangement between motion and nourishment, a too great increase of the latter having as a result the fatty degeneration of the glands of generation.¹⁸ In the present third communication I wish specifically to put on record three results of such a nature that the reproach that they are atavistic in their essence cannot be admitted: In the first place, the inherited suppression of a part of the larval period and thereby an approach to a direct development without a stage of metamorphosis, arising from the fact that a longer period is spent in the egg than is usually the case with *Alytes*; . . . second, for the same reason, the inherited increase of viability of the *Alytes* larvæ on land, together with the corresponding characters; third, the inherited neotenia (that is, the birth from larvæ of animals with gills, tail, etc., as a result of increased water life of previous generations, which persisted on land when the animals were placed again in their usual cycles of environment), even beyond the period of sexual ripeness. In the weak but nevertheless plain inheritance of the said neotenia there is, therefore, a result achieved which is in reality somatogenetic inheritance"—which is not open to the criticism of its being an increase of atavism. Moreover, the tendency to this abolition of metamorphosis at the proper time was evident in the common offspring of the gilled frog and a normal mate.

It is difficult to see here how the criticism of innate or latent properties in the germ plasma would apply. It may be remarked, however, that changes in instincts, since they have to presuppose some change of molecular structure, not exhibited to view, are not so satisfactory as visible changes, but are scarcely less convincing.

I may also refer to the observations of Tower, who showed that in certain moths, various influences (light and moisture) affect the somatic cells, when exerted on the growing animal, producing aberrations which are not inherited, but when fully developed moths were subjected to the same influence, no somatic aberration was obtained. The offspring of moths who were immature at the time of the foreign influence showed no variation, but

the offspring of the moths who were subjected to the influences when their germ cells were mature, showed the same aberrations or variations as those exhibited by the immature moths in their somatic phenomenon. Hence, this has been held to prove Weismann's contention of a direct influence exerted on the germ plasma: Kammerer points out that a similar thing was observable in his experiments which showed the influence of the somatic cells on the germ plasma. The frogs which showed certain variations up to but not including the period of maturity had normal offspring under the usual conditions. But such variations as persisted into the egg bearing period, although acquired during the larval period, were inherited by the offspring, and were not of an atavistic nature. Unripe germ plasma was not affected directly or indirectly in the moth or the frog by somatic changes, but in the frog it seemed possible that this was the case when the germ plasma was ripe. This applies to morphological characters. Habits and instincts, an acquired sexual precocity, seemed to be inherited by the offspring of frogs living in a temperature higher than normal, and traces of this acquired heredity persisted in subsequent generations whose immediate progenitors had been removed to normal temperature.

In most of the other thus far attained experimental examples of acquired characters, the sensitive stage in the maturation period of the genital organs corresponded with the effective period of the changed external factors. This applies to all inheritance of forced reproduction adaptation in the salamanders, instinct variation in frogs, neotenia in *Alytes* and *Amblystoma*, change in the land form of *Amblystoma*, and finally to the inheritance of color variation of butterflies as demonstrated by Standfuss and Fischer, as well as to the variation in moths proved by Tower.

As I comprehend this, the somatic change must occur from influences of the environment exerted in the immature animal and these changes in the soma must persist into the period of sexual ripeness. If this is true in certain instances, it must be remembered that it can be held to apply only to the instances actually demonstrated, for evidently most somatic change, even if it persists, does not affect the heredity. On the other hand, there are some experimental indications, such as the acquired earlier movements of the embryo which ruptures the egg sac, which would point to an influence on the unripe germ plasma at the time, or transmitted indirectly through the storage of the impulse in the somatic cells until the germ plasma is ripe.

Still further, Kammerer leans to the opinion that some of his experiments demonstrate the inheritance of characters acquired by functional use of parts rendered necessary by the environment. This is a point which has always been so bitterly contested that, in order to carry conviction it will require much more conclusive evidence than he presents. One may well believe that a rigid analysis of the term "functional use of parts," would after all be found to rest upon some structural phenomenon, even though no more than molecular.

This intricate and difficult demonstration of fact and deduction has become necessary in order to escape the criticism of the neoDarwinist, that all instances demonstrated of change in the germ plasma are atavistic and are therefore innate germ

¹⁷Incidentally I draw attention to this biological process of regression in order to emphasize some work I did upon the tonsils a number of years ago in which I demonstrated a process which I called *autoclasia* as an auxiliary process of the regression of tonsils in adolescence or adult life. In addition to the resorption taking place from the action of lymphocytes, I showed that tonsils regress also by virtue of breaking off of surface projections which have become isolated from the body of the tonsil by epithelial and fibrous hyperplastic processes.—*Laryngoscope*, April, 1904.

¹⁸Is this not the cause of race suicide beginning at the "top," and why the poor and needy and hardworking of mankind have the most children?

plasm properties which have become latent and summoned again into visibility by the environment. How difficult it is for the neoLamarckians to escape the criticism of latent characters or atavistic tendencies excited anew by the environment, may be seen from some work of Mlle. Bonnevie. It will also serve to illustrate how intimately the question of the mutation of species is bound up with that of Mendelian phenomena.

Bonnevie¹⁹ in experimenting with fresh water shrimps believing the evidence of M. Bordage that "*Atya* descends from *Ortmannia*," placed the latter in tanks and from the females obtained, under the artificial conditions, part of the brood of typical *Ortmannia* and part *Atya*, their chief differentiation being in the character of their pincers. Moreover she found under these conditions that *Atya* itself when a claw was cut off regenerated a claw similar to *Ortmannia*. So far as the evidence goes, therefore, we have here an instance of a mutation apparently wrought by change of conditions with a familiar atavistic tendency to reversion both somatogenetic and ontogenetic.

It is true certain biologists have done much to show that these and many of the mutations of De Vries are open to the possible explanation that they belong in a Mendelian formula, but for the most part this criticism has not been firmly established or else it has been found inapplicable. It must be realized that atavism is the phenomenon with which Mendelian laws are concerned, since it is the ratio of ancestral traits appearing in hybrid descendants which has excited biological interest.

While De Vries at first attributed to the old age of the species or to some other ill defined phenomenon, the power of bringing out the phase of mutability, in 1905 he was more specific and declared if mutability was not an original attribute, it must have been produced at some time by external factors, and even at its origin, if it was an original attribute, it must have had an external cause. The extent of the mutability, as well as the possible variations that are due to it, must be regarded as the result of internal causes, but the determination of the moment when the mutability becomes active, can never be the result of internal causes. It must be attributed to some external cause; when in any case they shall have discovered it, they will have found the direction in which experimental research can be most profitably pursued. Whether or not every case of the apparent influence of the somatic environment on the germ plasm is due to the recession or dominance of some Mendelian unit, is a question that bids fair to remain long unsettled in spite of experimental biology. Some of the mutations in Indian corn, mentioned by Blaringhem, which I have also observed, such as abnormalities of the ear caused by mutilation of the stalk at a certain stage of its growth and said by him to be inherited, may well be atavistic returns to a more primitive state of the maize plant. The phylogeny of this plant is lost in antiquity, but in Chile and even in Mexico there are found certain forms which suggest the foregoing explanation of Blaringhem's results.

Blaringhem, in his recent work, says that "it is commonly thought that the only example of mutation is the *Cenehera* of Lamarck. No doubt this is the one that has been most studied and most discussed, but there exist many examples much more exact and decisive." It is the purpose of Blaringhem's new book to bring these into prominence.

"De Vries has insisted for a long time upon the periodicity of mutations, upon the independence mutations exhibit of the external environment"; Blaringhem is of exactly the opposite opinion. "The assembled proofs in favor of the possibility of modifying artificially the heredity of animals and of plants are for the most part favorable to the theory of sudden variation in the characters of varieties, of species, and of genera, but they also prove that changes result from the active intervention of external agents—from the *primary factors of evolution*, according to the expression of Giard. Sudden changes of the nutrition of the sexual cells, of eggs, of buds, of larvæ, especially during periods of metamorphoses or of rapid growth, bring about sudden and hereditary variations of specific characters, of mutations in the proper sense of the word."

In studying this question of the relative frequency of great variations and of small variations, sight must not be lost of the right we have to expect that, as observations and experiments multiply, a continuity in degree, a gradation between the two, will be found to exist. We must also not lose sight of the distinction between expecting artificial mutilations to repeat themselves in the descendants and the evidence that certain kinds of somatic change produce in the offspring changes entirely unrelated in kind to the mutilation or the environment of the ancestor,—that is, as some one has pointed out, the father's eating sour grapes may not set the son's teeth on edge, but it may give him a wry neck. So the change of temperature may not always produce only the power of greater resistance to a higher or lower change of temperature in the descendants of those subjected to it, but it may produce other phylogenetic changes apparently uncoordinated with it, such as deeper pigment in the butterfly's wings. Thus, in the observation referred to by Plate,²⁰ where at the Svalof Experimental Station, Count Arnim Schlagenthin noted the occurrence of mutation in wheat following the influence of two very severe winters on a hitherto pure strain of the grain. The resultant mutation had apparently no relation to resistance to a low temperature.

POLYNEURITIS WITH RADICULAR AND SPINAL CORD INVOLVEMENT.*

Report of an Atypical Case with Complete Recovery.

BY WILLIAM M. LESZYNSKY, M. D.,
New York.

CASE. This young man is a clerk, twenty-one years of age. Six years ago he had an attack of cerebrospinal meningitis from which he completely recovered in about

¹⁹Darwinisches Selektions-Prinzip, p. 309.

²⁰Revue scientifique, 10, 2, September, 1900, reference to Bulletin scientifique de la France et de la Belgique, xliii, 1.

*Patient exhibited and reported before the New York Neurological Society, May 9, 1912.

two months. One year later, he suffered from frequent and severe generalized headache which was usually accompanied by vomiting and epistaxis. This continued at intervals for nearly a year, and he remained perfectly well the following year. His habits had always been exemplary; he never used alcohol nor tobacco; he practiced occasional masturbation earlier in life, and there was no history of traumatism, exposure to cold, nor syphilitic infection.

He entered my hospital service in August, 1909, with the following history: Nine months before, he first noticed weakness in the left thumb and index finger. This progressed until the hand became useless. Six months later the right hand became similarly affected and the

flexes were present, and the atrophy affected the same groups but in lesser degree. The nerves and muscles of all extremities reacted normally to faradism, save a slight quantitative decrease in the atrophied muscles in the left hand. There was pronounced anteroposterior spinal curvature with kyphosis from the eighth to the twelfth thoracic vertebrae. No tenderness or pain was felt on pressure over nerve trunks or muscles. There was an area of left hemihypesthesia and hypalgesia and diminished temperature sensibility over the trunk, extending posteriorly from the level of the seventh cervical to the twelfth thoracic spine, and anteriorly from the clavicle to Poupart's ligament. There was also an area of incomplete thermoanesthesia on the inner surface of the left arm, as shown

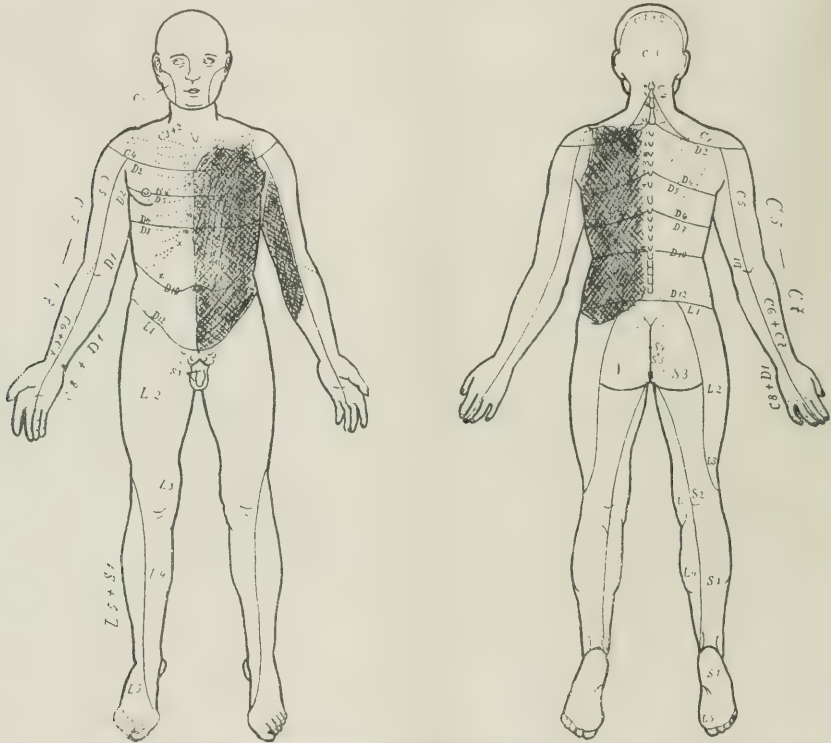


FIG. 1. Showing radicular and spinal cord involvement in a case of polyneuritis.

fingers were rigid. Soon after, both lower extremities were weak, and there was difficulty in walking. Urination was slow, with occasional retention, but no incontinence. There was no pain at any time. Soon after admission the following conditions were noted:

No static ataxia; gait slightly paraplegic and of the steppage type; unable to stand on either leg alone; the lower extremities showed no signs of atrophy; incomplete foot drop on both sides, the paralysis being limited to the peroneal group. On the left side there was slight paresis of the iliopsoas, and all reflexes were absent, while on the right side there was slight spasticity in the crural group and adductors, the knee jerk and other reflexes being very feeble; bilateral flat foot. Both hands were cold and moist, and the finger nails were cyanotic; the left hand showed pronounced muscular atrophy limited to the ulnar distribution (interossei, thenar, and hypothenar groups) producing claw hand; there was no grasping power; elbow and wrist jerks were absent; moderate atrophy in shoulder girdle. On the right side, the grasp was feeble, the re-

in the accompanying charts. The pupils, eyegrounds, facial innervation, and tongue were normal. The thoracic and abdominal organs showed no evidence of disease; the urine and blood examinations were negative.

He remained in the hospital seven weeks and was discharged improved only as to his general nutrition. He then returned to his home wearing foot braces; and baths, massage, passive and active movements, feeding, strychnine, etc., were continued.

I saw him again three months later. At that time, static and locomotor ataxia were pronounced. There was hypotonia in both lower extremities, with genu recurvatum, complete bilateral foot drop, absence of all reflexes on both sides, and slow urination. The quadriceps group was intact, but the posterior thigh groups were paretic on both sides.

One month later, the gait had improved, the action of

the bladder was normal, the right knee jerk had returned, and the foot drop had lessened. The improvement was progressive, so that three months later the right lower extremity was practically normal with all reflexes present, while on the left side the paralysis was limited to the peroneal group, the knee jerk had returned, but other reflexes were absent. The right upper extremity had recovered, but some atrophy was still present in the left hand. Several months later, he was able to walk two or three miles daily without fatigue, and the atrophy in the left hand had disappeared.

The recovery of this patient is practically complete, the only residual defect being left is hypalgesia over the trunk; the left knee jerk can be obtained only with reinforcement; and the left plantar, cremasteric, and abdominal reflexes are absent.

To summarize: There was a slowly progressive development of atrophy and paralysis beginning in the ulnar distribution of the left hand until claw hand resulted; some atrophy in both shoulder girdles; a lesser involvement of the ulnar group in the right hand; vasomotor paresis in both hands; absence of subjective sensory symptoms; no pupillary disturbance. Several months after the onset the lower extremities became implicated, the paralysis being limited to the peroneal group on both sides. An area became evident of sensory disturbance over the trunk on the left side affecting all forms of sensibility, and an area of incomplete thermo-anesthesia over the inner aspect of the left arm. At the end of a year there was a rapid exacerbation of the symptoms in the lower extremities, at which time there was complete bilateral foot drop, hypotonia, ataxia, absence of all reflexes, and slow urination. This continued for a few months, when rapid improvement began and gradually terminated in complete recovery. It will be noted that the left side was principally affected, the sensory symptoms being confined to that side. The duration of the disease was one year and eight months.

145 WEST SEVENTY-SEVENTH STREET.

PATHOLOGICAL CHANGES OF THE PHARYNGEAL MUCOSA AN EARLY SYMPTOM PATHOGNOMONIC OF POLIOMYELITIS.

By M. NEUSTAEDTER, M. D., PH. D.,
New York,

Instructor in Neurology, New York University and Bellevue Hospital Medical College; Chief, Neurological Division, St. Mark's Hospital Dispensary.

It is true that we made great strides in uncovering the mysteries of this dreaded scourge poliomyelitis. We know now that it is an infectious and contagious disease, that dust carries the virus in a viable and active state, that the nasopharynx is the point of entry into our system, and from these facts and clinical data in epidemics we have learned a great deal of the manner of its dissemination. While the morphology of the virus and the method of its cultivation *in vitro* and the nature of its host are still deep mysteries, many important data about its character are available. The pathology of the affection is not any more obscure, but naturally the last word has not as yet been said.

Our difficulty lies mainly in the possibility of

early diagnosing the disease before the onset of the paralysis. The importance of this cannot be overestimated, since it may afford us a means of attempting to intercede in time to prevent a paralysis and possibly death. With all the enumeration of symptoms in various stages of the disease, with the proverbial "it may be this or that" and the "ifs and buts" accompanying them, we are positive of our diagnosis only when the paralysis appears, when it is too late to be of practical service. Many a physician will remember how his prestige suffered because he did not make the diagnosis early, and the consultant was fortunate to arrive just when a partial or complete paralysis appeared, while just one hour before on his visit there was no discoverable paralysis or even a weakness in the affected limb. In clinical as well as in experimental cases, we meet exactly with this condition. The paralysis comes at once, like a thunderbolt from a clear sky, after the fever has disappeared and a recovery is looked for; in other words, when it is least expected.

While the cytological findings of the cerebrospinal fluid, when positive, are a criterion for the disease quite early, before the paralysis sets in, a lumbar puncture cannot be resorted to in every case, especially in those where the onset is mild or obscured by gastrointestinal symptoms that are, as a rule, interpreted as cholera infantum by physician and parents.

In searching for a set of symptoms that would prove a criterion of this disease, we must have recourse to the pathology. This, we now recognize, is uniform throughout, presenting, like any other infectious process, degrees of intensities. In clinical as well as experimental cases we meet with an edema of the cord and brain, a circumvascular and circumcellular exudate, which extends from the pial circumvascular lymph spaces into the gray matter and into the spinal ganglia, and a hyperemia or the vessels of the brain and cord. Hemorrhages are also spoken of as pathognomonic of this disease, but, so far as my experiments show, it does not seem to be the case. In connection with these facts we must take into account the toxins which the infectious agent produces, that render the disease a constitutional one as well. We must also bear in mind that the point where the trouble starts is the nasopharynx, and that the patients, being mostly infants, swallow the nasopharyngeal discharges.

From these facts we may expect to get early in the prodromal stage fever as the first sign, accompanied sometimes with vomiting, with or without diarrhea. *Nasopharyngeal symptoms* are invariably present, at least in my fifty-two cases within the last two years I have noticed them without exception. Frequently we hear that the patient began to sneeze, or made attempts to sneeze, and the mother or a well meaning neighbor was sure it was a case of measles. Upon inspection, however, as physicians always point out, there is not that red, sore, and hyperemic throat, but a rather anemic, glistening, edematous condition of the pharyngeal mucosa, with a serous frothy transudate, quite analogous to the edematous swelling of the cord that we see upon autopsy. This condition I have no-

ticed to persist in the majority of the cases, even some weeks after the onset of the paralysis. Many laryngologists assured me that they had not met with a similar condition of the pharynx in any disease. I desire to lay stress upon this sign, as in my opinion pathognomonic of the disease, and taking it in conjunction with the other well known symptoms, we may, if corroborated by others, put the general practitioner in a position to diagnose the case early. With this sign present, it becomes imperative to make a lumbar puncture, and the cytological findings will at once clear up any doubts. A lymphocytosis, a positive reduction test with the Fehling's solution, and a positive globulin reaction in the cerebrospinal fluid, quite early in the prodromal stage of the disease, are in consonance with the above enumerated pathological findings.

Headache and pain ought to be, and as a rule are a constant accompaniment. The little infant cannot tell us of its headache, but he is giddy and drowsy, though not comatose, and the intellect is always clear. The older children, when affected, always complain of this characteristic giddiness and headache. We must bear in mind that we are dealing here with hyperemia, a congestion of the vessels, and an edema of the brain, but not with any augmentation of the cerebrospinal fluid, as is the case in meningitis. As a rule there is no abundance of the cerebrospinal fluid. In experimental cases, we know, that very often only a few drops of a gelatinous fluid are obtainable from the spinal canal before the onset of the paralysis. In my clinical and experimental experience I have not met with a case of a superabundance of cerebrospinal fluid; therefore no coma, no blurring of the senses.

It has been shown that the infiltration of the spinal ganglia, especially in the lumbar region, is always present in experimental cases as well. In my animals I found this infiltration persisting even in the abortive cases. This shows that there is, quite early, an affection of the posterior roots, a radiculitis, which would clinically manifest itself by pain in the extremities and along the spinal column, by hyperesthesia and exaggerated reflexes very early in the disease. The children are found with their extremities in a flexed position, and an attempt at extension or passive motion produces extreme pain, so much so that the patient cries when approached by the physician or nurse, as he is apprehensive. This pathological condition will, when very extensive, give rise to convulsions or simple twitching as the case may be. The patients frequently favor some extremity in particular, for there is the weak spot, and that extremity will become paralyzed.

To recapitulate, then, we meet in the prodromal stage with the following constant symptoms: Sudden onset with fever, headache, drowsiness, pain in extremities on passive motion and on pressure along the spinal column, sometimes gastrointestinal disturbances, the above described throat and nose symptoms, and the cytological findings in the cerebrospinal fluid.

The symptoms of the later stages are too well known to all of us and do not concern us in this paper. What I attempted to bring to the attention of the profession is a symptom complex which is

constantly met with in all cases, in greater or lesser severity, in direct proportion to the intensity of the invasion of the virus, which will enable the general practitioner, who is the one apt to meet these cases early, to make the diagnosis early, to the end that prophylactic, or perhaps at some future day, curative measures may be instituted and the patient saved from a physical infirmity that incapacitates him for life, or perhaps from death itself.

111 SECOND STREET.

THE CROTALIN TREATMENT OF EPILEPSY.*

Chemical Composition of Snake Venom. Its Possible Effect on Blood Coagulation. Report of Eight Cases.

BY RALPH H. SPANGLER, A. B., M. D.,
Philadelphia,

Chief of Medical Clinic, Methodist Episcopal Hospital.

In the NEW YORK MEDICAL JOURNAL for September 3, 1910, I published a preliminary report of Eleven Cases of Epilepsy Treated with Hypodermic Injections of Rattlesnake Venom (Crotalin). September 9, 1911, the same journal published a Tabulated Report of Thirty-six Cases which I had treated by the same method. Since first using the venom in the treatment of epilepsy (March, 1909), I have used it in 109 cases and given to these patients over 2,000 injections of the venom.

The following is a résumé of the results obtained in six of the eleven cases enumerated in my preliminary report, which I have been able to keep under observation up to the present time.

CASE I. Female, aged fourteen years. Had been subject to major epileptic attacks for six months before crotalin treatment was started. She has been entirely free from any form of epileptic manifestations for the past three years and two months.

CASE II. Male, thirty-two years of age. Had been subject to epilepsy for fourteen years when he came under my care, three years ago. At that time had from two to five major convulsions each week. He had not been able to work for six years. Treatments have been reduced to monthly intervals for the past year. He continues to have a major attack every three or four months, but physically and mentally he made such improvement that he can work regularly at his employment.

CASE III. Female, aged twenty-eight years. Had been a victim of epileptic attacks for eight years prior to starting the venom treatment. Three years and three months have elapsed since crotalin treatment was begun. She has had no injections for one year and has been free from epileptic seizures for twenty months.

CASE IV. Male, fifteen years of age. Had been subject to epileptic convulsions for three years when crotalin treatment was started three years ago. At this time he was averaging two or three major attacks a week. The injections in this case have been continued at two to three week intervals ever since they were started, and it has now been seventeen months since he had a convulsion.

CASE VIII. Male, fifteen years of age. Had been subject to epileptic seizures for six years when the venom treatment was started two and a half years ago. Injections have been continued once a month during the past year and he has had no manifestations of the disease for a period of two years and one month.

CASE X. Treatment by Dr. M. M. Kent, of Trenton, N. J. Male, aged twenty-eight years. Had been subject

*Read before the National Association for the Study of Epilepsy and the Care and Treatment of Epileptics, Vineland, N. J., June 3, 1912.

to epileptic attacks for ten years. Before crotalin treatment had been started he had been compelled to give up his business. Three years and three months have now passed since beginning the treatment, he has attended to his business regularly and has had no manifestation of any form of the affliction.

As to the technique used when giving an injection, the dose, site of injection, frequency of administration, and the local reaction, I refer you to my previous reports just mentioned.

At this time I take the opportunity to report somewhat in detail my experience with the use of the venom in eight typical cases of so called idiopathic or essential epilepsy, selected from my case records. These cases have been treated during the past year and they are not included in any of my previous reports.

CASE I. J. F., male; twenty-nine years old; single; occupation, bottler; referred by Dr. F. K. Brown.

Family history. Father died of alcoholic Bright's disease at twenty-eight years; mother, alcoholic, living at fifty-one. One brother died of consumption.

Previous personal history. Oldest of five children; birth, normal; breast fed; first teeth erupted at seven months; walked at one year; diphtheria at twelve years; used alcoholics freely from seventeenth to twenty-third year; always constipated.

Epileptic history. Subject to epileptic attacks for six years; without apparent cause had a major attack of epilepsy when twenty-three years of age. For the next eighteen months he averaged one major attack a month and then the attacks grew more frequent, with minor seizures during intervals. For the past two years he had from two to four major attacks a week, and for last six months, between major seizures, he was subject to transitory delusional states with some form of automatic action, such as wanderings.

The attacks usually came in the mornings while dressing. Minor attacks always preceded by a few hours the actual convulsions. No aura could be described. A cry always inaugurated the attack, followed by a fall when tonic and clonic convulsions developed. He frothed at the mouth, bit tongue, and occasionally voided urine. A sound sleep followed, and he awoke with a headache.

Effect of crotalin treatment. Under my care ten months; dose of venom ranged from grain 1/100 to 1/40. Had used bromides in some form for six years. These were gradually withdrawn when the venom injections were started, and entirely discontinued by the end of one month. The first week under crotalin treatment he had one major attack and daily seizures. After the second injection he had no more attacks until the third week when he had one attack of petit mal. He then went seven weeks before another minor seizure occurred. This was followed by an interval of thirteen weeks, during which time he was entirely free from attacks. The injections were given at weekly intervals and during ten months, with the exception of the first week, he has had but five minor attacks. There has been no further evidence of automatism and he has been attending to his work regularly.

CASE II. F. M., male, fifty-six years old, retired; referred by Dr. T. J. Byrne.

Family history. Mother and two sisters died of consumption; maternal aunt had paresis.

Previous personal history. Normal birth; breast fed; cut teeth and walked at about normal age; measles as a boy; dysentery at twenty-five years; used alcohol freely until forty-four years of age.

Epileptic history. Subject to epilepsy for twelve years. First attack occurred without evident cause at forty-three years of age; second attack eight months later; then they grew more frequent, recurring every two or three months. Under bromide treatment they were absent at one time for two years. Five years ago they became more frequent again, and for the past two years he had averaged one major attack every two or three weeks.

The attack. No aura; cry; fall; followed by tonic and clonic convulsions; frothed at mouth; bit tongue; went into a sleep and awoke with headache and, at times, nausea. No minor attacks.

Effect of crotalin treatment. Had been getting venom injections for ten months; weekly for first three months and two and three weeks apart since; dose from grain 1/100 to grain 1/50. After the second injection he had one major attack. None appeared since. He had had four minor seizures however without any sign of convulsions or following headache, during the ten months. There was one interval of fourteen weeks between these minor disturbances.

CASE III. J. L., male, nine years old; never went to school.

Family history. Father killed when patient was two months in utero; mother was highly nervous during the remainder of pregnancy. Brothers and sisters living and well. Family history negative as to epilepsy, insanity, and alcoholism.

Previous personal history. Patient sixth in order of birth; normal delivery; breast fed; had had none of the diseases of childhood.

Epileptic history. Spasms developed while he was cutting teeth at seven months. Spasms recurred at weekly intervals until one year old; then grew more severe in character and were diagnosed as epilepsy. At two years minor attacks began to appear between major seizures. First teeth erupted at fifteen months. Did not walk until three years of age and could utter but few words until six. At one time under heavy doses of bromides the attacks were absent for one month, but so much muscular weakness developed that he could not stand alone. The major attacks then began to appear in series. When he came under my care he was having a series of ten to fifteen major attacks in the course of twenty-four hours, two or three times a week, and the minor attacks continued during the intervals. He could not walk alone, and could utter but few articulate sounds.

The attacks. The attacks started with a scream; no aura; tonic and clonic convulsions, with frothing at the mouth, biting of tongue, and incontinence of urine and feces. Convulsions were followed by a period of sleep.

Effect of the crotalin treatment. Under treatment seven months with dose of venom from grain 1/200 to 1/50 at weekly intervals. After first month series of attacks ended, then for several months major attacks occurred at one to three week intervals. At present the boy walks and plays normally. His speech has developed rapidly. No minor seizures have been manifest for four months, and he has had one interval of nine weeks between the major attacks.

CASE IV. E. G., female, eleven years old; school girl. Family history entirely negative as to epilepsy, insanity, and alcoholism.

Previous personal history. Oldest of four children; tedious but normal birth; breast fed; cut teeth at usual age; walked at fourteen months; at eighteen months had two spasms, measles at seven years.

Epileptic history. First major epileptic convulsion at nine years of age (three years ago). Second attack one month later. Then under bromide treatment she went six months without attacks. Seizures returned then at monthly intervals for six months, then they grew more frequent, and for a year she never had gone longer than two weeks between attacks and, as a rule, every five to eight days, had a series of six or seven major attacks during the twenty-four hours.

The attack. Gastric aura not constant; no cry; frothed at mouth; did not bite tongue; tonic followed by clonic convulsion lasting one to three minutes, followed by a sleep and headache. No minor attacks.

Effect of crotalin treatment. Received venom injections, grain 1/100 to 1/50, at weekly intervals for seven months. The first week she had a series of three modified major attacks in twenty-four hours. Since then she had three single attacks over a period of nearly seven months, the longest interval between attacks being fourteen weeks. She attends school regularly, and is a fine specimen of a twelve year old girl.

CASE V. E. M., male, nine years old; school boy; referred by Dr. S. G. Sheppard.

Family history. Father well at forty years; mother an epileptic; her first attack while patient was in utero. Three sisters and two brothers all died with convulsions before they were six months old; two brothers older than patient alive and well; one sister younger, in good health.

Previous personal history. Normal birth; breast fed; did not cut teeth until one year old; walked at eighteen months; had pneumonia at three years and diphtheria at four years. At six and one half years began acting "silly" and was very nervous with mild choreiform movements. No spasms when a baby.

Epileptic history. Attacks of petit mal began at seven years, occurring at irregular intervals of two or three weeks. At eight years had first attack of grand mal (one year before starting venom treatment). For six months before coming under my care major attacks occurred at an average of one in five to seven days. No minor attacks evident since major started.

The attack. Headaches for twenty-four hours; gastric aura always preceded the cry with which an attack was ushered in; tonic followed by clonic convulsions lasting about two minutes; frothing at mouth; bit tongue only occasionally; incontinence of urine about every other attack; convulsion, followed by a sound sleep; upon awakening always had headache, and frequently confusion with some symptoms of automatism.

Result of crotalin treatment. Patient has been under my care for seven months. The dose of venom ranged from grain 1/200 to 1/100 and was repeated weekly for three months; since that time at two week intervals. No attacks, major or minor, have occurred since first injection was given.

CASE VI. S. Z., male, twenty-one years of age; musician.

Family history. Maternal aunt had epilepsy; paternal uncle epileptic; seven brothers and sisters; no epilepsy or alcoholism in immediate family.

Previous personal history. Second of nine children; normal noninstrumental birth; breast fed; cut teeth late; walked at fifteen months; measles at eight months; at two and one half years, while cutting teeth had spasms; well until fifteen years of age.

Epileptic history. At fifteen years had a convulsion which was diagnosed as epilepsy; second attack eighteen months later; after that, they recurred at one or two week intervals for a year, and the longest interval between major attacks for the three years before taking venom treatment was three weeks under bromides. When patient came under my care he would frequently have three or four major attacks in twenty-four hours. Occasionally the attacks would occur daily for a week, and then be absent for four or five days. Between major attacks for the last year he had been having "wandering spells"—automatism.

The attacks. Gastric aura rather constant; had turns to right and muscles of neck went into tonic spasm; then would follow general tonic and clonic convulsion; frothed at mouth, rarely bit tongue, occasionally voided urine; attack followed by sound sleep and on waking confusion and evidence of automatism.

Crotalin treatment and its result. Bromides were stopped at once. For first four months slight major attacks continued at irregular intervals of a few days to two weeks (the longest interval); minor attacks continued, with at times, only daily intervals; one interval of nine weeks between any form of seizures. The dose of venom in this case ranged from grain 1/150 to grain 1/25. Patient had been under treatment seven months. During the last three months there had been no major and only six minor attacks. There was recently an interval of nine weeks between any form of seizures.

CASE VII. E. H., male, twenty-one years old; errand boy.

Family history. Parents living and well; maternal grandmother had epilepsy; brother died at ten months with convulsions; five brothers and two sisters living and well.

Previous personal history. Fourth in family of nine; spontaneous birth; breast fed; cut teeth young; walked at one year; scarlet fever at fourteen years.

Epileptic history. Subject to epilepsy for eight years; first attack when thirteen years of age while in school; severe attack of scarlet fever at fourteen years, after which attacks became much more frequent and severe; longest interval between major attacks was one month under bromides in hospital. Has had twelve major attacks in twenty-four hours. For three years before starting venom treatment had never fewer than three major

attacks in twenty-four hours. Patient had two attacks in my office the first day I examined him.

The attack. Could always foretell an attack, but could not explain the nature of aura. The cry was followed by tonic and clonic convulsion, frothing at mouth, and biting of tongue. Went to sleep and awoke with headache. No minor attacks.

Effect of crotalin treatment. Under venom treatment five months with weekly injections; started with dose of grain 1/100 and increased to grain 1/50; had one major attack after the first injection and then no attacks for twelve weeks, when a minor seizure occurred. Then there was an interval of six weeks with no attack, when two momentary periods of unconsciousness developed at a ball game. Twice, therefore, he has had mild expressions of his affliction in five months.

CASE VIII. M. G., female, sixteen years old; school girl; referred by Doctor Delo.

Family history. Negative; seven brothers and sisters living and well.

Previous personal history. Fifth of eight children; normal spontaneous birth; spasms at ten months, while cutting teeth; which continued until three years old and then stopped; measles and whooping cough between three and nine years (while convulsions were absent); menstruation established at thirteen years, but has never been regular.

Epileptic history. Subject to attacks for three years before starting treatment; two months before menstruation was established at thirteen, had a convulsion which was diagnosed as epilepsy. For the next year major attacks occurred every three or four weeks; after February, 1910, they became more frequent, and for the last year she never went a week without two or three major attacks; several times series of attacks occurred; during the last six months, minor seizures developed between the major attacks, in which she would have lapses of memory and symptoms of automatism.

The attacks. Preceded by no aura, but start with a cry and a tonic spasm of right hand, followed with tonic and clonic convulsions of the whole body; patient bit tongue, frothed at mouth, and occasionally had incontinence of urine. The attacks were followed by sleep and headache on awakening.

Effect of crotalin treatment. Patient received venom injections at weekly intervals for four months. Bromides were entirely withdrawn by end of first month. No convulsions occurred since starting the crotalin. The automatic actions ceased, but she continued to have minor seizures, one in ten days to three weeks. Menstruation was regular for the last three periods.

THE SOLUTION.

The crotalin solution which I have used is made from the dried, yellowish, crystalline scales of the evaporated venom of *Crotalus horridus*. The venom is obtained from the living reptile and dried between glass plates, under a bell jar, in the sun. A solution is then made by dissolving the crystals in glycerin and sterile water, to which a few drops of tricresol is added as a preservative. The solution is then put in sterilized ampoules containing one c. c. of whatever strength desired.

THE CHEMISTRY.

The chemical composition of snake venom is not sufficiently known. It contains albuminous substance. Newman (1) reports as follows:

Regarding the chemical composition of snake venom, this much is certain, that it belongs to the albuminoids and that it consists of two principal compounds, one of which must be counted among the peptones while the other shows great similarity to globulin. Each one of these again has its own peculiarities and qualities which compel us to look upon them as entirely different bodies, with their own characteristics and to be considered separately.

Both are comparatively easily obtained from snake venom, by placing venom dissolved in a little distilled water, into a cylinder, the lower end of which is covered

with animal bladder and stands in another vessel filled with water. The peptone passes through the porous membrane, while the globulin remains behind as a white mass which can be easily dissolved in a little salt water. By mixing the two substances the original poison can be produced again.

In testing the effect of the separate constituents upon the animal or human body, we find the following: The peptone poison causes at the point of the bite, i. e., of the injection, only slight alterations; but so much the more profound is its effect upon the entire nervous system. From the point of injection to the central nervous system the smaller as well as the larger nerve cords are attacked by paralysis which often spreads with horrible rapidity, due to the fact that a terrible loss of strength sets in, with death as a consequence. The nerve centres which influence respiration are especially affected, so that animals treated with peptone poison perish with all the indications of respiratory paralysis.

The second constituent of snake venom, globulin poison, produces an entirely different effect. While among normal animals the bloodvessels are entirely impermeable to the blood fluid and the latter coagulates immediately upon coming in contact with the air, the globulin snake poison instantly destroys these characteristic qualities, even when but the minutest quantity comes in contact with the blood, as at the point of bite, or injection; and this effect takes place, not only at the wound, but also for some distance around it, in serious cases throughout the entire body, so that it appears as if the man or the animal had bled to death internally. In the brain, the lungs, and the abdominal cavity, everywhere the blood passes through the vascular walls into the surrounding membranes and everywhere it has lost its power to coagulate.

ACTION OF THE VENOM ON COAGULABILITY OF THE BLOOD.

Only partial success has attended the attempts to demonstrate the nature of the changes produced by venoms on the blood. Mitchell and Reichert (2) found that venoms "render the blood incoagulable." Stephens and Myers (3), in studying the hemolytic action of venom, found that when cobra venom is added to shed blood *in vitro*, a retardation of coagulation takes place.

Physalix (4) studied the coagulability of the blood under the influence of various venoms, and came to the conclusion that "the conditions that have to do with coagulability of the blood in venom poisoning are numerous and complex, and that we are not yet able to explain the phenomena.

Dr. John Turner (5) has shown that: (a) The average rate of coagulation of the blood is greater in severe cases of epilepsy; (b) the rate is quickened during the period that the patient is having fits (serial epilepsy); (c) there is a further quickening of the coagulation rate up to twenty-four hours before a seizure; (d) from twenty-four to forty-eight hours after a fit, there is a rebound and retardation in the rate of blood coagulation.

Dr. William Alden Turner (6) says it has been conclusively proved to his mind that rapid coagulability of the blood occurs during the twenty-four hours preceding a major seizure of epilepsy or a series of attacks. C. Besta (7), on the other hand, reports a diminished rate of coagulation—the fits apparently exerting no influence upon the rate of coagulation.

It is obvious that all fits are not associated with an increased rate of blood coagulation. The special type of the disease in which coagulability is increased has not been definitely determined. For the past three months I have been studying the coagulability of the blood in eighteen cases of epilepsy

with the use of a Boggs coagulometer. At the meeting of the Pennsylvania State Medical Society at Scranton, Pa., on September 25th, I shall report my observations in detail. My experience up to this time largely confirms the conclusion of Dr. John Turner, mentioned above. Moreover, the effect of the venom injections, if given over a period of time, seems to be permanently to decrease the rate of coagulability of the blood.

CONCLUSIONS.

1. The "venom treatment" is indicated in many of the essential cases of epilepsy.

2. Not only are the virulence and number of epileptic fits favorably influenced by the crotoalin treatment, but the excitability of the nervous system is modified and the general health of the patients, their mental faculties, and metabolism in every respect are considerably improved.

3. The quality of the blood, and possibly its chemical composition seem to be affected by the injection of the venom. As to the exact effect it has on the coagulability of the blood, further observation is necessary.

4. There is no danger in the use of crotoalin as long as the necessary aseptic precautions are taken in its administration, and the treatment is carried out with careful observation of its effect on the patient.

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2035 CHESTNUT STREET.

DRAINAGE OF ACUTE INFECTIOUS LESIONS OF THE ABDOMINAL CAVITY.*

By J. W. KENNEDY, M. D.,
Philadelphia.

(From the clinic of the Joseph Price Hospital.)

We are unable to discuss drainage of intra-abdominal lesions without first defining our position as to the extent to which our toilets of these conditions must be carried, and also the extent of the surgery in the particular pathological entity.

Thus I define early my unpopular views by the statement, that I am entirely and enthusiastically opposed to the mis-called modern methods of treating septic conditions of the abdominal viscera, which I assume to be a quarter of a century behind modern surgical privileges. The so called physiological era in the surgery of septic lesions of the abdomen, which is the popular view of the American profession, is opposed by the pathological era, or radical surgery.

The greatest advocate of the radical treatment of pus forming lesions of the abdominal cavity was the late Joseph Price. I feel nothing more unfortunate could have happened to the surgical progress in this line of work than the death of Doctor

*Read before the Rochester Pathological Society, March 21, 1912

Price. It is unfortunate to be able to relate that in America, during the evening of Lord Lister's life, he could have witnessed numerous deaths in the educational centres of our country, from neglected acute infectious lesions—the surgical hand being withheld from fear of the so called "spreading the peritonitis." We have retrograded to just where Lord Lister started us. This is not speaking figuratively. The surgeon who waits a single hour for a diffuse or general peritonitis to localize, has taken the first step toward that antiquated era in which we operated only when the abdominal walls were bursting from accumulated pus. I have been called upon to witness this murderous neglect in my own city and listen to a feeble discussion based upon a pathological hypothesis, which I have several thousand times seen exploited from every possible viewpoint. In this work Doctor Price was the surgical Lincoln of the hour, and I view his death with the greatest apprehension and profound regret. I have received many letters asking me for an explanation or a discussion of those points or factors which gave Doctor Price his brilliant results; attempts at which were failures in the hands of others. I shall try to bring out some of these points in this paper.

It is conceded that the radical surgery which has for its basis the invariable removal of the distal infecting source, is the surgery that all operators would like to do, as it is not followed by multiple operations and postoperative complications. The physiological surgeons have abandoned the radical toilets and removal of the distal infecting source, on account of the high primary mortality and the fear of increasing peritoneal absorption. The following points, which are dominant factors in the physiological era, I condemn in detail.

Attempts to classify any peritonitis into operative or nonoperative stages is a failure; first, because of one's inability to judge the extent of a peritonitis or that potential infection which will early become a peritonitis; second, any attempt at classification of differential operative stages moves all infectious conditions toward a later operative hour, with the resultant high mortality. It breeds in the general profession that insanity of uncertainty which conceives destructive pathology. It also gives the general profession that most dangerous whiphandle, procrastination, resulting in late operative measures. You cannot overestimate the importance of this one point, and, at this hour, operative delays can with all propriety be laid at the specialist's door. He is entirely responsible for the peritonitides which are more frequently confronting him and are a product of his own teaching. We have established the fact that a peritonitis in any stage can be most successfully dealt with by our radical toilets and drainage; that inflammatory barriers should be looked upon as a part of the pathological condition, in that they are adhesions producing complete or partial bowel obstruction, or are inclosing distal abscesses. Now, this puts us in a position to say, that each and every patient with a peritonitis should go on the table at the first available hour, irrespective of the stage of the peritonitis. Such advice places you in a dominant position with the profession.

You can point out the errors from waiting until the peritonitis occurred, and by your immediate operation you make the strongest plea for earlier work. I have said in a previous publication that if we operated at the first hour in any stage of a peritonitis, making the toilet proportionate to the extent of the peritonitis, and in each instance offering an earnest plea for earlier work, we could blot out the mortality of the acute infectious conditions of the abdominal viscera.

You cannot impressively point out the errors of the tardy diagnostician by further waiting yourself for that indefinite subsidence of acute symptoms. The condition of affairs at present is most damnable. Operators have failed in their attempts to do the radical toilets which characterize the pathological era, first, because they were not truly radical toilets, the beginning of which demands their completion.

You cannot eviscerate nine feet of bowel, permitting one foot to remain fixed, and expect anything but bad results. You may pass an irrigator to some dependent point in the abdominal cavity, and then pass in gallons of saline solution, and yet not truly irrigate one one hundredth of the visceral area—and so I could go on and point out an indefinite number of shortcomings which have made radical surgery and toilets failures in the hands of those who have attempted this work.

I find in my discussion with operators that they have not the least conception of what a typical Joseph Price toilet is. Before we can inherit the full surgical privileges of the present hour, we must be cognizant of the fact that a peritonitis is *not* the only complication which may follow the acute infectious lesions of the abdominal viscera, and also that the dangers of an existing peritonitis are not entirely due to the absorption of bacteria and toxins which takes place from the endothelial membrane. The fact is, the physiological era in surgery was born to prevent peritoneal absorption of toxins and has ignored all other possible sources of toxemia.

Physiological surgeons put the peritonitic patient in the Fowler position—they may or may not operate at the presenting hour—if operation is decided upon the infecting source may or may not be removed, depending upon the accessibility of the particular lesion—adhesions are not broken for fear of spreading infection—tubal drainage is used which may or may not come within immediate contact with the lesion to be drained, distention or bowel obstruction is necessarily ignored, and a perforated bowel may or may not be closed, depending upon its accessibility. The operator who does not always define and remove a gangrenous appendix, is certainly not always closing a bowel perforation.

With the exception of the administration of saline solution by the bowel, we condemn every other principle on which the present popular idea of treating peritonitis is established.

The indefinite factors, the may or may nots, should have no place in the surgery of this rapidly fatal condition, and are enough to condemn it. I should not attempt to condemn this popular surgical view if it were not that I have several thousand

times seen every principle upon which it is established blown to atoms.

First, the Fowler position; without citing physiological experiments which have been made, we have demonstrated by our surgery that there is evidently very little absorption of toxins in the already inflamed peritoneum and that the difference of absorption between the upper and lower abdomen must be very small if any, because in our very worst cases, those with extensive peritonitis and distention (demonstrated as such), are put in the antiFowler or Trendelenburg position, so as to give the nerve centres more blood and thus stimulate the shocked and badly infected patient. We must remember that in the critically ill patients, the heart muscle is also a poorly nourished organ and the patient should be put in that position which favors circulation.

We do not believe in the gravitation of infectious fluids through inflammatory barriers produced by adhesions. The great number of secondary abscesses, which have been accumulations between the adherent viscera necessitating secondary operations, are proof that the infectious fluids did not gravitate to the pelvis while the patient was in the Fowler position. I have seen a number of these sleepless and fatigued patients taken out of the Fowler position, turned over on the right side, with thighs flexed, and then go fast asleep from eight to ten hours. Fatigue must be relieved early or we lose these patients. If the drainage from the most dependent point means so much to the advocates of the Fowler position, you will find the incision in the right groin, with the patient turned well over on the right side, with the relaxation of the abdominal muscles incident to the flexed thighs, gives you about the same point for drainage and is the child's natural position of flexion and rest.

The next point in the modern view of peritonitis is, that you may or may not operate at the present hour. I have exhausted all the literature attainable to find some plausible excuse why a patient with a peritonitis and intraabdominal pus should still be asked to exercise his patience and wait for an indefinite something to happen. Be as lenient as I can, I find no other reason than that the operator is asking the practitioner to sign his death certificates.

When the surgeon begins to pick his cases in the peritonitic field, his days of usefulness are over. Neither Metchnikoff, Ehrlich, nor Wright, in his magnificent work, has withheld the surgical hand for intraabdominal pus in any of his discussions, and Adams, in his admirable monograph on inflammation, has not asked us to place the virtues of the so called period of resistance before the surgical relief of intraabdominal pus. The very hour the surgeon raises his voice against the relief of intraabdominal pus, or encourages the delay of those conditions which ultimately suppurate or perforate an abdominal viscus, he throws to the winds the cardinal principles upon which successful surgery stands.

When I have seen these peritonitic patients in all stages and varieties of infection immediately put on the table, with the most brilliant results, and I know the calamities of delay and am familiar with

what such teaching must ultimately bring upon us, I feel a good deal as Harvey must have felt when he prayed to the good Lord to give him divine strength to teach the true nature of the circulation.

View every peritonitic patient with the probability of a perforated viscus with the resultant complications of such a condition. It is natural for us to drift along lines of least resistance and indulge ourselves in the illusion of hope, so we often turn from the painful truth. I would always escape from the surgical possibilities of a general peritonitis, if I could find a resting place for my conscience. When I see these poor fellows sitting up in bed without even a stab wound in the right groin, I feel how much better off they would be, if they had a raking shot from a forty-five calibre Colt's, perforating the head of the cecum.

This brings us to the discussion of adhesions and inflammatory barriers which we are taught not to molest. To say that we vigorously attack all adhesions and inflammatory barriers, is true; to say that by such radical surgery we have no respect for the involved peritoneum, is false. You cannot discuss the pathology of peritonitis from a single standpoint, namely, absorption of toxins from the peritoneal membrane, which is the factor *per se* on which the physiological era in the treatment of intraabdominal affections has been established.

We view adhesions and inflammatory membranes as a wolf in sheep's clothing, as they quickly become complications which are of more pathological import than the existing peritonitis. These inflammatory walls have little physiological integrity and quickly produce a bowel obstruction or the formation of a distal abscess. These pathological walls, which surround a probably perforated viscus, must be viewed as a first aid to the injured, and have not sufficient physiological integrity to care for that perforated organ.

I have just as much respect for Nature's laws of protection and means of compensation as any one, but I am too familiar with the brilliant results of radical toilets to take for granted the well being of the peritoneal cavity which is distal to the so called protective wall. The pendulum has swung too far toward the dangers of peritoneal absorption in the surgery of peritonitis; and while you wait for the subsidence of acute symptoms and gravitation of infectious fluids toward a poorly drained pelvis, you are flanked by bowel obstruction, formation of distal or metastatic abscess, thrombosis, and all those complications which are incident to incomplete or delayed work. Our operative views are based upon the following:

We ask you to view the peritonitic membrane as in an early state of repair, with all its powers of absorption greatly diminished, and we ask you to direct your surgery toward the primary cause of the infection and the immediate relief of all its complications. The following attempt at description of our operative technique and radical toilets, like all didactic teaching, is far short of being satisfactory.

In the first place, throw away your gloves, throw away your retractors, throw away nine tenths of

your instruments, and do not use the Trendelenburg position. In other words, we get rid of all possible sources of traumatism. After all, we are more mindful of, and respectful to the peritoneum, than we have been given credit for.

This is no place to discuss the traumatism incident to rubber gloves, but we feel that the gloved hand is responsible for much of the incomplete work of the present hour. For the purpose of discussion, suppose the appendix has been the primary infecting source; if the peritonitis is general, with marked distention, make the incision in the median line, so that the toilet of the peritoneal cavity may be more general. If there has been some localization of symptoms, we make the incision at the outer edge of the rectus muscle, incise the anterior sheath of the rectus muscle, push the longitudinal fibres toward the median line, and then incise the posterior sheath. By this incision, you cut no muscular fibres and it is not necessary to put on a hemostat. You will have a very small percentage of hernias following this incision, even though a stitch is not used in these drainage cases. If there has been a formation of an abscess and the incision enters the abdominal cavity to the median or clean side of the inflammatory wall, the general abdominal viscera should be walled off with gauze from the infected area before any manipulation is done.

Should the incision enter the abdominal cavity in the infected area, please do not make that gross mistake of attempting to pass gauze towels through or over the infected area, with the idea of protecting the general abdominal cavity. Whether you are operating for a local, diffuse, or general peritonitis which has been occasioned by a perforated appendix, begin your toilet with the first section of viscera which comes in contact with the examining fingers. In other words, for an instant forget the probable source of infection. Do not work through infection to reach the primary source. You are dealing with terraced pathology. Take care of the layers anatomically as you come to them. The house is built from foundation to roof. In our surgery we begin with the roof, and end at the foundation.

The great amount of traumatism incident to an attempt immediately to reach the appendix, can be minimized by first taking care of that pathological structure which is the most accessible. This is the foundation of our manipulation in cases with extensive adhesions. The omentum is first taken care of by breaking all adhesions. Make slight traction on the structure in order to define its fixed point, and then break adhesions by expression, or pressure with the finger. You lift the adherent viscera from their fixed points by insinuating your finger between the adjacent structures. Never break adhesions by traction upon the viscera.

The shock incident to the traction on the mesentery, is profound. After the omentum has been eviscerated, cleansed, and gangrenous portions are removed, begin further evisceration with any loop of large or small bowel which first presents. Travel in continuity of structure as far as the peritonitic bowel extends. Maybe the evisceration has traveled toward the stomach, if so, good and well.

Now begin again where you first started and eviscerate the bowel toward the ileocecal junction. The colon is likewise treated, but obviously evisceration cannot be so thoroughly done. Every adhesion is broken, both sides of the mesentery are exposed; necessarily, all complete or partial bowel obstructions are released. The evisceration is done under a stream of hot saline solution, and the inflammatory flakes of lymph are removed by a small gauze sponge.

If these adherent flakes of lymph require undue violence, let them be. The manner in which this evisceration is done and his method of drainage, were the secret of Doctor Price's phenomenal success in pus work.

Distended bowel is never returned into the abdominal cavity. Always puncture and drain the bowel of its infected fluid and gas. We have often opened both large and small bowel in three or four places, and in the very worst conditions we stitch the distal opening to the parietes, to establish a fistulous drain from the bowel. The relaxed bowel incident to the puncture and escape of gas, early rewards you by copious bowel movements. That intestinal drainage we all welcome and it again proves our position, that all adhesions must be released.

It is not necessary to discuss how much greater is our relief of intraabdominal tension, than by the method of the operator who ignores distended bowel and relies upon the abdominal incision and drainage tube. It makes little difference whether the distention is due to mechanical obstruction from adhesions or is incident to paresis occasioned by the toxemia acting in its several possible ways. The fact remains that the distended bowel has the same potential elements of toxic absorption that the strangulated hernia has, and must be viewed as a pathological entity and not as a symptom or sign. It is our view, that in a patient with general peritonitis with distention, the final and fatal dose of toxemia often comes from the absorption of toxins and bacteria from the mucous membrane of the bowel, or a retroperitoneal infection, and our surgery practically proves our position. The physiological surgeon has completely lost sight of and ignored these sources of infection.

While the bowel is eviscerated and has received its toilet, the abdominal cavity can then be best irrigated with hot salt solution. Any irrigation of the abdominal cavity is necessarily a very local one unless you eviscerate or manipulate the viscera during your irrigation. Most irrigations simply appease the conscience.

The irrigation should be done by a tube of at least one half inch in diameter, with good sized perforations, which are borne obliquely through the wall of the irrigator, thus permitting the solution to spout up with considerable force, carrying inflammatory debris and blood clots along with it. The irrigator and your two big fingers, which control the viscera, make a trivalve speculum and permit the solution to come from the cavity with a gush. The ordinary kitchen funnel, two feet of hose, and the hard rubber irrigating tube, ten inches long and a half inch in diameter, the tube

perforated as above indicated, form the best apparatus for irrigation.

The profession is not using saline solution sufficiently warm. We are using it at a temperature of 120° F., which you will find is about as hot as the hand can stand. In those cases in which I have apprehended burning the patient, I have obtained the best results. It is a wonderful stimulant to the shocked patient and has its greatest virtue by early stimulating peristaltic action of the paretic bowel, which produces early evacuations. I have described considerably the technique and toilet and purposely have said nothing about the removal of the appendix, for the reason that I wish to emphasize this point.

When operating in the presence of a general peritonitis, having its origin with a perforated appendix, do not rush madly for the appendix and overlook and work in the midst of extensive pathological conditions which are occasioned by the perforated organ, but meet the conditions with your surgical toilet as you come to them. We view the gangrenous appendix as a perforated bowel, which demands its removal in every instance by the stumpless method.

It must be apparent from my discussion that I view the dangers of a peritonitis, not altogether from absorption of toxins from an endothelial membrane, which I feel is greatly lessened by the condition *per se*, but I fear the toxemia occasioned by the partial and complete bowel obstructions and the retroperitoneal infections, lymphangitis, thrombosis, etc. If you will please review the severity of the different intraabdominal infections, you will find that those which take more nearly the form of a peritonitis are accompanied by the least mortality, and if you review those conditions whose type of infection is not truly a peritonitis, you are appalled by their high mortality. For instance, the inflamed appendix in the retrocecal position is the most fatal form of appendicitis and the patient dies from a retroperitoneal infection or lymphangitis, and there may be no evidence of a peritonitis. Again, the very high mortality of the postabortive and puerperal infections is known to the entire profession, and is most truly a lymphangitis or retroperitoneal infection of the deeper structure. In the infected uterus, with a deformed pelvis, necessitating Cesarean section, it is not the peritonitis which gives the high mortality, but the lymphangitis or infection of the circumuterine structures; therefore, the retroperitoneal section in these infected labors has not lessened the mortality to any satisfactory degree. The big infected sigmoid from an unclean hemorrhoidal operation is another example of infection of the deeper structure, and is not a peritonitis. All these conditions are accompanied by a high mortality, yet it cannot be said that any of them is truly a peritonitis. These are all strong arguments that you cannot permit the viscera to be macerated in pus without getting a toxemia from infection in continuity of their structure.

Another strong argument for our complete toilet is, that in those conditions where we are not able to make one, the mortality is excessively high. All the retroperitoneal infections are little acces-

sible to toilet or good drainage, and the death rate is appalling. Please remember in those so called peritonitic patients there are other avenues of absorption beside the endothelial membrane, and your surgery must meet the condition.

This brings us to the discussion of drainage, which I have not been able to take up until I had discussed sufficient toilet of the peritonitis and its complications, so as to be able to establish a continuity of drainage between the infected area to be drained and the outside world.

The physiological surgeon who does not break adhesions, must often find that his drainage tube is not within several inches of the infecting source. In fact, in a good number of instances, he cannot know for what he has operated, as he does not define his primary lesion. Has he operated for a ruptured appendix, a ruptured gallbladder, or a pyosalpinx, any one of which can give you a right sided column of pus from the coccyx to the gallbladder?

The greatest calamity which has happened to the surgery of intraabdominal pus and those extensively infected areas we experience in diffuse and general peritonitis, is the abandonment of gauze as a drain and the substitution of a tubal drainage. The truth is, that the frailty of the modern toilet has made it necessary to abandon the gauze cofferdam for tubal drainage, as it is impossible to insert a cofferdam until you have removed the pathological lesion and broken all adhesions.

We contend that every adhesion broken, is drainage; each time the finger is passed between two adherent sections of viscera, is drainage; every gangrenous structure removed, is drainage; and the final removal of that pathological structure which is the distal infecting source, is the foundation of drainage. Therefore, you cannot effectually drain until you have made such a toilet.

I have not time to refute the statement that gauze is not a drain after the first few hours. Such contention has killed a good many thousand patients. In these badly infected patients we use nothing but the cofferdam of gauze and do not put a stitch in the abdominal walls. They are truly open treatments. We claim more than simple drainage for these cofferdams of gauze; they have a mechanical function.

Suppose you are operating for a general peritonitis from a perforated appendix with the usual filthy pelvis and right iliac region; the foregoing toilet of the viscera having been made, the viscera being held out of the pelvis by the back of the left hand, begin the insertion of the cofferdam against the sigmoid, passing each strip of gauze, with a long dressing forceps, to the most dependent point of the pelvis. These strips of gauze, two inches wide and of four or five thicknesses, are packed one against the other until you have constructed a solid wall across the pelvis and around the head of the cecum. These strips of gauze are not passed as a number of flying buttresses to supposed infected or dependent points of the abdominal cavity, but construct a solid wall which does not permit the viscera to prolapse between the gauze ropes and produce bowel obstruction.

It must be apparent that this solid wall of gauze

filling the pelvis, has a very important mechanical function, in preventing the half paralyzed bowel from prolapsing into the infected pelvis and producing bowel obstruction. Again, it has another mechanical function. It elevates the most badly infected bowel, and thus aids circulation of this markedly congested intestine. The most devitalized portions of the viscera come in immediate contact with this enormous surface of gauze, which affords complete drainage and takes care of any perforation which may occur.

In every instance you must establish a continuity of drainage from the infecting source through the abdominal incision. How can you expect a drainage tube, inserted between the head of the cecum and the right parietes, to drain a retrocecal appendix, or the appendix of the ileocecal fossa; the rubber tube has no magnetic power. Any means of drainage is necessarily a very local one, but the cofferdam has one hundred times more badly infected viscera in immediate contact than is possible for the tube to have.

If operators insist upon using tubal drainage, leave out all sutures in abdominal wall, and the patients will do better. They will find the tube is of very little use.

Care of the drainage is most important. These cofferdams are not touched until the fifth day. Only the superficial dressings are changed as often as they become saturated. Formerly, we began the removal of some of the drains after forty-eight hours, but abandoned this method, as at that early hour there would be considerable hemorrhage and a fresh absorbing wound was made in the midst of infection. By the end of the fifth day there is a natural cofferdam established by the viscera, which prevents absorption of the slight oozing when the cofferdam is removed. The drain can be much more easily removed on this later day.

In removing the cofferdam before the last piece of gauze is removed with the long dressing forceps, pass a fresh piece of gauze to the dependent point, permitting the remaining strand of gauze to act as a guide, which leads to the dependent point for the fresh drain. Hold the freshly inserted drain with the dressing forceps while the old strand of gauze is removed. This last drain is permitted to remain forty-eight hours, when it is taken out and no more drainage is placed. The incision is strapped up as tightly as possible. It will probably be necessary, if the incision is large, to put on an adhesive strap over the upper angle of the incision when the cofferdam is removed.

It seems almost impossible to keep men from continuing to insert drains to an indefinite date. The rude manipulation from such an attempt to insert drains produces a hemorrhage each time in the midst of an infected area, with the resultant absorption of infectious products. I have in mind two deaths which followed this forbidden tampering with drainage. By the end of the seventh day, when the second drain is removed, there has been a fistulous opening established, which will take care of the slight amount of drainage.

I cannot here discuss the pathology of pyosalpinx and the puerperal infections of the uterus and its appendages, and can but refer to their surgery

and drainage. In no case do we puncture the vaginal fornix for a pyosalpinx and look upon it as a most incomplete and dismal swamp operation. The same toilet is made in these conditions, as that referred to in the foregoing discussion on peritonitis. The tubes and ovaries are always removed, and all adhesions broken in those conditions which are probably of gonorrheal origin or any other variety of infection where there has been tubal inclusion or formation of tuboovarian abscess. A very large percentage of these conditions can be closed without any drainage and give practically a zero mortality.

Since the incomplete work of the physiological surgeon has dominated the profession, we necessarily see a larger number of these aggravated cases, in which there is a consolidated condition of the viscera from above the umbilicus to the coccyx. I call them the patients with a frozen pelvis, and they present altogether the most difficult surgery which confronts the profession. It is a positive disgrace to educational centres that such a condition should be permitted to reach so profound a stage of neglect.

Many of these patients receive the initial infection a quarter of a century before we see them, and have run the professional gauntlet for a number of years. This type of patient usually consults the surgeon for an acute peritonitis due to leakage or rupture of the tuboovarian abscess; therefore, we are dealing with an acute peritonitis which has been ingrafted upon a solid column of pathological material from eight to twelve inches in thickness; the surgical treatment of which is nothing short of a prize fight to both operator and patient.

I said, earlier in my discussion, to throw away nine tenths of your instruments; now I say throw away the other tenth. You cannot even begin the enucleations of these specimens of pathology, unless you have educated the bare hand to deal with adhesions. Begin again with the pathological roof and remove stratified or terraced layers of viscera as you come to them. The method of so doing I have discussed. First the omentum, then probably a layer of small bowel, passing on toward the pelvis, you may find the sigmoid and cecum bound strongly together and horseshoed posteriorly to the uterus, or even more likely, the big, redundant, and much thickened sigmoid entirely covers the tuboovarian abscess and uterus. This is often so and is the structure most in danger of injury during the enucleation. The secret in the manipulation and enucleation in all of these sad examples of neglect, is to seek a point of cleavage with the two fingers and travel in the line of least resistance, so long as there is an adhesion to break. Do not dance around and do your work in sections. Extensive cofferdam drainage is inserted in all of these cases.

A word about the drainage of puerperal infections. This is the type of infection which comes further from being a peritonitis and is more truly a retroperitoneal infection or lymphangitis, is accompanied by a high mortality, and is the least amenable to surgery, because there is not a pathological entity which we can remove and the condition is not so accessible to drainage. This form

of infection does not stand amputating surgery. If there has been occlusion of the tubes and formation of abscess, you will get the best results by removal of the tuboovarian abscess, followed by a toilet and extensive gauze drains.

In the acute puerperal infection, which is characterized by the big, black, leaking tubes, without any occlusion of the fimbriated extremity and where there is extensive lymphangitis of the uterine and circumuterine structures, we get the best results from hot irrigation of the pelvis and placing the uterus, tubes, ovaries, and broad ligament in a mitt of gauze, entirely surrounding with our gauze pack both anteriorly and posteriorly the broad ligaments. This extensive drain keeps the intestine from the pelvis, prevents bowel obstruction, and also keeps the intestines from the most infected area. There has been no amputating surgery to open the lymph channel and thus increase absorption. Even should you remove the tubes in such condition, you have removed a very small part of the pathological material.

The same system of cofferdam drainage is employed in the typhoid fever cases, where there has been an extensive soiling of the peritoneal cavity. The typhoid perforations are closed, except in the very late cases characterized by extensive peritonitis and distention, in which you will get the best results by stitching the distal perforation to the parietes, so as to establish intestinal drainage. In these typhoid patients, we permit the cofferdam to remain from ten days to two weeks, depending upon the stage of the typhoid when the perforation occurred. If the drainage is removed at an early date, you will have a recrudescence of symptoms and the temperature will probably go up to a hundred and three or four degrees.

In empyema of the gallbladder, the system of drainage is much the same. We do not remove the gallbladder unless it is excessively large and much infected. I have seen the big, infected gallbladder diminish in size so rapidly, when properly drained, that I doubt if we are often justified in removing the bladder. It is of great assistance for drainage. In the worst gallbladder cases, we put a semi-circle of gauze drains beneath the bladder, damping it off from the general abdominal cavity, and place a good, big gauze drain in the bladder. The gallbladder is thus splinted between the internal and external drains and is thus most effectually drained. Remove the abdominal drains at the end of five days and the drain in the gallbladder at the end of seven days, and put no more drains in. I am not in accord with the popular view, that drainage predisposes to adhesions, and that extensive gauze drains are more apt to be followed by harmful adhesions, than is tubal drainage. We maintain that the more ineffectual the system of drainage, the more numerous the adhesions.

It is the puncture surgery, or incomplete removal of pathological specimens, followed by poor toilets and incomplete drainage, which predisposes to those organized bands of adhesions and often causes postoperative bowel obstruction. In extensive suppurative conditions, where the source of infection has been removed, toilets made and cofferdam inserted, you will often be astonished at how fragile are the adhesions which will follow. I

have reoperated on these patients and found not even a single adhesion, or there would be a veil of cobweblike adhesions to the old incision. It is the remaining infection which gives the organized adhesions, demanding operative interference.

In my work and association with Doctor Price, we had 620 patients who were operated upon for diffuse or general peritonitis, who received the toilet described and system of drainage, and not a stitch appeared in any patient, while the mortality was below two per cent. There was not a single postoperative bowel obstruction, nor was any patient opened for a secondary abscess. This absence of postoperative complications was due to the radical toilet and system of drainage and invariable removal of the distal infecting source.

The only condition in which we used tubal drainage was where there had been no peritonitis, but considerable hemorrhage or oozing, incident to a hard enucleation of the pathological specimens. In these cases we used a glass tube in the pelvis. The tube is drained every two or three hours, by pumping the serum out with a long syringe, preventing formation of extensive clots. The tube is also an indicator of hemorrhage from extensive oozing, and should be removed at the end of forty-eight hours.

Who will take care of the surgically crippled patients who fill our sanatoriums and are a product of the incomplete surgery of the physiological operator? To-night forty per cent. of the abdominal operations in the Joseph Price Hospital are examples of the puncture surgery and are, therefore, the second, third, fourth, fifth, and sixth operation, all pitiful examples of a failure to remove the primary infecting source. Where is the master hand mighty enough to correct the errors of the surgically crippled patients?

Ask these patients why they do not go back to the first operator after some puncture operation, and they will always give you one of two reasons: Either they have lost confidence in the first operator, or they have asked for surgical relief from the first operator and were refused, as he knew too well his inability to cope with the surgery which follows incomplete work. The primary operation would have been child's play in comparison. I have said, in a previous publication, that the pathology of surgical manufactory through incomplete work, is much less amenable to treatment than the pathology of the patient's conception. I also again ask the profession not to stop their surgical procedures as soon as pus appears in the incision, but to look upon the pus as a trail of the offender and not as a pathological entity. Find the offender.

Let us blot out from surgical literature that supposedly remarkable case which is often reported to us as a cure after the third, fourth, or fifth operation, and bow our heads in regretful remorse that some poor soul has again run the gauntlet of surgical neglect.

If those grand and earnest men who are working along the lines of serum therapy, do not give us an antitoxine for these infected patients, the mortality in the next twenty-five years will not be as low as it was in the hands of the late Joseph Price.

241 NORTH EIGHTEENTH STREET.

THE COMMUNITY AND HEALTH.*

BY MARY SUTTON MACY, M. D.,

New York,

Lecturer in Physiology and Pathology in Education School of
Pedagogy, New York University.

In presenting this lecture to you as one of a series on community living, it is very possible that I may repeat some facts which have been presented to you by others of your lecturers; if so, I ask you to recognize, in those repeated facts, the indications of the close correlation which of necessity exists between the other seven subdivisions of this main topic and the one which I am asked to present here to-day.

Doubtless all your lecturers have in one way or another defined the word community to you, and, also doubtless, each statement has been somewhat different from the others, so I shall not attempt a direct definition but content myself by calling your attention to the fact that community is a term, which, strictly speaking, should be applied only to such colonies, settlements, or groups as are based on the principle of common ownership.

If we were to pause long enough to consider all the items in which any local group of individuals may have common ownership under our American form of Federal and State government, we might eventually work out a long list; and we might easily, further convince ourselves that we constituted one large community made up of smaller communities and that therefore, in facing any of the local items we had listed, we were facing National issues. For our purpose to-day it will be enough if we list two factors in which, as individuals, we possess common ownership with all our fellow citizens, and which are at once local and National issues. These two are briefly: Competition and health.

Competition denotes the strife of individual, or of group, for the utmost personal profit, or, if we turn to Palgrave's *Dictionary of Political Economy*, we find it defined as the "free action of individual self interest."

Health is a condition of physical competency, or soundness, in which the individual organism, or the group, discharges its functions with perfect efficiency. The *Encyclopædia Britannica* states: "Health represents the old English *hoelth*, the condition or state of being *hal*, safe, or sound."

In what other lines of common ownership (or, to use another term, of common interest), should there be any closer correlation than, theoretically, should exist between competition and health, if we accept the definition I have offered? The two factors are harnessed together as an ideal team in the minds of every theorist in political economy, socialism, altruism, or any other "ism" which concerns itself directly or indirectly with the commonwealth.

Please notice, I said "theoretically," there should exist a close correlation between competition and health; and that such a close correlation existed in the minds of "theorists." But we are not here to-day as theorists, nor yet as idealists, but with the avowed purpose of examining practical facts as they exist; with a purpose, and a more or less unexpress-

ed hope, of arriving at some conclusions which may aid us, as leaders among groups, in handling practical facts with such efficiency that we may aid our individual communities in approaching the theorist's ideals. What are these facts?

In the first place, the facts of competition! They are ugly enough, on the surface of things; even in the definition we have given, we employ such unattractive terms as "strife," "utmost personal profit," and "individual self interest." As shown in community living to-day, we find that all the facts emphasize the items of strife, individual self interest, and utmost personal gain with cruel insistence.

A combination of desire and diligence is a basis for individual advancement and a foundation of individual wealth, and for that reason the truly social individual of a community, who possesses the natural desires to live at least as well as the average or reasonably well to do members of the group, make "endeavor" their standard of living and, being susceptible to suggestion, are quickly engulfed in the maelstrom of competition.

Since association necessarily modifies the physical, mental, and moral natures of individuals, though in unequal degrees among members of the same group, there inevitably results a variation in the adjustments of the components in a community to the social conditions by which they are environed. The socially minded individual refrains from active interference with his fellows in their struggle for existence, but the general antagonism within a community usually aroused by the keenness and the intensity of modern competition, can disappear only if competition for the necessities and needs of the many give place to the present tendency to struggle for the necessities of the few which are luxuries for the multitude.

Competition in mercantile and commercial life, in business and industrial life, in family and social life, in all forms of community life to-day, seems based on David Harum's corruption of the Golden Rule, namely, "Do unto the other fellow, as you know he would like to do unto you, only do it fust," or more tersely in the phraseology of our city boy, "Do the other fellow." But through this sordid (may I say morbid?) view of competition there gleams a ray of light and cheer. There exists a form of competition, based upon strife to be sure, but not on individual self interest, which deserves the earnest support and cooperation of every sincere worker, I mean the competition of the medical profession and the sanitarians with disease, and public ill health; such as the struggles with disease epidemics; the control of quarantine regulations; the establishment of boards of health, local, State, and—it is to be hoped—National; and the initiation of a wide campaign for the education of the public in the means of preventing disease and of promoting health.

The facts of health, therefore, need to be faced side by side with those of competition in the problem of community living, and the two factors, health and competition, are closely interrelated.

Dr. John Glaister, of Glasgow, at the beginning of his able *Textbook of Public Health*, states:

*Abridged from a paper read before the National Training School of the Young Women's Christian Association, April 9, 1912.

"From the days of the Mosaic code up till the present time, the science of medicine has been divisible into two distinct branches, viz., the curative and the prophylactic or preventive. It is interesting to note that in the code above mentioned probably more attention is devoted to the prophylactic than to the curative aspect."

We are to-day getting back toward the Mosaic spirit in the practice of medicine, and we are devoting fully as much attention to the prophylactic as to the curative aspect of the science. As was the case in the time of the Mosaic code, so is the situation at present; the medical profession to-day, as the lawgiver of health, can and does lay down the rules of prophylactic medicine, but it remains for the people to obey the law if it is to be effective. The children of Israel suffered in the wilderness for the infringement of a simple sanitary provision of that Mosaic code in regard to "pure food." The preservatives they used for the manna were at least as effective of harm as are some of our modern food preservatives, or some of our cold storage methods.

The medical profession of to-day can, does, and will, lay down rules for health preservation and it is for you as members of the people to follow those rules personally, and for you as leaders among the people to cause others to follow those rules.

I heard it stated recently that "nothing was so contagious as fear," and I beg leave to differ with the statement. Fear may be highly contagious—in fact is so—if expressed, but it is the objective expression of the fear, the conduct of the *fear full* individual, that is contagious, not the subjective sensation of fear. Objective fear is contagious, because fear is one of the instincts most closely allied to one of the primal instincts of all life, i. e., self preservation. Conducts of other kinds may also be contagious if judiciously based on instincts allied to self preservation or to the other primal instinct of all life, i. e., reproduction. If you, therefore, as leaders in your individual communities, cities, towns, or villages, will set yourselves to be examples in conduct for healthful living—which rationally is based on both primal instincts—you will find your conduct contagious in proportion to the enthusiasm and skill with which you carry out the laws laid down for you to follow.

The question of community or public health, then, is one which you must consider, if you are to be efficient units in community living and I will try briefly to give you a few guide posts to help in your careers as assistants to the medical profession in the competition with disease and in the promotion of community health.

First, there are certain conditions of Nature which can affect public health, such as, 1, altitude, which may vary greatly within the compass of a small community; 2, nature of the soil, which is of great importance to the general characteristics of the community health; 3, the winds, their prevailing direction and their usual force; 4, the rainfall, its periodicity, and average amount; 5, the natural reservoirs and their availability for a water supply for the community; 6, the geological strata and their influence on natural drainage and possible

sewage systems; 7, the habits of general cleanliness, overcrowding, management of personal refuse and the like; and, 8, the topographical and geological data of the general sources of food and milk supply of the community.

Second, there are conditions of civilization which very materially affect public health; such as, 1, housing conditions; 2, water supply; 3, food supply; 4, milk supply; 5, sewage, refuse, and drainage disposal; 6, trade processes and their effects on cleanliness, water supply, atmosphere, etc.; and, 7, population, its density, distribution, and habits of migration, agriculture, domestication of animals, etc.

Third, there are statistical tests which may be applied for the purpose of gauging the health conditions of a community.

The conditions of Nature which have been mentioned as influencing the health of the community are hardly within your power of control, but intelligent interest and study under competent direction may serve a purpose in helping to adjust local conditions to the necessities of local environment in the individual community under consideration. For example, local variations in altitude, nature of soil, winds, and geological strata, such as naturally exist in a rolling or hill district, may be utilized for the promotion of community health and community wealth at one and the same time, if judicious disposition is made of residential, and business, and factory sections, and proper precautions are taken to avoid contagion and allow free circulation of air by providing park spaces, not only in the poorer, as well as the wealthier residential sections, but also in the factory and business sections, and with due regard paid to the noxious character of factory refuse and smoke, if the factory and residence districts are so disposed that water courses, prevailing winds, or natural drainage carry the annoyance from the former to the latter. Frequently you will find conditions obnoxious and seemingly unalterable; then in the competitive health interest of the community you must seek to apply knowledge for the mitigation of the unfortunate circumstances of conflict in natural and civilized conditions.

The chief influences of varying altitude on health are more or less generally known to you, and could hardly be factors in the general public health of your community which you could materially alter, or even counteract, though familiarity with the general principles might be of value in helping you decide for individual cases the advisability of remaining in certain localities or moving to some neighboring or distant point where the altitude is more favorable to the peculiar case in hand.

The nature of soil, winds, and rainfall are other factors in the climate of any locality which may have very pertinent influence on community living. The nature of the soil, for instance, influences not only the character of the agricultural, trading, or mercantile occupations of the bulk of the community, but also the method of sewage disposal, of drainage, and the character of house construction, and selection of business and residential building sites. The amount and prevailing direction of wind may determine not only the relative positions of

factory and residence districts in a community, but also the height of buildings and their general character in construction, with due consideration of the possible dangers of spread of fire if fanned by strong prevailing winds. The rainfall in a district has not only its very pertinent influence on the water supply of the community, but must be considered from the point of view of dangers (a) to agriculture from drought, and from flood, and (b) to spread of disease by heavy falls following on long periods of drought.

This brief list of limits, by no means even complete, let alone exhaustive, must serve to suggest to you the necessity for a broad, intelligent interest on your part in the conditions of Nature which may influence health, to which I alluded above as hardly within your control. You cannot do much to change the nature of the soil, to alter the altitude, or the winds, but you may help to influence the rainfall by conservation of forests, or by the planting and cultivating of shade trees, which not only appear to attract winds, but serve also in a measure to prevent droughts and floods. In other words you cannot control, but you may influence or conserve these conditions of Nature for the good of the community. I have not time to go into more detail, but have suggested thus a few points for you to follow up in these and other lines of study.

The conditions of civilization which affect public health are more thoroughly within community control, but public ignorance often blocks the application of practical measures of public health protection. For example, it is frequently difficult even in small communities, to better the housing conditions or to avoid undue local congestion of population among the poor working classes for several reasons of public ignorance: First, the congested poor themselves are hard to teach the dangers of their squalid and crowded quarters, and the lack of healthy conditions surrounding them and their children in their homes are matters of less importance to them than are the dangers incidental to their occupations in factory or workshop about which they have been more or less thoroughly taught; second, the houses in which they live are owned usually by corporations or by a landlord whose interest is largely, if not entirely, in the financial return on the money invested, and who "sinks" no more in the investment than the law or local public opinion compels; such landlords, be they corporations or individuals, are largely ignorant of their obligations to the public health of the community, and not infrequently are as difficult to teach as their tenants; third, the community itself is largely indifferent to the existing conditions, because the public is ignorant, not only of the facts, but of its own claims, rights, and privileges in the control of sanitary conditions and the correction of insanitary abuses of such a character.

What has been delimited above about housing conditions should give you a line of suggestion as to your community duties in regard to pure food, pure milk, etc. Not only can you begin a campaign for the raising of public standards and demands as to housing, as to food, and as to milk, their purity, lack of adulteration, cleanliness, etc., but also you should initiate a campaign of public education along

these lines and on the questions of congestion of population, quarantine, boards of health, medical inspection of schools, sewage disposal, etc.

The statistical tests, which were alluded to as a means of gauging the health conditions of a community, may be summed up as five:

1. The proportions and interrelations existing, year by year, and month by month, in a series of years, between the marriage, birth, morbidity, and death rates of a community, with proper allowance being made (a) for sudden fluctuations of population due to various immigration and emigration causes; (b) for unusual epidemics, and (c) for the influences of midwifery, common lodging houses, and other social makeshifts upon morbidity and mortality. This, as well as the other tests, involves the careful collection and compilation of vital statistics in the community for a period of time of at least four to five years.

2. Infant mortality is not only capable of serving as an index of child and infant hygiene in a community, but also as an index of the industrial occupation of mothers, and of women generally as such influence the home hygiene of the community.

3. Zymotic death rate is indicative frequently of insanitary conditions, though its fluctuation may not infrequently be due to causes outside of community control.

4. The respiratory disease death rate is an indication most frequently of unhealthy trade conditions, resulting in smoke and dust nuisances, or lax factory laws controlling the dangers incident to certain occupations.

5. The phthisis death rate is an index, not only of similar insanitary conditions to those indicated in 3 and 4, but also of the degree of public health education current in the community.

Thus it becomes evident that the workers who seek to promote the health of a community must not only be informed on public health topics, but must be prepared to begin a campaign of public education, not only in municipal or community and industrial hygiene, but also in personal hygiene and the prophylaxis of disease. This then is the meaning of health in relation to the community, since on the good health of every individual must be based the health of the whole group and your relations to the common ownership or community of health as related to community living may be briefly summarized as follows:

1. You owe a duty to the community as a unit thereof to maintain your individual health unimpaired and, if impaired accidentally, to regain it with greatest possible speed and to use every means in your power to avoid spreading any contagion you may unavoidably contract.

2. You owe a duty to the community to raise the standard of the public health conscience by the dissemination of such knowledge of the prevention of disease by personal and public hygiene as comes within your ken.

3. You owe a duty to your religious profession to spread the doctrine of good health and pure living by conduct, and by teaching, both public and private. "For with what measure ye mete, it shall be measured to you again."

101 WEST EIGHTIETH STREET.

THE MEDICAL CORPS AND MEDICAL RESERVE CORPS OF THE UNITED STATES ARMY.*

By A. W. WILLIAMS, M. D.,
Philadelphia,

Captain, Medical Corps, United States Army; Attending Surgeon.

The commissioned personnel of the Medical Department of the United States Army consists of a medical corps, a medical reserve corps, and a dental corps. The medical corps renders medical service for the regular army. The medical reserve corps is organized for the purpose of admitting of expansion of the army to meet the requirements for medical service in campaign. The Medical Corps of the Army consists of 444 medical officers, in the following grades: One surgeon general, fourteen colonels, twenty-four lieutenant colonels, 105 majors, 300 captains or lieutenants. Vacancies are filled by appointment in the junior grade. First lieutenants, after three years' service, upon passing an examination to determine their fitness for promotion, are advanced to the grade of captain. Promotion to the grades of major, lieutenant colonel, and colonel is by seniority. But an examination is required for advancement to the grade of major and another for that of lieutenant colonel. Advancement to the grade of colonel takes place without further examination.

Appointments in the Medical Corps of the Army are made by the President, after the candidate has passed a successful examination before an army medical board and has been recommended by the surgeon general. Permission to appear before the board is obtained by letter to the adjutant general of the army, which must be in the handwriting of the applicant, requesting appointment in the Medical Corps of the Army, giving date and place of his birth, place and State of which he is a resident, and enclosing certificates based on personal acquaintance from at least two reputable persons as to his citizenship, character, and habits.

As to qualifications, the applicant must be between twenty-two and thirty years of age and a graduate of a reputable medical school, in evidence of which his diploma will be submitted to the board at the time of his preliminary examination. The applicant is also required to submit evidence that he has had at least one year's hospital experience after graduation.

In regard to pay and emoluments, the annual pay of the various grades is as follows: First lieutenant, \$2,000. Captain, \$2,400, with ten per cent. additional after five years' service, \$2,640, after ten years' service \$2,880. A major's pay is \$3,000, after ten years' service \$3,600, after fifteen years' service \$3,900, after twenty years, \$4,000; a lieutenant colonel \$4,500, colonel \$5,000, brigadier general \$6,000. In addition to their regular pay officers are provided a liberal allowance of quarters, according to rank, or, where no suitable government quarters are available, by commutation. Fuel and light are also provided. A liberal amount of

heavy mahogany furniture of attractive design is furnished and, as a rule, telephone service is installed in all quarters on government reservations.

When traveling on duty, without troops, an officer receives seven cents as mileage. On change of station he is allowed transportation for professional books and for household furniture, the allowance usually being ample. Officers of the medical corps are mounted, and are provided with forage, stabling, and transportation for horses actually owned and kept by them, not exceeding two for all ranks below that of brigadier. Horse equipment is furnished to all mounted officers below the grade of major, and an annual allowance of \$150 for one, and an additional \$50 for two horses actually owned and kept by them.

Groceries and other articles may be purchased from the commissary at about wholesale cost price. A well appointed library of modern medical books with current issues of the best medical journals is supplied to each hospital. Instruments and appliances for the use of medical officers in the discharge of their duties are liberally supplied. Medical officers may engage in private practice in the vicinity of their station, provided it does not interfere with the performance of their duties. The establishment of an office for private practice is prohibited.

The examination for entrance into the medical corps consists of a preliminary examination in anatomy, physiology and histology, chemistry and physics, materia medica and therapeutics, surgery, practice of medicine, obstetrics, and gynecology; also an examination to test the applicant's general education. This examination, however, may be omitted in cases of graduates of those medical schools which require entrance examinations satisfactory to the faculty of the army medical school.

After passing the preliminary examination, candidates are given a course of instruction at the Army Medical School, after which a final or qualifying examination is required. The course of instruction at the army medical school is of eight months' duration, pay and allowances being given in the grade he is serving (first lieutenant) while under instruction.

OPPORTUNITIES OFFERED IN THE MEDICAL CORPS OF THE ARMY FOR RESEARCH WORK IN PREVENTIVE MEDICINE.

The necessity of maintaining the army at the highest standard of physical fitness, makes this branch of medicine of the greatest importance to the medical department. To select recruits who are mentally and physically qualified to perform all the duties of a soldier, and to protect them from the invasion of disease, that their efficiency as a fighting machine will always be in perfect working order, is the goal toward which we are constantly striving. That our efforts in the past have not been without reward is evidenced by the epoch making work of Reed, with his associates Carroll, Agramonte, and Lazear. Only one of these heroes is now living to tell the tale of the remarkable discovery of the transmission of yellow fever, formerly believed to have been spread by various agents, now proved to be conveyed by a species of mosquito known as *Stegomyia fasciata*. It has been

*Read before the graduating classes of Jefferson Medical-Chemical and University of Pennsylvania Medical Colleges, and Sages Therapeutical Society of Temple University, Philadelphia, Pa. Published by permission of the Surgeon General.

estimated that this discovery made by Reed and his associates in Cuba, has made a financial return in maritime commerce, in the unnecessary quarantining of vessels, to more than offset the cost of the entire Spanish-American war.

The work of Gorgas and Kean in Cuba, in the immediate application of this discovery in the complete stamping out of yellow fever in that island, occupies the most interesting chapter in the history of that present little republic, and should make their people ever grateful to the American nation. This accomplishment in preventive medicine and sanitation in Cuba was quickly followed by Ashford's discovery in Porto Rico, of the cause of a disease which was devastating the one million population of this fertile and picturesque island. The disease at that time, named from the most predominant symptom of the affection, was called anemia. The death rate from anemia far exceeded that of any other disease at that time. Ashford discovered the cause of the disease to be the hookworm, and by enlightening the people as to the manner of entrance of the worm into the intestinal canal, by improvement of the sanitary conditions under which the people lived, and by establishing dispensaries for the treatment of the poor, he has made a magnificent contribution to science and has benefited these people immeasurably. The Porto Rican physicians now knowing the cause of the anemia which has claimed thousands of victims annually, are in a position to carry on the treatment of this affection in an intelligent manner.

A very recent and most brilliant application in preventive medicine has just been made by Chamberlain and his assistants, comprising The Board of the United States Army for the Study of Tropical Diseases as They Exist in the Philippine Islands. Beriberi, a multiple peripheral neuritis of unknown causation, which has existed in the Japanese army for centuries, also existed in the Philippine scouts to an alarming extent. Working along the same lines as the English physicians in the Malay Peninsula, the board recommended a change in the diet of the Philippine scouts by a reduction in the amount of polished rice, with the addition of a legume, and, later on, substitution of an undermilled for the polished rice. Following this change in diet of the scouts, beriberi has been reduced from fifty cases a month, as obtained in 1908-9, to only one case in six months for the first half of the year 1911.

The construction of the Panama canal, that great engineering feat, was commenced by the French, only to be abandoned on account of the ravages of tropical disease. Again commenced by the Americans, and now within about a year of its completion, it is the greatest example during the world's existence of the benefits to be conferred upon the human race by sanitary science. Gorgas, on whom this responsibility rested, was eminently fitted for this colossal task by a similar work extending over years in making Havana a modern habitable city. So successful has the result of Colonel Gorgas's labors been in the Canal Zone, that the death rate in that locality to-day is less than in your own city of Philadelphia.

The remarkable demonstration of the value of

antityphoid vaccination, as evidenced in the mobilization and maintenance of an entire division of American troops on the Mexican border for four months, with the occurrence of only one mild case of typhoid among the immunized, is credited by the President of the United States as one of the five greatest achievements of science for the year just passed.

Some of the attractive features of service in the medical corps, are: To begin with, the pay is ample to meet the requirements of a comfortable living. Scientific medicine may be pursued without the worry incident to the civil practitioner in the struggle for the maintenance of a livelihood. As a consequence, the demands for your services will not be in accordance with the ability of the individual to pay the fee for your services, but will be wholly dependent upon the scientific interest of which the case is deserving. The present policy of the surgeon general, which will probably be pursued in the future, is to encourage officers in our corps in the pursuit of specialties, and to afford them opportunities to carry on work in their special lines, as far as the conditions of the service will admit. In the care and treatment of soldiers as patients, your control over them is unequaled in private practice. They are under military discipline and are required to carry out your orders. The opportunities in the service for broadening one's knowledge have been greatly increased, during the past fourteen years, by the acquirement of our tropical possessions, affording us an almost unlimited field of research in tropical medicine.

Officers of the Medical Corps of the Army are allowed, when their services can be spared, a one month's leave of absence yearly on full pay. This is cumulative for four years, when a four months' leave may be granted. By special authority a further extension may be granted on half pay. Absence from duty on account of sickness does not involve a loss of pay. Medical officers, if disabled in line of duty, are retired on three quarters of their full pay for the remainder of their life. After thirty years' service, an officer may be retired on his own application at the discretion of the President. After forty years' service, he can be retired if he desires it, and at sixty-four years of age his retirement is compulsory. At sixty-four years of age an officer in the medical corps has, as a rule, attained the grade of colonel. The annual pay in that grade is \$5,000, three fourths of that sum being \$3,750, equivalent to an income at five per cent. on \$75,000, a sum not usually acquired in a lifetime in the practice of medicine in civil life.

At present there are thirty-five vacancies in the medical corps of the army.

THE MEDICAL RESERVE CORPS.

While the medical corps is about sufficient in numbers to meet the actual needs of the army in peace conditions, it is necessary that a medical reserve corps of a sufficient number of medical men in civil life be maintained in order to admit of expansion of the medical department in the event of war. Since the medical reserve corps was first organized, in 1908, there has been commissioned therein a large number of the most distinguished

men of to-day in the profession of medicine and surgery. The work in the field, however, will in a large measure have to be done by the younger men, and it is the desire of the surgeon general to inaugurate this summer the policy of getting a large number of the best class of the younger men, hospital internes, and this year's graduates into the corps. These men, if upon examination they are found to be physically, mentally, and morally qualified, will be commissioned as first lieutenants in the medical reserve corps.

In order to familiarize them with the duties which would be expected of them in campaign, and to bring them into closer touch with the regular establishment, it is anticipated that a certain number of these newly appointed members of the medical reserve corps will be offered active duty with troops, for a year or two, during which time they will receive full pay in the grade in which they are serving. The medical reserve corps is unlimited as regards the number of appointments that can be made by the President.

SOME PHENOMENA OF THE MODERN PRACTICE OF MEDICINE.*

By G. W. MCGREGOR, M. D.,
Littleton, N. H.

Some of my predecessors have dwelt at great length upon the achievements and glory of the long since departed and much revered members of this society. Only by turning to the past can we measure the present and conjecture the future. While we marvel at the accomplishments, endurance, fortitude, and kindness of the early members, and thank God that we are living and working in this so called enlightened age, let us not forget that we too are making history; and that a hundred years hence our efforts, methods, and results may seem as primitive to the then men of science, as those of a hundred years ago seem to us. Less than fifty years ago the common practice was to purge and bleed. The present day practice is to evacuate and bleed; only, the old doctor bled into the bowl, while the modern doctor bleeds into the veins. In the old days the laboratory worker would have been looked upon by the practitioner of medicine very much as the book farmer was looked upon by his sturdy neighbor, up to a comparatively recent date,—as unpractical.

Medicine is no longer associated with the mysticism of ancient times, inspiring awe and wonder. But I am not quite sure that our advice would not be more commanding and more heeded if the patient retained the impression that the doctor is a little removed from the layman, and that his teaching and habits of thought are more occult than that of all other professions. The mental receptivity of such patients is quickened and the impression created sinks in deeper; makes them more amenable to advice, because they believe that the doctor knows. To-day, "publicity" is the catch-word in politics, commerce, and medicine. "Reformers" in

everything want the people let into the innermost chambers of thought, and evolution of ideas. They want to reduce the personal fraction to a common denominator, with a not too wide variation in the nominator. Hence the too many untenable demands of trades unions, when they endeavor to enforce the same wage for each workman, regardless of efficiency as contemplated by the employer. "The chain is no stronger than its weakest link." If the militant trades unions would demand for each laborer only that sum earned by the least efficient, the minimum, instead of the sum earned by the best, or even the average worker, there would be less hostility between employer and employee.

The aggressiveness of the present age covers all lines of trade and professions. It is a markedly commercial age; productive of a neurosis, affecting all classes of people, to the loss and injury to the human race, so at variance with the "pursuit of life, liberty and happiness" contemplated by our fathers. The restlessness that appears to be inherent in unions pervades all classes. The intensity of the desire to obtain money overcomes the ordinary restraint and conscience of man. It lures him on to commit infractions of business amenities so that it is only a seemingly unconscious act to step over the line of honest endeavor into chicanery, deceit, and dishonor. To what extent this wanton practice has infected our profession, I do not know. But that it is here, no one familiar with the solicitations and doings of medical men in good standing, dares attempt to gainsay. How many of our fellow members are, like Caesar's wife, above suspicion? How many give rebates, not to the patient, but to the physician who referred the patient? This lapse of virtue from our scrupulously honorable selves requires heroic treatment or quarantine against contagion, lest an endemic become an epidemic. At present, I am constrained to believe that it is only sporadic, and if intelligently handled, can be readily stamped out. The primal cause would appear to be in the insufficient compensation of the family physician, for which he himself is largely responsible. And this leads me to the discussion of fees.

Have they been advanced commensurately with the cost of living, among the general practitioners? This rapid age demands quick service, which necessitates the telephone and the automobile, each of which increases the expense of doing business. Formerly a few hundred dollars sufficed to equip the stable, whereas now the first cost is doubled and quadrupled, and the upkeep is beyond computation. It is a self evident fact that this state of affairs leads to one of two conclusions, viz., larger fees, or bankruptcy. Following the line of least resistance leads to the latter. But do we court the ease obtained at such a marked down price? On the contrary, do we not rather like to feel the spur that quickens our endeavors; and does it require an heroic spirit to move us to revise the tariff upward, so that the increased fee shall represent the increased cost of living? No thinking layman will deny the fact of the large increase in cost of the finished product of the medical college—the doctor,—a product that was nurtured through the high school, groomed through the preparatory school,

*Presidential address delivered at the meeting of New Hampshire Medical Society, held at Concord, N. H., May 3 and 4, 1912.

trained in the academic college, moulded in the medical school, finished in the hospital, and polished in the postgraduate school,—with spurs to win in the running. The man well dressed has more self respect than the man shabbily clad. His horizon widens, and his chest and waist measurements expand. To him life seems worth living. But to the average practitioner even the low eminence of a good living in its broad sense, is denied him on the basis of fees as they are listed to-day. The fees, in the rural sections of our State at least, are certainly too low, and the fear of protest by the family against a rise is not well founded, judged by actual demonstration in those towns where the rise has been adopted. A little banter about the "doctors' trust" is only a pleasantry, and the higher fee is as cheerfully paid as the lower. And let me urge those county societies that have not taken up the matter, informally to do so forthwith, and support each other loyally, else you may be reminded of Franklin's saying that "unless we hang together, we may hang separately." The demand of medical schools for a higher preparatory education, and the necessity of maintaining a higher level through the entire course, means a larger outlay of money which must be recouped in practice. No man who rightly and modestly esteems his ability can preserve his self respect by accepting a pittance for his services. No man who has to worry over his finances can do his best work. It hampers him at every step, cramps his mind, and starves his body. Let the fees be advanced.

As to the doctor in politics, there is a difference of opinion among medical men as to the advisability of his entering into active political work. I cast my vote in the affirmative, but would have him patriotic and unselfish, practise the ethics of the profession, recognize a political principle, then fight for it. He might be lonesome for a while, but soon he would establish himself and accomplish results, though they be on a limited basis of reciprocity. In that larger field of activity,—conservation of public health,—who is so well equipped as the man with a medical training? He even might be a safe and sane" navigator of the ship of State, did he but aspire to such lofty eminence! It would be better for the State and Nation if more medical men were members of the legislatures, and heads of executive departments. There would be more discriminating, and fewer perfunctory, decisions; *vide* Doctor Wiley. The human element would be in evidence. Having made an intimate acquaintance with people in all walks of life, the physician can better discern their needs, diagnosticate their complaints, and prescribe for the political unrest and distrust of the present time. Let us support one another in this field of desire.

Protective insurance is a timely topic, the discussion of which thus far, in this society, has yielded little, if anything. I believe that some State societies furnish counsel to defend their members, if, after investigation, the suit is found worthy of defense; but the society does not pay any damages if the verdict is adverse. It appears to me that we ought to bring the force of this organization to bear in favor of the members against whom an action is brought. Publicity of such action by the

society would tend to deter malicious people from seeking so called damages from malpractice. These suits are a growing evil and none of us is immune. On the contrary, one successful attack invites another. A society with a defense fund might induce the nonmembers, who, from indifference, are outside the fold and the breastworks, to become members. The treasury funds would be augmented, and for many reasons we all should be happier and feel more secure as to our reputations and purses. I am advocating the defense of worthy members only; and that after investigation of the merits of the particular suit at law. Malpractice suits are but a symptom of the diseased body politic of this generation. It is a chronic, epidemic disease, contagious and infectious; a plague to the whole civilized world; and attacks all classes and conditions. Its origin is greed. Greed undermines all systems of government, causes commercial disaster, destroys reputations, and leads to untold misery; its cause,—a desire for ease, riches, and pleasure,—all laudable, if obtained honorably. Its symptoms are universal unrest, mutterings of discontent, reaching for rainbow objectives, delirium of imaginary wrongs,—all indicative of a disordered brain, a systemic dyscrasia. Long and earnestly have the constitutional doctors sought its basic, fundamental cause to determine whether it be sociological or socialistic, or a case of "nerves." Is there a remedy? No specific, apparently. There is as wide a difference of opinion among the constitutional doctors as to its treatment, as there is in the political definition of, "What is a progressive?" Some advise heroic treatment, striking at the cause; others would treat symptoms as they arise. Are we beacons and guide posts in this maddening rush for power and pelf? Are we not, unconsciously, perhaps, running with the hare and coursing with the hounds? Often-times I read the death lists in the *Journal of the American Medical Association*, and am impressed with the fact that so very many members die of cerebral hemorrhage, nephritis, and heart disease,—evidences of the strenuous life. Several years ago an elderly physician and myself were commenting upon the seeming lack of ambition of a certain doctor. The elderly physician said, "Yes, but he will live longer."

MARRIAGES AND BIRTHS; THEIR REGULATION.

This is a field of tillage in which the medical profession is the best gardener. Weeds and tares spring up and choke the harvest. Their pollen invades the most efficiently protected enclosures, marring their beauty, and blighting their yield. I refer to those unregenerate and degenerate scions of both sexes, who succeed in marrying into families of culture and refinement, only to propagate their kind, even to the third and fourth generations. If it is true that the criminal, the weak minded, and the pauper are increasing in their ratio to the normal, should not public opinion be aroused to adopt some means of relief? Not only are they a heavy charge upon public and private charity, but a menace to the public. The least that should be done is to place them under legal restraint. But far better would be sterilization and legal restraint. Criminals and paupers beget their kind, generation after generation. Marriage laws should be hedged

about with more safeguards, should be drawn with a view of protection to the offspring. Certain physical conditions should bar marriage for a definite time, and other physical conditions should be a bar for all time. Several weeks ago, I read with interest the requirement of the dean of the Episcopal Cathedral of St. Peter and St. Paul, of Chicago, that, after a given date, no marriages would be solemnized at the cathedral, unless the license was accompanied by a certificate of a reputable physician, stating that the parties were physically and mentally fit. I am informed that five western States have laws providing for sterilization. A friendly suit was recently brought before the courts in Indiana to test its constitutionality. The law was sustained.

How else is the propagation of this species of posterity to be prevented, or at least lessened? The alarming increase of the cost of maintaining the public wards in workhouses, prisons, asylums, hospitals, schools for the feeble minded, colonies for epileptics, will eventually pauperize us. I have the temerity to recommend that the legislative committee prepare a bill to be submitted to the next legislature, embodying some of these features; legalizing the sterilization of those under State or private control, with the consent of those in authority over them; or authority vested in a special commission, from whose decision an appeal may be taken to the Supreme Court only, and not be submitted to a jury, for obvious reasons. Sterilization strikes at the root of the evil; it is the only adequate method. Segregation accomplishes its purpose, when and while efficiently maintained; but the period of legal restraint can be enforced during their minority of age only, except when there is a special enactment by the legislature, and then its intent is, with females, only till the menopause is passed. One argument opposed to sterilization as a substitute for segregation, is that the subject, being sterile, no moral restraint would remain, and the danger of disseminating disease would thereby be increased. If such criticism is valid, remedy it by enforcing segregation also. But an argument in favor is, that were all criminals, paupers, and delinquents, of both sexes, sterilized, thus preventing their further procreation, there would be none by inheritance after the lifetime of the present subjects. During such period a favorable atmosphere would be created, rendering it impossible for these unfortunate people to reproduce themselves; and failure of their parents or guardians to have them sterilized would be considered a reproach by the public. Habitual criminals should be castrated, *volens volens*. It might lessen their ferociousness also, and thus their criminal tendencies. Environment plays an important part in the development of criminals, but in a very large percentage of cases environment cannot be changed. Hence these cases must be considered from a hereditary standpoint and treated as above outlined.

It has been my aim to present for your consideration a few concrete facts, rather than to make a survey of the general field of medicine. Interesting topics, like divorce, woman's suffrage, good roads, and good fellowship, might have been touched

upon with profit; but time and patience should not be overtaxed, and I will close with this quotation: "Who treads in another's footprints, must follow in the rear."

RHEUMATIC FEVER.*

The Factors of a Septic Mouth and Carious Teeth in its Cause and Cure.

By ALONZO MILTON NODINE, D. D. S.,

New York,

Visiting Dentist, New York Nose, Throat, and Lung Hospital;
Director, Brooklyn Dental Infirmary.

Rheumatic fever is a fast and furious disease when it is fast and furious, and slow and meandering when it feels that way, and the province of arthritis seems to be to impart an insufferable emotion with a pain that gives rise to a profound, simple, and profane expression.

As rheumatic fever is not caused by organic spontaneous combustion, but by a definite agent or agents, we will brush away the cobwebs of yesterday and give our attention to the consideration of rheumatic fever, with all the seriousness it demands, as pertinent to the dental profession.

There have been as many theories advanced to account for the phenomena or symptoms exhibited in what has hitherto been termed "rheumatism" as there have been to account for dental caries. Much of the confusion and complexity of defining and restricting rheumatic fever has been due to the inclusion in that designation of many aches and pains; swellings and indolences; about joints and muscles and tendons; with heart lesions; that properly belong to, and are the result of other infections and conditions (7).

Clear your minds, therefore, of any preconceived ideas of what "rheumatic fever" is, and focus your attention on the following definition:

Rheumatic fever is an acute, and, maybe, attenuated general infection; accompanied by toxemia (22), and usually autointoxication, with a variety of local manifestations; principally arthritis and carditis, for which salicylate of sodium seems to be a specific (1, 8, 9, 11, 14).

Since rheumatic fever has been defined as an infection, the determination of the microorganism causing the infection is of considerable importance. Many British, German, and American pathologists and bacteriologists now agree that the microorganism most concerned is a diplococcus of the streptococcus class. This has been labeled *Diplococcus rheumaticus* (1, 10, 16, 47, 48). It has been found in the joints and synovial fluid; heart and pericardial fluid; blood and meningeal fluid; of those who had rheumatic fever (5, 10). Cultures taken from these localities have been injected into rabbits, dogs and monkeys, producing results similar to those found in the human subject, i. e., polyarthritis and tendosynovitis, endocarditis and pericarditis, multiple valvulitis and chorea, plastic pleurisy and subcutaneous nodules (5, 10, 23, 24, 20).

It is equally true of this infection as it is of other infections, that the whole train of symptoms and

*Read before a regular meeting of the Second District Dental Society, March 11, 1912.

effects is not produced by one type of microorganism, but is the result of the combination of two or more different microorganisms. This does not reduce in the least the force of the conclusion that the predominating lesions and symptoms are the result of the activities of *Diplococcus rheumaticus* and its toxine.

Referring again to the first part of the definition, rheumatic fever is an acute and maybe attenuated infection. It has been further noted that it occurs in epidemics (3), and sometimes as many as five in one family become infected (43). Mantle, who in 1877 first called attention to the fact that rheumatic fever was an infectious disease, writes: "I seldom see a case of rheumatism, but on inquiring I learn of other members of the family having been affected with it." This is evidence that it is not only an infection, but it is also communicable from one person to another. Epidemics of rheumatic fever are frequently preceded by an epidemic of sore throat (1, 21a).

That this is an acute infection is indicated by the sudden onset and irregular temperature—vacillating between 100° and 103° F. (2, 7)—accompanied by rapid swelling, pain, redness, and migrating arthritis (2, 46). Rheumatic fever may assume a chronic form, and this form is as common to it as to other infections.

Referring again to our definition, we will consider the local manifestations. In children the affections of the heart are more important and prominent than the arthritis (2, 14), in the ratio of nine to eight. In adults the arthritis is the more marked lesion and occurs in the proportion of two to one of the heart lesions (3, 20).

The joint affections are rarely of a permanent or deformed character, such as occur in arthritis deformans (25). But there is a formation of nodules over the tendons, extraarticular fibrous thickening, and subcutaneous fibrous nodules on fingers, elbow, and hand. The arthritis is of the migrating (21) and polyarthritic type (2).

The heart affections produced are principally endocarditis and pericarditis, with mitral insufficiency (1, 10, 3, 4, 45).

In the definition it was noted that the infection was accompanied by a toxemia (22). Toxemia is the condition produced by the absorption of the poisonous excretion of the microorganisms, called a toxine (27). A toxine produces an effect distinct and apart from the endotoxine or residual poisonous substance in the body of the microorganism (10). Toxines (27) seem to have an affinity for the nervous system and produce their effects through that agency and in the heart. In rheumatic fever, chorea and mild delirium are frequently present (2, 3). The heart lesions are due as much to the effects of the toxine as to the microorganisms (1).

That there is an autointoxication is very evident from the fact that there are the almost constant symptoms of dyspepsia (11) and constipation (6). These induce and promote intestinal putrefaction, with the formation of poisons, toxines, and ptomaines (31).

In the growth of *Diplococcus rheumaticus* formic acid is produced (10). Formic acid (22, 47) is also a product of the splitting up of a sub-

stance called lecithin. Lecithin is found especially in calf's brain and eggs, but it may form an ingredient of any highly nitrogenous food. The effect of formic acid is to cause a loss of tone in cardiac muscle, leading to a general dilatation of the chambers of the heart (22). In this way it contributes to the causes producing the heart lesions so prominent in rheumatic fever.

The ptomaine cholin also is formed from the decomposition of lecithin (27). This ptomaine is one of the things held to be responsible for the attacks of epilepsy (27). It is not unreasonable to believe that it may contribute to the production of chorea and the mild delirium so frequently noted in rheumatic fever. This toxemia also produces a high blood pressure (51) by effecting a change in the muscular walls of the arteries.

Anemia also will be observed to precede or accompany rheumatic fever. This may be due to faulty metabolism, induced by intestinal putrefaction—the result of dyspepsia and constipation—or it may be due to the added effect of the infection and toxemia (1, 2, 3, 9, 11, 38).

These concomitants suggest a solution of the problem of the multiplicity and diversity of symptoms exhibited in rheumatic fever, and may reconcile to that designation other types of so called rheumatism.

As the mouth is the portal of entry for the infection, we will consider this as a field that interests us as dentists. The conviction has very generally been reached, that the tonsils act as foci for the absorption and dissemination of the infection and that their enucleation has frequently effected a cure (3, 11, 12, 22, 26, 31, 40, 48, 49, 32, 50).

Nevertheless, since the infection of the tonsils comes from the mouth, the conditions of the mouth and the location of the possible, probable, and frequent foci of infection in the mouth will receive attention (36, 44).

There are several apparent places in the mouth, in which microorganisms may be sheltered, propagated, absorbed, and disseminated, and their toxines and ptomaines manufactured; cavities in carious teeth, food left upon and between teeth, crowns, bridges, and plates, and pus pockets formed by calculus or any irritation causing gingivitis and pyorrhoea alveolaris. These depots supply the infection for the rest of the body (13, 27, 30, 31, 48, 49, 50).

One investigator, in England, in an examination of 1,000 children five years old, found that of those who had had measles only 20.9 per cent. had sound teeth. Of those who had not had measles, 43.9 per cent. had sound teeth. The interval between the attack of measles and the examination of the teeth was so short that the only reasonable conclusion was that the carious teeth contributed to the infection. This same investigator found that the children with badly decayed teeth, even at this age, weighed less and did not attain the same height as those having sound teeth (52). If carious teeth can play so positive a part in contributing to the infection in measles, and influencing the growth and weight, why cannot carious teeth play the same part in the infection of rheumatic fever, or any other infection? (32, 34, 39, 42, 48, 49).

Again let me call your attention to an editorial article in the *NEW YORK MEDICAL JOURNAL* for February 24, 1912, in which it says: "Victor Greer Best, a candidate for the degree of M. D. in the University of Dublin, chose for the subject of his thesis *Serum Vaccine Treatment for Pyorrhoea Alveolaris*. There is no doubt in the author's mind, of the connection between pyorrhoea alveolaris, appendicitis, rheumatism, rheumatoid arthritis, gastrointestinal infection and other related conditions. This author attributes to *Streptococcus conglomeratus* and *Diplostreptococcus rheumaticus* the principal cause of pyorrhoea alveolaris. It seems the medical profession might well study this not uncommon condition from this pathological viewpoint."

In the mouth the following phenomena take place:

1. The entrance of germs on food, drink, air, and contact with common things.

2. The harboring and propagation of microorganisms, the secretion of their toxins.

3. The absorption of microorganisms and toxins from pathological and abnormal surfaces by blood and lymph streams.

4. The dissemination of the microorganisms to the outside world by means of the secretions of the mouth—the sputum.

5. The dissemination of microorganisms to the rest of the body via the gastrointestinal and respiratory tracts.

6. The decomposition and putrefaction of food resulting in the production of ptomaines and other poisons.

7. The absorption from the pyogenic mucous membrane of the mouth of these toxins, ptomaines, and poisons, or the sending on to the gastrointestinal tract the accumulated results of this putrefaction.

The combination of these conditions and processes, accompanied and initiated by carious and septic teeth, constitutes oral sepsis, as the speaker understands it.

The harboring and propagating, the absorption and dissemination of the diplococcus and the other germs concerned in rheumatic fever are easily accomplished under the condition of oral sepsis.

The infection and encouragement of abnormal tonsils and septic mouths are further magnified by mouth breathing, induced by deformity of the dental arches and malocclusion of the teeth.

"Of all the diseases characterized by serious complication and consequences, acute articular rheumatism is one of the most important."

"It should be considered next in importance to tuberculosis among the diseases of early life" (21a).

"One of the commonest diseases of children which the medical man is called upon to treat."

An examination in London revealed that 6.83 per cent. of the children in four schools in the senior departments between the ages of seven and fifteen years had rheumatism (33).

Eight per cent. of the 5,000,000 school children examined in England required operation for abnormal tonsils and adenoids (33).

In 43.6 per cent. of the cases of rheumatism in

the four schools mentioned, there existed abnormality of the tonsils or pharyngeal mucosa, or both.

The incidence of tonsillitis and adenoids requiring operation is four times as great in rheumatic children as in school children generally (23).

One child out of fifteen from the age of seven years onward attending the elementary schools is rheumatic and eighty-seven per cent. of these have some consequent affection of the heart (34).

Again, seventy-five per cent. of the cases of rheumatic fever occur between the ages of four and twenty years; the years in which decay of the teeth is most rampant.

The speaker adds this hypothesis for your consideration. Conceding that the condition of oral sepsis exists, is it not probable for decomposition of food to take place in the mouth, with the formation of cholin and other unidentified ptomaines and poisons; do not the propagation, dissemination, and absorption of the microorganisms concerned in the cause of rheumatic fever and other infections take place from the abnormal surfaces, through the united efforts of the factors named? Does this not constitute, or does not the accumulated effect of these conditions constitute a very direct cause of rheumatic fever and of other infections? Or, let me put it in another way: Is not the natural and normal resistance of the human organism undermined and broken down through the inability of the gastrointestinal tract to assimilate fermented, infected, unmastered food? Does not this combination of conditions supply the proper factors to promote intestinal putrefaction, with the formation of the toxins, ptomaines, and other poisons before mentioned?

Granting that these conditions produce the results and symptoms previously stated, will not the correction of oral deformities, the eradication of necrotic roots, the obliteration of cavities of decay, the restoration of proper masticating teeth, and the institution of correct hygienic measures for the mouth, be very potent factors in the prevention and the cure of rheumatic fever?

RECAPITULATION.

1. Rheumatic fever is an acute or attenuated general infection accompanied by toxemia, auto-intoxication, chorea, high blood pressure (51), anemia, carditis, and arthritis.

2. The microorganism, and its toxins most concerned in the stimulation of the particular symptoms evidenced in rheumatic fever, is *Diplococcus rheumaticus* of the streptococcus family.

3. The portal of entry for the infection is the oral cavity.

4. Oral sepsis plays a direct part in the causation of rheumatic fever by supplying the necessary conditions and ingredients for the absorption, via the gastrointestinal tract, of the factors concerned in the excitation of the symptoms exhibited.

5. Oral sepsis plays a direct part by supplying the necessary conditions also for the absorption from the mouth of the agents that induce the train of symptoms manifested in rheumatic fever.

6. The correction of the conditions contributing to oral sepsis will exert a positive and favorable influence in preventing and curing rheumatic fever.

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1 EAST THIRTY-FOURTH STREET.

Correspondence.

LETTER FROM LONDON.

National Insurance Act.—Annual Report of Lunacy Commissioners.—Reported Plague in Liverpool.—Death of Mr. Arthur Trehern Norton, C.B.

LONDON, August 20, 1912.

As Parliament is now out of session and most members of the government are away on holiday, no further developments of any importance are likely to occur in connection with the National Insurance Act. It will be remembered that at the annual meeting of the British Medical Association the decision was reached that all negotiations with the insurance commissioners be broken off until such time as the minimum demands of the profession were conceded. In accordance with this declaration of policy, the British Medical Association called upon its members who are members of the various advisory committees in connection with National insurance act to withdraw from these bodies. The majority of the members of the advisory committee resigned, but fourteen members refused to resign. They issued a manifesto in which they state they have carefully considered the position, and with a full sense of responsibility they are of opinion that for the present it is their duty to remain members of the committee. Among the signatories are Dr. Christopher Addison, M. P., and

Sir Clifford Allbutt. Notwithstanding this division of opinion among the members of the advisory committee, the great body of general practitioners are quite firm in their determination to have nothing to do with the insurance act as it stands at present. It is thought by some that this split in the camp, though of no real significance, should not have been allowed to occur. The members of the advisory committee do not receive any payment for their services, and the British Medical Association made a mistake in asking them to withdraw. Still it would have shown the loyalty of the members if they had obeyed the commands of the association without question, as the majority of them did. Ministers who construe this refusal to resign as a sign of a general split in the ranks, will be greatly mistaken.

The Annual Report of the Lunacy Commissioners has just been issued. In the report are given the results of exhaustive investigations into the question of heredity and its influence on insanity. It is pointed out by Doctor Mott, that among the offspring of insane parents daughters are much more numerous than sons, in the proportion of 292 to 208. These figures show that the female sex in a stock is more liable to become insane. In cases with a family history of alcoholism the proportion of females was fifty-three, being two above the mean. In cases in which an insane heredity was considered a foremost factor, the proportion of females was fifty-nine per cent., considerably higher than that given in the total admissions. Sudden stress was recorded in thirty-five males as compared with sixty-five females. Prolonged stress likewise appears to be a more frequent precursor of insanity in females than in males, namely forty-five males to fifty-five females. Intemperance in alcohol was considered a principal factor in nearly as many cases as was prolonged mental stress, but here male cases were more than twice as numerous as female. Syphilis as a chief factor was noted in the proportion of eighty-seven males to thirteen females. Injuries were likewise far more common as antecedents in males than in females. Among other causal conditions is influenza, where the female sex slightly predominates, epilepsy, where the female percentage was much below the mean, and anemia where this was very high.

A communication from the local government board has been published in the newspapers to the effect that a boy, seven years of age, was admitted to the Royal Infirmary, Liverpool, on July 25th and operated on for supposed appendicitis. A gland was removed from the groin and was found to contain plague bacilli. This diagnosis has been confirmed at the laboratory of the local government board. The source of the infection cannot at present be stated definitely. All precautions are being taken to prevent the possibility of the spread of the disease and no further case has occurred.

The death has occurred of Mr. Arthur Trehern Norton, C. B., F. R. C. S., consulting surgeon to St. Mary's Hospital. Mr. Norton served in the Franco-Prussian war and received the French gold medal in recognition of his organizing work in relation to the ambulance department. In 1876, he became full surgeon to St. Mary's and lecturer on sur-

gery. He was an examiner for the University of Durham and the Apothecaries' Society. He was made a Companion of the Bath in recognition of the part taken by him in the organization of the Volunteer Medical Staff Corps and of his many years' service in it as surgeon lieutenant colonel. He was one of the proprietors of the *Medical Press and Circular*, with which he was at one time editorially connected. He wrote *Osteology for Students and Affections of the Throat and Larynx*. He also translated and edited Barnard and Huette's *Operative Surgery* and *Surgical Anatomy*.

Therapeutical Notes.

Treatment of Hydrarthrosis.—Gangolphe, in *Lyon médical* for June 23, 1912, calls attention to the fact that in many instances of recurring serous effusions in joints, especially in the knee, the underlying cause is a congenital abnormal laxity of the ligaments, which exposes the synovial membrane to an unusual degree of irritation during prolonged functional activity of the joint, an outpouring of fluid being the consequence. Where trouble of this nature is present in the knee, other joints, such as the wrist, elbow, ankle, and metacarpophalangeal joint of the thumb may be found to present undue mobility; a general tendency to ligamentous relaxation is thereby shown to be present. The treatment in these cases should not be immobilization, which renders the condition worse through disuse of the muscles supporting the joint, but instead, massage of these muscles (e. g., those of the thigh, in the case of the knee) twice daily. This will lead to a sufficient development of the muscles to make up for the laxity of the ligaments. In very pronounced cases the use of articulated supporting apparatus in addition, may be required.

Magnesium Sulphate Subcutaneously as Purgative.—Albert Robin and Marcel Sourdél, in *Bulletins et mémoires de la Société médicale des hôpitaux de Paris*, June 20, 1912, report seventeen cases in which hypodermic injections of from 0.5 to five c. c. of a twenty-five per cent. solution of magnesium sulphate were used. The injections were at first made in the buttock, later under the skin of the abdomen; the latter method apparently giving the better results, and being more convenient for bed patients. The cases in which the procedure was tried included appendicitis, poisoning by corrosive sublimate, acute articular rheumatism, pneumonia, quinsy, hemiplegia, valvular cardiac disease, gastric cancer, etc., all with obstinate constipation. Good results were noted in fourteen cases, free bowel movements, sometimes of a diarrhéal character, but generally not, being produced after a varying number of injections. Increasing the dose above one c. c. did not secure any quicker results than the smaller amounts; in fact, from 0.5 to one c. c. was found most effective. Several of the patients, previously chronically constipated, continued having regular movements, as a result of the treatment. The authors believe subcutaneous use of magnesium sulphate to be indicated wherever the taking

of a purgative by mouth is impossible, when rectal administration is without effect, and when it is desired to act on the intestinal musculature rather than on the mucous membrane. The procedure would accordingly be useful in cases of tonsillar abscess, tetanus, uremic coma, or intestinal paresis, in patients who cannot retain anything taken into the stomach, in certain cases of chronic intestinal obstruction, and in neurasthenic, constipated women. The usual antiseptic and aseptic precautions should be taken in giving the injections; the solution of magnesium sulphate used should be sterile. No unpleasant general symptoms or phenomena of local irritation or infection were witnessed after the injections.

Treatment of Tuberculous Laryngitis.—G. H. McFall, in *Journal of the Michigan State Medical Association* for July, 1912, states that as a local application in this disease he has found formaldehyde in a fresh three to five per cent. solution to be superior to all other remedies. The larynx may be first cleaned with some alkaline solution, and a cotton swab wet with the formaldehyde solution then rubbed over the surface. The burning sensation which follows is not severe, except in very advanced cases; it may be more or less completely obviated by the previous application of cocaine. As a result of the use of formaldehyde solution the throat feels clearer and in many cases the cough is eased. Early cases may be absolutely cleared of any signs of laryngeal trouble within a week, though in the average cases several weeks and sometimes months are required. Where there is an "irritative" cough, due to the constant influence of pulmonary disease products on the larynx, good results may be obtained from endotracheal injections of guaiacol, menthol, camphor, and oil of eucalyptus with a base of olive oil, in amounts ranging from two to five c. c.

Treatment of Pneumonia.—Svoekhotoff, in *Archives générales de médecine* for April, 1912, is stated to have obtained excellent results in pneumonia by the frequent administration of camphor internally. He advises that cachets containing 0.12 gramme be given every two hours from the very beginning of the disease, without waiting for cardiac weakness. Where the condition becomes bad, however, the drug should be injected subcutaneously every half, or even every quarter of an hour. After the crisis, the cachets are continued every three hours for a day or two, then three or four times daily; the subcutaneous route is reserved for cases where gastric disturbance appears. In a series of 120 hospital cases of pneumonia treated with camphor, the mortality was but 2.5 per cent. One patient received the maximum dose of 12 grammes daily for four days, without ill effect.

Treatment of Erysipelas.—Dind, in *Revue médicale de la Suisse romande* for May, 1912 states that a mixture of one part of ichthyol with two parts of alcohol gives prompt benefit when used locally. The preparation should be freely applied, after careful shaving of the hairy surfaces, until the involved areas and even the surrounding zone of healthy skin have acquired a dark brown color.

Treatment of Fissured Nipples.—Rudeaux and Cartier, in *Paris médical* for April 13, 1912, are credited with the recommendation that fissured nipples be washed, after each feeding of the child, with twenty per cent. alcohol, and one of the following fluids be then applied by means of a camel's hair brush:

- (a)
R Balsami peruviani, }ana 2.5 grammes;
Tincturæ arnicæ, }
Liquoris calcis,15.0 grammes;
Olei amygdalæ expressi,30.0 grammes.

Misce.

- (b)
R Tincturæ benzoini, }ana 15.0 grammes.
Tincturæ tolitanae, }
Misce.

(c)

- R Sodii boratis,8.0 grammes;
Tincturæ benzoini,12.0 grammes;
Glycerini,20.0 grammes;
Aque rosæ,40.0 grammes.

M. ft. solutio.

- (d)
R Aquæ hydrogenii dioxidi,5.0 grammes;
Glycerini,10.0 grammes.

Misce.

After the lotion has been applied the nipple should be covered with gutta percha or sterile gauze.

In certain cases the following ointment may preferably be employed:

- R Mentholi,ana 0.5 gramme;
Cocainæ hydrochlorici, }5.0 grammes;
Zinci oxidi,10.0 grammes;
Tincturæ benzoini, }ana 10.0 grammes;
Petrolati, }
Olei theobromatis,30.0 grammes;
Olei rosæ,2 drops.

M. ft. unguentum.

Symptomatic Relief in Prostatic Enlargement.

—E. H. Siter, in the *Therapeutic Gazette* for June, 1912, proposes that in the many cases of prostatic enlargement which cannot bear the prolonged anesthesia and shock attending prostatectomy, dilatation of the prostatic urethra with the finger through a suprapubic opening be practised. He reports seven cases in which this procedure yielded gratifying results. Under either general, spinal, or local anesthesia, a very small suprapubic opening is made, the finger passed in and down the vesical neck, the middle lobe of the prostate removed if it bars the opening into the prostatic urethra, and the finger pushed as far down into the urethra as possible and allowed to remain for five minutes. The bladder is then irrigated with sterile water or normal saline, a catheter introduced through the urethra and tied in, and the suprapubic wound closed. The catheter is left in place for forty-eight hours, and the bladder irrigated twice daily with normal salt solution. After the catheter is withdrawn it should be passed twice daily for several days to relieve the suprapubic wound from strain until it has healed. The daily irrigation should be continued for ten days or two weeks; a one to 6,000 solution of silver nitrate restores tone to the bladder more rapidly than any other preparation.

Several of the author's patients, operated on in 1909, have had no return of vesical symptoms in the intervening years. The advantages asserted for

the procedure are: Absence of shock, absence of interruption to sexual life, brevity of the operation, absence of secondary hemorrhage, promptness of recovery, absence of postoperative incontinence, and the fact that the operation can be done without waiting for the disappearance of cystitis. Being simple and safe, the operation could be repeated in a few years if symptoms returned.

Treatment of Syphilitic Aortitis and Aortic Aneurysm.

—Vaquez and Laubry, in *Bulletins et mémoires de la Société médicale des hôpitaux de Paris*, June 20, 1912, report results obtained by injections of salvarsan and of mercury compounds in twenty-eight cases of syphilitic aortitis, some with or without simple dilatation of the vessel, others with actual aneurysm. Of fifteen patients treated with salvarsan which was administered in series of three injections of 0.2 gramme at eight day intervals, four were remarkably benefited, pain and dyspnea disappearing, the diameter of the dilated aorta diminishing, and the patients being enabled to resume their former occupations. Five others, including four with aneurysms, obtained symptomatic relief lasting at least two months, while the remaining six were not benefited. Thirteen cases, comprising five of aneurysm and eight of simple aortitis, were treated with intravenous or intramuscular injections of cyanide or biniodide of mercury, given in series of twelve injections on successive or alternate days. All these patients, whose condition was equally serious as in those treated with salvarsan, showed prompt improvement in the symptoms, and in two cases diminished size of the aorta was observed orthodiagraphically. Three of the cases uninfluenced by salvarsan were subsequently improved by mercurial injections. Two cases in which the benefit due to mercury had finally disappeared, and one in which neither salvarsan nor mercury had proved efficient, were improved by potassium iodide taken internally in large doses, or by injections of other iodine preparations. Concluding from these results, the authors advise that in specific aortitis or aneurysm intravenous injections of 0.01 gramme of mercury cyanide be preferably given. If they cannot be employed or are badly borne, intramuscular injections of the same salt or of 0.02 gramme of the biniodide should be administered. Iodine preparations should also be given. If results are poor or evanescent, series of injections of salvarsan are entirely permissible, provided care be taken to exclude patients showing symptoms of cardiac weakness, and to favor especially those who have not exhibited symptoms of pulmonary edema at the time of their anginal or other painful attacks.

Radium and Carbon Dioxide Snow in Dermatology.

—Masotti, in *Quinzaine thérapeutique* for June 10, 1912, is credited with having made a comparative study of the action of these two agents in various skin affections. He concluded that radium was valuable for epitheliomata of mucous membranes, while carbon dioxide snow was especially useful for small pigmented naevi. Good results were also to be obtained by the use of the latter agent in keloid growths, senile warts, and lupus.

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A MYSTERY OF ETHER ANESTHESIA.

If one ounce of essential oil of orange and three ounces of water are placed in the hot water bottle of Gwathmey's¹ three bottle vapor anesthesia apparatus, and ether in the other two bottles, not only is the odor of the anesthetic completely disguised, so that the patient is unable to tell when its administration begins, but other important results are obtained; the patient passes into surgical unconsciousness without any preliminary stage of excitement, anesthesia is easily maintained with less than half the quantity of ether required by the usual cone method, and the patient quickly and comfortably regains consciousness without vomiting or even nausea, except in very rare instances.

Four operations were performed at the United States Naval Hospital, Brooklyn, on September 9th, on typically robust and not conspicuously temperate service patients, one for hernia, one for double hernia, one for varicose veins, and one for hemorrhoids, the ether being administered according to the foregoing method by its inventor, Dr. James T. Gwathmey. Owing to the somewhat inaccurate reports contained in the newspapers, the facts herein noted were obtained from the surgeons present. In all these cases anesthesia was obtained with a total absence of the usual un-

pleasant phenomena and sequelæ. Recovery followed hard upon the completion of each operation, and the patients presented a perfectly normal appearance. Examination of the urine was negative. In one case, that of the hemorrhoids, there was a temporary retention of urine, a common sequel, however, of such operations. The ease with which anesthesia was induced was the occasion of surprise and comment on the part of the attending surgeons of the navy, who saw immediately the great advantages presented by this method for use on board ship, doing away, as it does, with the necessity for the cumbersome gas oxygen apparatus, and cutting the necessary supply of ether in half; two ounces an hour are ample in this method.

Those who have read the inventor's description of his vapor apparatus² will recall that it was suggested that oil of bergamot or terpineol be used as a preliminary inhalation. Doctor Gwathmey was accidentally made aware of the singular effect of penetrating odors preliminary to anesthesia by his practice of soothing and reassuring frightened children by putting a few drops of the nearest convenient perfume on the inhaler and inviting them to note the familiar and harmless result. Observing the quiet manner in which the little patients subsequently lapsed into unconsciousness, he cast about for an odor of superior penetrating quality. He noted in Tigerstedt's *Physiology* the statement made by Zwaardemaker, after tests with his olfactometer, that essential oil of orange had ten times the penetrating quality of ether vapor, 0.00005 mg. in fact sufficing perceptibly to affect one liter of air. So marked, however, was the calming effect of this oil that Doctor Gwathmey could not dismiss the idea that it had some anesthetic effect of its own, and experiments on guineapigs were required to dispel the illusion. These animals exhibited a philosophic calm that might be construed as an expression of enjoyment, but were not rendered in the least unconscious.

We are confronted here with a problem that has so far eluded solution. The problem of *noci* and *anoci* associations finds instant solution, at least as far as its practical aspect is concerned. With a few drops of oil of orange we accomplish all that formerly demanded much preliminary psychic care, gas oxygen inhalations, and injections of novocain and quinine and urea hydrochloride before and after anesthesia. Are pleasant odors narcotic to the olfactory nerve? Is that some explanation of their widespread and agelong use? Certain unpleasant odors are undoubtedly terrifying to animals, those of their enemies, for example. If pleasant odors are indeed sedative to the olfactory nerve, does that

¹*Journal of the American Medical Association*, December 17, 1911.²*Loco citato*.

suffice to explain their extraordinary influence, at least when followed by ether, over the entire nervous system? Is there merely an association of ideas? The smell of ether is associated with the surgical knife in the minds of adults, and is terrifying to children from its irritating qualities. Perhaps the very familiarity and the harmlessness associated with the odors of flowers and fruit are sufficient to suggest powerfully to the subject that what he is about to undergo cannot be dangerous, or even unfamiliar.

EXPERIMENTS ON ANIMAL TUMORS.

It is a well known fact that tumor cells show two peculiar characteristics, very quick growth and very rapid dissolution. Of the etiology of the growth we know very little, but we are much better acquainted with the chemical manifestations which occur during the period of disintegration. It has been shown that an increased and abnormal activity of fermentation is manifest during the dissolution of the cells. Therefore, the aim of all experimenters has been to increase this fermentative activity and so influence the autolysis of the tumor cells without injury to the organism itself, that is, to find substances which show a "tumor affinity." Following this reasoning Neuberg, Caspari, and Löhe report very interestingly on their experiments with such tumor affinity substances in the *Berliner klinische Wochenschrift* for July 22, 1912. The metals tried were tin, lead, arsenic, antimony, vanadium, mercury, copper, cobalt, silver, gold, platinum, iridium, ruthenium, osmium, palladium, and rhodium. The best results were obtained with combinations of copper, tin, platinum, and especially of cobalt and silver. The authors give a list of the metals, with the amount used in the combination, in milligrammes; for example, in a mouse of an average weight of fifteen grammes the tumor dissolving dose of platinum is 0.075 mg., or one to 200,000; of cobalt, one to 15,000. They assert that the effect of the solution injected into the circulation is fulminating (*blitzartig*); a single injection was enough to dissolve a tumor of considerable size in a period of twenty-four hours. The experiments were then transferred to the rat and dog, in which the same good results were obtained. When the tumor was in the condition of solution the authors were able to extract therefrom with a syringe, a fluid which in the mouse was about 0.5 c. c.; in the rat, from two to three c. c., and about seventy c. c. in the dog. This fluid thus collected contained only minimal traces of albumin; it consisted mainly, in a typical autolysate, of albumoses, peptones, and aminoacids. The red coloration of the biuret reaction showed that there were present decomposition pro-

ducts of albumin. The formation of the autolytic fluid of the disintegrated tumor the authors compare with lysis in pneumonia. The authors assert that they have found a combination of metals which will attack and dissolve carcinoma as well as sarcoma cells in mice, rats, and dogs, without injury to the organism itself.

According to these experiments we would have now two chemical substances which produce a disintegration of malignant tumors in animals without injury to the host, one the eosin selenium combination of von Wassermann, of which we spoke editorially in our issue of January 20, 1912, and the other, the metal combination referred to above.

THE TREATMENT OF HEMOPHILIA.

Although considerable progress has been made in recent years in the treatment of this disease, certain textbooks on treatment and practice, even though recently published, fail to mention it. This leaves the practitioner who depends solely upon these works without resource in a malady which at any moment may compromise life. In some instances, a useful agent is mentioned, but its clinical value, though amply verified in the practical field is made light of on the basis of laboratory experiments which are themselves unable to stand scrutiny and serve only to mislead the practitioner. In truth, the therapeutic field is now rich in measures capable, not only of thwarting the dangers to life of hemophilia, but even of rendering major operations as safe in hemophiliacs as in subjects possessed of normal blood.

The older remedy of the series, calcium, has been assailed on the plea that it failed *in vitro* to produce coagulation, but this is plainly refuted by the fact that the formation of emboli is one of the untoward effects of excessive doses of calcium salts—the action of which on the living blood, moreover, is not exemplified by test tube experiments. Calcium chloride, owing to its many defects, is no longer used, but calcium lactate in fifteen to twenty grain doses three times a day, does not disturb the stomach and is an efficient agent in most cases. When an operation of any magnitude is to be performed, however, desiccated thyroid gland in three grain doses after meals is preferable. If the coagulability of the blood is watched, coagulation will be found to occur with increasing rapidity, in from twenty to three minutes for example. This provides an unerring guide for the scientific application of a measure which has rendered such operations as nephrectomy, the removal of large areas of necrosed bone, and others, quite safe where death would otherwise have resulted.

Another agent capable of increasing actively the coagulating power of the blood is fresh blood serum. Indeed it affords the great advantage over all other remedies of shortening the coagulation period immediately, thus serving admirably in emergency cases. Human serum may be employed or that of any animal,—preferably the horse, and excepting, where possible, that of the dog, ox, and goat, which sometimes produces toxic effects. The serum should be injected in ten to twenty c. c. doses into the veins and repeated as necessary. Small doses are worse than useless. If fresh horse serum cannot be obtained, the normal horse serum obtainable in some shops, or diphtheria or tetanus antitoxine, though inferior, may be tried instead. Another advantage in favor of fresh serum is that its application to any bleeding surface will, even in hemophilics, rapidly control hemorrhages which resist all other measures.

A FRENCH TRANSLATION OF PARACELSUS.

It is announced that the Librairie générale des sciences occultes de Paris will publish by subscription a French version of the complete works of Paracelsus,¹ the translation to be made by M. Grillot de Givry and collated with the German editions. This will be the first time that Paracelsus has been completely rendered into French, although a French translation of *Chirurgia magna* was published in the sixteenth century, and English, German, and Dutch versions of other works appeared about the same time. In 1804, an English translation of the hermetic and alchemical writings of Paracelsus, by Arthur Edward Waite, made its appearance in two huge volumes, and a casual inspection of this curiosity will suggest to any one that this phase of the work of the famous pharmacist, surgeon, and quack-salver will have no great following, even when transmitted through a medium so clear and lucid as the French language. Few things in medical literature are so obscure and involved in phraseology as the so called spagyric writings of Paracelsus, and if he had had as many commentators as Galen it would not have mended matters much. Many of his other writings, *Liber paragranum*, for instance, reek with the sort of obscenity found in the lowest type of Elizabethan farce, which the poet Swinburne likened to an incrustation of "dried and congealed filth." These things could well be omitted from any translation of Paracelsus, whose real contributions to medicine are his surgical and pharmaceutical treatises, his original accounts of endemic goitre and

miners' phthisis, his innovations in regard to the use of mercury and other drugs, and his pamphlet on mineral baths, which is as interesting as Montaigne's *Journey into Italy* for its information about the health resorts of the sixteenth century.

Two years from the last midnight of the present year will be the four hundredth anniversary of the birthnight of a far greater than Paracelsus, no less than Andreas Vesalius, the founder of modern anatomy (December 31, 1514), whose great work has never been translated. Could there be any better tribute to his memory than a good English version of the most effective and interesting passages in the *Fabrica*?

EPIDEMIC OF ICTERUS.

An interesting report of an epidemic of icterus comes from Elisabethgrad in South Russia. The textbooks pay very little attention to the epidemic character of the disease, and the only good authority on the question is Hennig, who in 1890 collected from the available literature reports from eighty-six epidemics. Dr. S. Weissenberg gives a review, in the *Deutsche medizinische Wochenschrift* for August 1, 1912, of forty-four cases of icterus which occurred from July, 1909, to November, 1910, that is, the epidemic spread over seventeen months, reaching its maximum during the months of October and November, 1909, then falling off, until the same two months of the following year again showed a large increase. From this fact the author concludes that the infectious form of icterus appears only in the fall. As to sex, it was noted that women were more easily attacked than men, and that adults had more cases than children and adolescents. The epidemic was observed not only in the city of about 75,000 inhabitants, but in the surrounding country. Rarely the disease started suddenly, with a slight chill and vomiting and a few hours later icterus developed; usually the patient complained for three days of headache, nausea, and loss of appetite, and icterus appeared between the third and fifth day. Coincident with the appearance of icterus the liver and spleen became painful and sometimes the kidneys were also attacked. Itching of the skin and slowness of pulse which usually accompany icterus were also found in these cases. The temperature only very seldom deviated from the normal. The average period of the attack was about fourteen days, and the attack itself was slight, but tended to recurrence. Only one patient died, but it is doubtful if icterus was the cause.

THE PLAGUE SITUATION.

Although strenuous efforts have been made to eradicate plague in Porto Rico, so far it has not been possible to stamp out the disease. *The Public Health Reports* for September 6th announce four new cases, from September 2nd to September 5th, two in San Juan, and two in Santurce. This makes a total number of cases reported to the present time of fifty-three; but it is reassuring that the authori-

¹*Œuvres Complètes de Philippe Auréolus Theophraste Bombast Hohenheim dit Paracelse.* Traduites pour la première fois en français et collationnées sur les Editions allemandes, par Grillot de Givry, Paris, 1912.

ties have succeeded in confining the epidemic to the city of San Juan, including its two suburbs. The examination of rats still continues. From New Orleans we hear that the killing of rats is as carefully carried out as in the beginning of the scare. Up to August 28th, 2,976 rats had been collected from the water front and only one was found to be infected, on July 18th. In California plague still persists among the ground squirrels, and among those caught each week in the counties Contra Costa and Alameda there are usually found some infected; but no case of human plague has occurred in the State since September 18, 1911, when one was noted in San Joaquin county. San Francisco and Oakland have been free from plague for nearly three years, but to protect these cities from reinfection of rats by ground squirrels, a squirrel free zone has been maintained around the cities of San Francisco bay. In South America cases of plague have recently occurred in Brazil, Chile, Ecuador, and Venezuela; the disease is also present on the island of Trinidad.

Medical Law.

VIII. CIVIL MALPRACTICE.

In the case of *Rogers vs. Kee*, 137 Northwestern Rep., 260, a Michigan jury gave a verdict of \$1,000 for injuries resulting from an improper diagnosis, and ensuing treatment of a dislocation of the hip and fracture of the neck of the femur. The defendant, being dissatisfied with the outcome of the trial, appealed to the Supreme Court, which affirmed the judgment.

It appears from the record of the case that plaintiff, a man fifty-five years of age, while lifting a circular saw weighing from 130 to 140 pounds, and turning to carry it, felt something give way in his hip, causing him to drop the saw. He continued to work during the day, mostly in a sitting posture, and at night walked home, about half a mile, using two canes. He went to work the following day, which was Saturday, and again on Monday, but on Monday evening his condition was such that he called in defendant for medical treatment.

On defendant's arrival plaintiff informed him of the circumstances of the trouble, and said he thought he had a bad sprain of the hip. There is some conflict of testimony as to what occurred on this and on subsequent visits of defendant. Defendant testified that he found no symptoms of a fracture of the femur; that he made such an examination as would have disclosed any fracture or dislocation had there been one; that he diagnosed the trouble as sciatica and prescribed the application of a mustard plaster; that upon visiting plaintiff the following day he concluded from plaintiff's statement that there was no pain, that the trouble was more probably paralysis and not sciatica, and ordered plaintiff to rub the muscles, but ordered no further treatment; that he continued his visits for nearly a month and was still uncertain what ailed plaintiff, but thought he had some spinal trouble and suggested locomotor ataxia; that plaintiff was able to be up and around, but with difficulty, and that he furnished plaintiff crutches.

On the other hand, plaintiff and his wife testified that when defendant first called he made no physical examination, but at once declared the trouble was sciatica; that plaintiff was lying in bed and told of the incident and when he first felt the pain; that defendant indicated on the hip where a mustard plaster should be applied and left, remaining in all only about five minutes. That on the following day, he made no examination whatever; on the fourth day, he found plaintiff sitting up and asked him to walk. Plaintiff informed him that he was unable to do so, but by the aid of a chair managed to crawl to

the bed to submit to an examination. Defendant then felt the parts, but made no movement of the limb nor measurements, and said that everything was all right; that the hip was then swollen, and defendant gave instructions to massage and rub it with a liniment which he prescribed; that this instruction was carried out by plaintiff's wife, though it was very painful, and defendant was informed that it hurt to move the limb, and that the leg had become shortened, but defendant said it was simply a temporary contraction of the sciatic cord. When plaintiff asked about consulting a specialist, defendant said it would be useless and throwing away money. That on the eleventh day, without making any further tests, measurements, or diagnosis of any kind, he put plaintiff on crutches and directed plaintiff to exercise the limb, and had him swing it back and forth as much as he could, to see what action could be produced. On the thirtieth day, he ceased to pay any further attention to the case. Plaintiff and his wife testified that since lifting the circular saw plaintiff had sustained no fall or stroke on the hip or accident of any kind.

About four weeks after defendant ceased his visits, plaintiff consulted another physician, who found him suffering from a fracture of the neck of the femur and a dislocation which had not been reduced, and which had existed for some time, a fibrous union having developed. The limb was shortened over two inches, and could be projected backward and forward, but not sidewise. Other physicians confirmed the correctness of this diagnosis.

The trial court submitted to the jury the question whether the fracture and dislocation existed at the time defendant was called to examine plaintiff, and the jury found that it did and that defendant was negligent in not making a proper diagnosis. Mr. Justice Steere, of the Supreme Court, in approving this finding, stated the obligation of the physician with regard to making a proper diagnosis as follows:

The law is well settled that a patient who employs a physician is entitled to a thorough and careful examination, such as the condition of the patient and circumstances will permit, with such diligence and methods of diagnosis for discovering the nature of the ailment as are usually approved and practised by medical men of ordinary learning, judgment, and skill, in similar localities. If, by the exercise of such care and skill, the fracture would have been discovered, a failure to properly diagnose is negligence, and it is the duty of a physician, in taking charge of a case where there is a broken limb, to inform and instruct the patient as to his conduct and what caution should be observed in moving or using the limb while it is being treated.

The serious question in the case as presented to the Supreme Court was whether plaintiff's condition at the time of trial was any worse than it would have been had proper treatment been applied. It appears that six of plaintiff's expert witnesses on cross-examination answered in the affirmative the question: "Would you not say that plaintiff's limb shows as good results following a fracture of the neck of the femur as would ordinarily be obtained in a patient of his age under skillful treatment?"

The Court in passing upon this question reviewed much of the expert evidence from which it was manifest that the treatment applied was unsuited and improper for the injury which was found to exist in plaintiff, and that no treatment was given which was suited for that injury; that while it was not certain, or perhaps probable, that his condition would have been better had proper treatment been applied, yet there was a chance that his condition would have been better and that he was entitled to have had that chance; moreover, the treatment prescribed in this case had caused plaintiff unneces-

sary pain and suffering, or at least the jury had so concluded, and pain and suffering caused by improper treatment was a lawful element of damages, and that the judgment should therefore be affirmed.

News Items.

American Association of Obstetricians and Gynecologists.—The twenty-fifth annual meeting of this society will be held in Toledo, Ohio, on September 17th, 18th, and 19th, under the presidency of Dr. N. O. Werder, of Pittsburgh.

Civil Service Examinations Postponed.—Announcement is made by the New York State Civil Service Commission that the examinations which were advertised to be held on September 21st have been postponed to October 5th.

Annual Meeting of the Pennsylvania State Society.—The annual meeting of the Medical Society of the State of Pennsylvania will be held in Scranton on September 24th, 25th, and 26th, under the presidency of Dr. James Tyson, of Philadelphia. Other officers of the society are: Vice-presidents, Dr. Hugh Hamilton, of Harrisburg, Dr. Walter Lathrope, of Hazleton, Dr. G. W. Kehl, of Reading, and Dr. Howard C. Frantz, of Huntington; secretary, Dr. Cyrus Lee Stevens, of Athens; treasurer, Dr. G. W. Wagoner, of Johnstown.

Reciprocity Restored between New York and New Jersey.—Announcement is made that reciprocity in medical licenses between New York and New Jersey has been reestablished. The medical practice law of New Jersey was so amended as to meet the requirements of the New York Board of Regents, consequently it was decided to request the New Jersey board of medical examiners that reciprocal relations be restored between the two States, an arrangement which met with the approval of the New Jersey State board.

Cholera.—Cholera has been reported on the island of Sardinia. The cases, it is stated, have been confined to the Province of Cagliari, where, from August 14th to 27th, there were officially reported 16 cases with 5 deaths. Inasmuch as a large number of immigrants come from southern Italy to the United States, the quarantine officers of the ports at which vessels arrive from there have been notified of the occurrence of cholera and instructed to make careful examinations of all vessels coming from Italian ports. In Russia, from July 14th to 27th, cholera was reported as follows: The city of Astrakhan, 4 cases; the city of Vitebsk, 9 cases; the district of Vitebsk, 2 cases. Cholera is also present at Beirut, Syria.

Southern California Public Health Association.—A special meeting of this organization was held in Los Angeles on the evening of August 10th for the purpose of discussing the treatment of poliomyelitis and the best methods of preventing the disease. Dr. C. C. Browning, president of the association, was chairman, and about one hundred physicians were present, most of them being health officers of various towns and cities in Southern California. At the close of the meeting a committee was appointed to gather information regarding prevention, which, together with the more important facts pertaining to the symptoms and care of infantile paralysis, is to be published in pamphlet form and distributed among the physicians of the State.

Entertainment for German Delegates to the Washington Congress.—A reception is to be held, September 18th at 8:30 p. m., at the German Liederkranz Building, in honor of the 250 physicians from Germany and Austria who are en route to the International Congress of Hygiene and Demography at Washington. Members of the medical profession are cordially invited to take part in this reception. Tickets, at two dollars each, may be obtained from Dr. Wolff Freudenthal, 1003 Madison Avenue. Among the visitors are the following distinguished scientists: Professor His, of Berlin; Doctor Oliven, of Berlin; Professor Lennhoff, of Berlin; Doctor Hamann, of Berlin, delegate from the war department; Professor Brieger, of Berlin, and Mrs. Brieger; Professor Strauss and Mrs. Strauss, of Berlin; Professor Hoffman, of Düsseldorf, and Professor Schattenfroth, of Vienna.

Doctor Flexner Honored.—Dr. Simon Flexner, director of the laboratories of the Rockefeller Institute for Medical Research, has been appointed Huxley lecturer for the current year. His lecture will be given before the Charing Cross Hospital Medical School, London, on October 31st.

Gifts and Bequests to Hospitals.—The will of Professor Henry S. Goldie, of Wilmington, Del., contains a bequest of \$1,000 to the Delaware Hospital and one of \$2,000 to the Methodist Hospital, Philadelphia.

By the terms of the will of Cyprian S. Brainard, a former New York business man, Yale Medical School will receive \$25,000.

By the will of John G. Hess, who died recently in Philadelphia, the German Hospital will receive \$1,000.

Bequests to charitable and religious institutions amounting to over \$60,000 are contained in the will of Nathan Herrmann, who died in New York on August 23d. Beth Israel Hospital will receive \$10,000; Mount Sinai Hospital, \$5,000; Hospital for Deformities and Joint Diseases, \$5,000; Lebanon Hospital, \$2,000; German Hospital, Jewish Maternity Hospital, and the National Jewish Consumptives' Hospital, \$1,000 each.

The sum of \$10,000 was bequeathed to the Flushing Hospital by the late Mrs. Charlotte C. Garretson, a former resident of New Hyde Park.

The International Extension Course at Fordham.—The first of the series of international extension courses organized by the medical faculty of Fordham University was inaugurated on Monday, September 9th, the same day the new Fordham Hospital Clinic was opened. The course, which consists of a series of clinical lectures and demonstrations, conducted daily from September 9th to 28th, will deal entirely with nervous and mental diseases. The lectures will be in English, and will be accompanied by the demonstration of specimens, the presentation of patients, and the use of the cinematograph. Among the men who will assist the faculty of Fordham University are: Dr. Henry Head and Dr. Gordon Holmes, of London; Dr. C. J. Jung, of the University of Zurich; Dr. Alwyn Knauer, of Munich; Dr. Nicholas Achucarro, of Madrid; Dr. Colin K. Russell, of McGill University, Montreal; Dr. J. V. May, president of the New York State Commission in Lunacy; Dr. Carl L. Alsherg and Dr. William A. White, of Washington, and Dr. H. H. Goddard, of the New Jersey State School for Feeble-minded Children. On Wednesday evening, September 11th, honorary degrees were conferred upon several of the lecturers. Dr. Gordon Holmes and Dr. Nicholas Achucarro received the degree of doctor of science, and the degree of LL. D. was conferred upon Doctor Head, Doctor Jung, and Dr. Horatio R. Storer, of Newport, Ky.

Yellow Fever.—In Mexico yellow fever has been present in Merida since August 1, 1911. During this time there have been reported 68 cases with 32 deaths. In San Juan Bautista in the State of Tabasco, there were between May 4 and August 10, 1912, a total of 53 cases with 22 deaths reported. The disease has now made its appearance in Frontera, a port of Tabasco, 55 miles from San Juan Bautista. It presumably was carried from San Juan Bautista by troops transferred to Frontera, where it is reported to be now epidemic. Acting Assistant Surgeon J. F. Eaves has been assigned to temporary duty in the American consulate at Frontera for the purpose of fumigating vessels and performing other necessary quarantine work on vessels prior to their departure for United States ports. In Brazil cases have appeared, during the summer, in Manaos and Pernambuco. In Chile a severe epidemic has occurred at Tocopilla. Cases have also occurred in Colombia. In Ecuador the disease has been present in a number of places. It has also been reported in Peru at Iquitos, where the disease has been epidemic for years. It has also been present in a number of places in Venezuela. There are places in tropical South America and on the west coast of Africa, and undoubtedly also in Central America and southern Mexico, where yellow fever is endemic and has become a disease of childhood. Native adults in these places usually possess an immunity acquired by infection in early life. The disease, however, exacts a heavy toll among nonimmunes coming from uninfected territory, and these endemic foci are a constant menace to all infectible places having commercial relations with them.

The Allgemeiner Electricitäts Gesellschaft (A. E. G.), of Berlin, has cabled President Arthur Williams, of the American Museum of Safety, that the Rathenau gold medal has been placed at the disposal of the museum for award annually for the best device or process for safeguarding life and limb or promoting health in the electrical industry. The competition is open to every country in the world, the only condition being that the device or process must be exhibited at the American Museum of Safety in New York city. This is the first time that the bestowal of a high European honor has been given to an American institution. The Rathenau medal is well known in the European scientific world. It was presented to Dr. Emil Rathenau, president and founder of the Allgemeiner Electricitäts Gesellschaft, the largest European electric company, on the occasion of his seventieth birthday, with the felicitations of the Kaiser for his services in the field of electrotechnics; it was he who introduced incandescent lighting into Germany. One medal will now be cast each year from the original die for the American Museum of Safety to award.

International Committee for Postgraduate Medical Education.—A meeting will be held during the next International Medical Congress in London, August, 1913, by this committee. The programme embraces reports designed as contributions to collective researches concerning the present regular course of medical university instruction and postgraduate education. The members of the International committee appointed by the different governments will select speakers who will report on the following topics: Topic 1. The present regular course of university education up to graduation (including the examinations) and the legal provisions governing the whole course of study. Topic 2. The relation in which the university education stands to the postgraduate education and the present condition of medical postgraduate education. The second part of the meeting deals with the consideration of important timely subjects of instruction, especially the following topics: Topic 1. On the necessity of a reform of instruction with a view to the importance of technical skill in the medical profession. (Regular course of instruction in the university and postgraduate education in later medical practice, special attention being paid to the progress of medical technique.) Topic 2. The importance of social medicine and its collateral lines as a subject for instruction (in the compass of regular and of postgraduate medical education). For the two topics just mentioned, having an equal interest for all countries, the board of the International committee will select the speakers. The address of the International committee is Luisenplatz 2-4, Berlin NW. 6.

A Request to Users of Vaccines in Typhoid Fever.—About six years ago, Dr. W. H. Watters, of Boston, began to use vaccines in the treatment of typhoid fever. Since that time he has thus treated more than one hundred cases and has obtained numerous articles upon the subject written by physicians in various parts of the world. It seems possible, however, that some may have escaped notice. He also realizes that many of the profession may have treated some cases without reporting them. A paper upon the subject is now in the course of preparation. In this it is earnestly desired to incorporate reports from a large number of cases, good, bad, and otherwise. He accordingly makes the following request to the readers of this JOURNAL: Will any one who has used vaccines in the treatment of typhoid fever, whether one case or more, kindly communicate that fact accompanied by name and address of the reporter? If the results have already been reported, a note of the journal in which they appeared will be sufficient. If they have not been reported, a short blank form will be sent to the physician to be filled out. Due credit will be given in the article to each person making a report. If any physician happens to know of other confrères who have any such cases, it will be appreciated if he sends their names. It is hoped that by this means a sufficient number of cases may be collected somewhat definitely to settle the moot question whether vaccines are of benefit in typhoid. Reports of cases will be accepted at any time in the future, but preferably by November or December of the present year. Kindly communicate with Dr. W. H. Watters, director of the Department of Pathology and Bacteriology, Evans Institute for Clinical Research, Boston, Mass.

New Medical Society Formed in Georgia.—The physicians of the Twelfth Congressional District of Georgia have organized the Twelfth District Medical Association, with the following officers to serve for the first year: President, Dr. J. L. Weddington, of Dublin; first vice-president, Dr. L. E. Moyer, of Vidalia; second vice-president, Dr. J. F. New, of Dexter; secretary and treasurer, Dr. C. R. Riner, of Summit.

New Quarantine Station in Peru.—Consul General Robertson, at Callao, Peru, reported on June 19th that the new quarantine station and military sanatorium on San Lorenzo Island in the harbor of Callao were formally inaugurated on June 9th. The sanitary station is stated to be one of the most complete in South America and consists of two main divisions, the quarantine station and the military sanatorium. The first is divided into three sections, one of isolated rooms for contagious cases, one for suspected contagious cases under observation, and the third for the ordinary passenger quarantine service. Special portable beds or stretchers are provided for the careful handling of the sick. The military sanatorium is also divided into three sections, the administration building with the steam disinfecting equipment, laundry, and pharmacy, quarters of the service of boats, pavilions for the troops, private rooms for officers, and private suites for senior officers.

Tuberculosis Day.—Churches and religious societies will be urged to give special attention to the prevention of tuberculosis on Sunday, October 27th, or on some day during the week preceding or the week following that date. This season has been set apart and designated as the Third National Tuberculosis Day by the National Association for the Study and Prevention of Tuberculosis, which makes this announcement. Tuberculosis Day was originally set on April 28th, but was postponed because of a conflict with Conservation Sunday of the Men and Religion Forward Movement, which was held on that date. The observance of Tuberculosis Day in the fall this year will be utilized by antituberculosis workers, not only for the general education of churchgoers on consumption, but also for the purpose of interesting them in the sale of Red Cross Christmas Seals. Millions of circulars and other forms of literature will be distributed. The support of every religious denomination will be asked for. That tuberculosis is a serious problem among church congregations last year, which show that ten per cent. of all deaths among church members are caused by tuberculosis. Based on these figures and on the mortality statistics of the census bureau, over 32,000 of the 33,000,000 communicants in churches in the United States die from tuberculosis every year. This figure assumes that the death rate of 1.60 per 1,000 of population in the registration area applies to all churchgoers, when, as a matter of fact, the rate would probably be higher.

International Congress of Medicine.—This congress will meet in London, England, August 6 to 12, 1913. The executive committee for the United States consists of the following: William S. Thayer, M.D., of Baltimore, president (succeeding Dr. J. H. Musser, deceased); Alfred Reginald Allen, M.D., of Philadelphia, secretary; Frank Billings, M.D., of Chicago; William T. Councilman, M.D., of Boston; George W. Crile, M.D., of Cleveland, Ohio; John B. Elliott, M.D., of New Orleans; J. Marshall Flint, M.D., of New Haven, Conn.; Albion W. Hewlett, M.D., of Ann Arbor, Mich.; Abraham Jacoby, M.D., of New York; Theodore C. Janeway, M.D., of New York; Lawrence Litchfield, M.D., of Pittsburgh; Herbert C. Moffitt, M.D., of San Francisco. Applications for membership in the congress can be obtained from the secretary, Dr. A. R. Allen, 2013 Spruce Street, Philadelphia. Arrangements are now being perfected for a pleasant trip to attend the congress, providing for a tour of England, Ireland, Scotland, France, and the Hague. Several days will be spent in Paris, Brussels, Cologne, Heidelberg, Amsterdam, including an excursion to Isle of Marken. Those who wish, may spend some time in clinics of Vienna and Berlin. Hotel accommodations have been secured in London, and tickets will include all expenses. Sailing from New York, July 10th. Those desiring to register with the party, or who wish a copy of the complete itinerary, will address Dr. Charles Wood Fassett, secretary Medical Society of the Missouri Valley, St. Joseph, Mo.

Pith of Progressive Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL

August 29, 1912.

1. CARLETON R. METCALF: Acquired Hallux Valgus: Late Results from Treatment.
2. WILLIAM PALMER LUCAS: Neurology of Child. II, Mortality and Proportion of Backward Children in Cases of Congenital Syphilis Subsequent to Hospital Treatment.
3. E. W. TAYLOR: Progress in Treatment of Neuroses.
4. HENRY FARNHAM STOLL: Tuberculosis in Aged: Diagnostic Value of Increased Whisper in Interscapular Space.

1. **Acquired Hallux Valgus.**—Metcalf defines hallux valgus as an outward displacement of the great toe, largely from mechanical causes, with inward displacement of the first metatarsal bone, and hypertrophy and erosion of its head. Bunions and hammer toes often accompany it. The longitudinal arch may drop; the anterior arch is nearly sure to do so. In nonoperative treatment an effort is made to hold the feet in approximately normal position by wearing proper shoes and plates. Other forms of treatment have proved of doubtful merit. Advanced cases demand operative treatment. Fifteen operations have been devised and are described. The most acceptable incision, the question of drainage, of splinting, of shoes, and other details of after treatment should be considered carefully in each individual case.

2. **Mortality and Backward Children in Cases of Congenital Syphilis.**—Lucas has followed up a number of children with congenital syphilis after they left the hospital and finds that they exhibit a high early death rate, a high percentage of backwardness, and a lack of following up the initial treatment, which is possibly responsible for the results and shows the need of a follow up system in hospital treatment.

4. **Tuberculosis in the Aged.**—Stoll says that pulmonary tuberculosis is not uncommon in persons past sixty years of age; it has been met with in one person aged ninety-nine years. It is more prevalent than the mortality suggests, as an acute pneumonia is often the ultimate cause of death. It is characterized by extreme chronicity, and by periods of relatively good health. Many people contract tuberculosis from the intimate association with some elderly member of the household who has had a "stomach cough" or "catarrh" for "as long as he can remember." The examination of the sputum of elderly people for tubercle bacilli is much neglected. The recognition of the pulmonary lesion is often difficult, as the physical signs are often masked by some other condition, like asthma or emphysema, and then the key to the diagnosis will often be found in the interscapular space. Enlargement of the bronchial glands in adults speaks for tuberculosis rather than chronic bronchitis or emphysema.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

August 31, 1912.

1. CHARLES L. GREENE: Prognosis in Chronic Heart Disease Adversely Affected by Certain Medical Traditions.
2. W. F. LORENZ and MAXEY P. RAVENEL: Treatment of Diphtheria Carriers by Overriding with *Staphylococcus aureus*.
3. RUFUS COLE: Pneumococcus Infection and Immunity.
4. CURTIS F. BURNAM: Corpus luteum Extract in Gynecological Practice.
5. THOMAS J. WATKINS: Puerperal Infection; Interesting and Practical Features.
6. ROSS MCPHERSON: Radical Treatment of Abortion.
7. FREDERICK J. TAUBSIS: Gynecological Disease in Insane. Relations to Various Forms of Psychoses.

8. P. G. HEINEMANN: Epidemic of Sore Throat in Chicago.
9. LEWELLYS F. PARKER and W. L. ESTES, JR.: Familial Hematuria; porphyrinuria; Association with Chronic Gastrointestinal Dilatation, Peculiar Fits, and Acute Polyneuritis.
10. J. H. SCHRIFF: Automobile and Bicycle Inner Tubes Used as Ice Bags and Hot Water Bottles.

1. Prognosis in Chronic Heart Disease as Adversely Affected by Certain Medical Traditions.

—Greene bases his paper on certain contentions which he deems important. In cases of cardiac insufficiency an early diagnosis is absolutely essential to the welfare of the patient, puts a new light upon the value of subjective symptoms, and a new view as to the symptomatic relation of the lesser cardiac dilatations. Many patients affected by chronic disease, and looked upon as neurasthenics, though they do not as a rule have serious organic heart disease, have impaired heart muscle tonus and extremely dilatable, symptom producing hearts as a part of their fundamental and usually congenital defects in general structural and functional make up. The term "neurasthenia" as an entity has at present little excuse for its retention, and, as it occasions serious errors of omission by reason of its continued prominence in the list of chronic ailments, it should either be dropped, or be given its true value. "Perfect compensation" does not exist, as there is a constant, more or less gradual, but progressive limitation of cardiac response. Long before the onset of emergent or gross symptoms, there are periods when appropriate therapy will sustain and aid an embarrassed heart, relieve suffering, and lengthen life. It is both illogical and dangerous to delay active therapy until symptoms of extreme cardiac exhaustion appear. The cure and avoidance of these conditions are facilitated by newer views we have acquired of the causative agents and portals of infection in acute rheumatism, the better knowledge and methods of diagnosis of syphilitic infection, and newer methods for the intensive treatment of lues. A possibility exists of greatly limiting the large group of myocardial and aortic lesions of syphilitic origin. Chronic cardiac disease, though receiving less critical attention than it deserves, is, although incurable, unusually responsive to intelligent treatment based upon an early diagnosis.

2. **Treatment of Diphtheria Carriers by Overriding with *Staphylococcus aureus*.**—Lorenz and Ravenel give their results in the treatment of seventeen cases of diphtheria by the staphylococcus spray. Six patients were subjects of active diphtheria, three were carriers pure and simple, never having shown local or constitutional symptoms of the disease. Almost invariably bacteriological culture of the throat secretions was negative after six or eight applications of the spray, using a combined nasal and throat spray at four hour intervals on two succeeding days, the first swab for examination being made on the third day. The preparation used was a fresh suspension of *Staphylococcus pyogenes aureus* in normal saline solution, or a bouillon culture twelve hours old, the spray being kept at a temperature of 66° F. Sufficient is used to make the pharynx dripping wet, and the nasal cavities are sprayed until the liquid runs down the back of the throat. The writer concludes from his experiments that pure cultures of the staphylococcus will cause a disappearance of diphtheria bacilli when sprayed

into the throat and nasal cavity. He finds the treatment most effective in those who are carriers pure and simple.

3. **Pneumococcus Infection and Immunity.**—See this JOURNAL for June 8th, page 1218.

4. **Corpus luteum Extract, with Suggestions as to Its Use in Gynecological Practice.**—See this JOURNAL for June 15th, page 1293.

5. **Puerperal Infection.**—See this JOURNAL for June 15th, page 1293.

6. **Radical Treatment of Abortion, with Observations on, and an Analysis of 3,500 Cases.**—McPherson makes the following points in summing up the situation: 1. Abortions are more common than supposed and the sequelæ are frequently serious. When the abortion becomes inevitable after every prophylactic measure has been tried, the following conclusions are believed to have been proved in the author's paper. Complete abortion is rare; in only 13.7 per cent. of the cases analyzed was the ovum expelled entire. All abortions should be carefully examined into, and an exploration of the uterine cavity made. If this is done carefully and systematically according to the methods outlined by the writer the mortality will not be more than 1.8 per cent. in all classes of cases, and not more than 0.016 per cent. in ordinary cases, exclusive of accidents and malignant complications. Satisfactory results in ninety-seven per cent. of all cases is shown by the writer.

9. **Family Hematoporphyrinuria and Its Association with Chronic Gastrooduodenal Dilatation, Peculiar Fits, and Acute Polyneuritis.**—See this JOURNAL for June 8th, page 1226.

MEDICAL RECORD.

August 31, 1912.

1. KARL VON RUCK: Prophylactic Immunization against Tuberculosis; Application in Children.
2. WILLIAM J. M. A. MALONEY: Modern Means of Investigating Mental Processes.
3. WILFRED M. BARTON: Nasal Obstruction Early Symptom of Cardioresenal Disease.
4. H. W. EKSHEIMER: Unusual Conditions Simulating Appendicitis.
5. ROBERT E. COUGHLIN: Treatment of Puerperal Eclampsia.
6. JOSEPH B. GREENE: Removal of Adenoids Preventive Measure after Exposure to Measles.

1. **A Practical Method of Prophylactic Immunization against Tuberculosis.**—Von Ruck has devised a method of immunizing against tuberculosis specifically, as we do against smallpox, although the technique is somewhat different. The vaccine, as he has prepared it ready for use, contains in each c. c. ten mg. of proteins of tubercle bacilli, and a small amount of their fatty extractives in four different proportions. The chemical characteristics of the different proteins and the manner of preparing them are given in detail, so that any one can make an identical product for experiment or use. The bacilli culture used is of human origin and in the manufacture of the product, heat and light are avoided. The smallest dose (0.1 c. c. of a ten per cent. dilution) causes prompt development of the several antibodies, and an increase of alkalinity of the blood, after a single administration. With larger doses (0.1 to 0.6 c. c. of the full strength) the quantitative determination of amboceptor after the first dose was the same as when the dose was repeated, with or without further increase, but the degree of serum agglutination seemed to be in relation to the size of the dose,

and it increased with each additional dose. After one or two additional doses the blood alkalinity increased, but not thereafter. As a rule the administration caused only a temporary tenderness, slight in amount. Satisfactory results were observed in 339 cases. Examination of those treated showed the induced immunity present for three to eight months later, and in one of his earlier cases for eight to fourteen years. The simplicity of giving the remedy hypodermically commends it to the general practitioner.

2. **Modern Means of Investigating Mental Processes.**—Maloney discusses two methods for which he asserts absolute results. The first, or psychoanalytic method (Freud's) endeavors to resolve the mental state into its fundamental constituents, to disintegrate the existing mental structure, the data being obtained from dreams, reveries, reminiscences, and thoughts of the person being examined, together with his reactions to stimulus words. The other method, that of Wundt and Kraepelin, measures all mental processes just as we measure blood pressure, visual acuity, or urea excretion. Simple mental operations such as memorizing, counting, choosing, perceiving, associating, etc., are measured, numerous short tests being made so that freshness, fatigue, attention, boredom, practice, nor noviceship will unduly influence the results, and the average of all mental phases of mental activity will be obtained. This latter method the writer criticises as being too narrow in its limits, since, as we do not know the person's norm, we can hardly measure the disease process, and the obtained results can only serve as a standard by which we may observe improvements.

3. **Nasal Obstruction as an Early Symptom of Cardioresenal Disease.**—Barton reports a case in which nasal obstruction preceded any other symptom of Bright's disease by several years. An interesting point is the fact, which attracted even the patient's attention, that twenty-four hours after beginning a course of digitalis for cardioresenal disease the nasal obstruction was relieved, and in forty-eight hours it had completely disappeared. The writer suggests, in explanation, that the nasal obstruction is in some way due to deficient urinary depuration, to a slight or latent uremia (*petite urémie* of the French), and is a result either of edema of the parts or else a result of vasomotor disturbance.

4. **Unusual Conditions Simulating Appendicitis.**—Emsheimer records some of the rarer mistakes in the diagnosis of appendicitis that have come under his observation, in all twelve, where appendicitis was wrongly diagnosed as the disease present. These cases serve well to prove that the diagnosis of an atypical case of appendicitis, or of an intraabdominal condition simulating appendicitis, is not easy, and show the necessity in all doubtful cases of a most careful history and a searching physical examination.

5. **Treatment of Puerperal Eclampsia.**—Coughlin emphasizes the value of veratrum viride in the treatment of convulsions due to the toxemia of pregnancy, given in large doses at frequent intervals until its physiological action is produced (slowing of the pulse), and either by the mouth or

hypodermically, preferably the latter. The convulsions will cease when its physiological action is produced. When the convulsions are under control, and the general circulation shows improvement, as will occur when the convulsions cease, a rapid delivery is indicated.

BRITISH MEDICAL JOURNAL.

August 21, 1912.

1. L. ROGERS: Specific Curative Action in Amebic Dysentery of Hypodermic Injections of Soluble Salts of Emetine.
2. H. S. RANKEN: Granule Shedding in Trypanosoma gambiense.
3. F. W. BURTON-FANNING and W. J. FANNING: Results of Sanatorium Treatment.
4. G. H. K. MACALISTER: Antiformin in Sputum Examination.
5. H. WILSON: Picric Method of Staining Tubercle Bacilli.

1. **Emetine in Amebic Dysentery.**—The dose and some of the results of this treatment were discussed in a previous communication (see this JOURNAL for July 13th, page 89). Rogers now reports having treated amebic abscesses of the liver by aspiration and injection of emetine into the cavity, with uniformly excellent results and the complete avoidance of secondary pyogenic infection of the cavity, which is the common result of the open drainage. Recovery is very prompt. He found that the disappearance of the leucocytosis is the safest guide by which a cure of the abscess can be determined. Another interesting and valuable fact is that the action of emetine in curing dysentery and amebic abscess is specific and confined to those cases which are due to the action of the amebas of the *histolyca* group. So thoroughly specific is this action that Rogers believes that where clinical microscopical facilities are not available the response to the use of emetine is diagnostic. Where the dysenteric symptoms are not affected by a few injections of the drug, the condition has always been found to have been due to some other cause than the ameba. He believes that this specificity of action goes far to settle the beliefs of some that the ameba is not the cause of dysentery.

2. **Granule Shedding.**—Ranken finds that the "infective granule" of trypanosomiasis occurs in *Trypanosoma gambiense* in cases of sleeping sickness. He has observed the granule shedding, and has seen the free granule in fluid from lymph glands and internal organs—liver, spleen, and lung. The granule is at first pyriform, but a flagellum develops. It is actively motile, and can be distinguished from "blood dust."

4. **Use of Antiformin.**—Macalister obtains but slightly better results with sputum examination by this method than by careful examinations without it. He has compared several series of sputa stained by the methods of Ziehl-Neelsen, Herman, Much, and Gasis. He finds the old Ziehl-Neelsen method superior to all others. Taking the results of the Ziehl-Neelsen method as 100 per cent., Herman's gave 100, Much's 96.66, and Gasis's 69.23 per cent.

LANCET.

August 24, 1912.

1. H. MORRIS: History of Syphilis, etc.
2. W. B. ALCOCK: Vaccination for Typhoid Fever by Living Sensitized Bacilli typhosi.
3. J. FRASER and I. F. MCGOWAN: Method of Vaccinal Treatment of Surgical Tuberculosis.
4. C. CLARKE: Nerve Ending Anesthesia.
5. ETHEL M. N. WILLIAMS: Nature of Colon Bacilluria.
6. AGNES F. SAVILL, C. W. M. MORTON, and V. HIRST: Possible Feeding of Suffrage Prisoners.

2. **Vaccination for Typhoid Fever.**—Alcock, as a result of a series of tests on man, draws the

following conclusions: 1. The successful experiments on man by the method of Besredka have taken us one step forward in the application of vaccination. Can not the sensitized living *Bacilli typhosi* be considered in the same light as the virus of smallpox, attenuated or modified by the immunized calf lymph, which gives rise to a specific immunity that may be veritably called ideal? 2. The sensitized living bacteria remain alive over four months without exceptional precautions, and their preparation is simple, rapid, and practical. 3. The first dose for a woman of average size should be 500,000,000 sensitized living *Bacilli typhosi* in one c. c. of 0.8 per cent. saline. For a man of good physique the first dose should be 750,000,000 in a similar amount of saline. The second doses, seven to nine days later, should be double these quantities. The dose of 500,000,000 represents one c. c. of a culture of twenty-four hours on gelose without peptone in 100 c. c. of saline. Diluted one to forty, and at the dose of 0.1 c. c., it fixes 0.1 c. c. of titrated guinea pig's complement. 4. There is no general reaction and only an insignificant local reaction following these injections. The patient is in no way obliged to change his daily routine of living. These results are in marked contrast with his experience of the reactions following the injections of the same number of killed bacilli in the vaccine of Wright-Leishman. 5. An elevated temperature, a previous history of typhoid fever, and the time of menstruation are not contraindications to the giving of the living sensitized *Bacilli typhosi*. 6. The sera of persons injected thus have not been found to deviate complement, and only rarely to agglutinate an emulsion of a young culture. Their addition, however, remarkably increases phagocytosis. Probably they also contain antiendotoxine bodies. 7. The detected presence of specific amboceptors, agglutinins, bacteriolysins, cannot be said to show the degree of immunity attained. The results of experiments *in vitro* can not be interpreted as denoting the state of the patient's resistance. 8. It has been asserted by all authors that vaccination by living microorganisms is the most effective, and, moreover, this has been proved by the experiments on chimpanzees made by Metchnikoff and Besredka, and as their observations on man have proved the innocuousness of the living sensitized bacilli typhosi, he presumes to conclude that this method ought by preference to be applied to man.

3. **Vaccinal Treatment of Surgical Tuberculosis.**—Fraser and McGowan have used a vaccine made from tuberculous pus from human cases of tuberculosis by extraction of the soluble principles and sterilization of the resulting fluid. They use that made from pus from bone cases for bone cases, and that from glands for gland cases. In most instances they employ the aspirated pus from each case for the vaccine for that case. They do not incise the smaller lesions but aspirate them. Their results in the ten cases so far treated have been very satisfactory; healing has been more prompt than by any other method yet tried and has taken place in cases which had proved resistant to other methods.

5. **Colon Bacilluria.**—Williams holds that

colon bacilluria is a late stage in chronic intestinal disorders, and that it is by traversing diseased intestinal walls that the organism gains access to the urinary tract. Williams's examinations were all of women, and she is opposed to the view that the short, straight, female urethra has anything to do with the cause of the condition, for she found no bacilli in cases free from chronic intestinal disorder, though she examined some seventy cases in all.

JOURNAL DE MÉDECINE DE PARIS.

August 24, 1912.

1. MAURICE and ANDRÉ BERNAY: Salvarsan in Tuberculosis and Anemia.
2. V. LE LORIER: Urodiagnosis and Uroprognosis by Leucocytes in Vomiting of Pregnancy.

1. **Salvarsan in Tuberculosis and Anemia.**—The Bernays have nothing but praise for the extraordinary results they have obtained in these conditions from the injection of salvarsan. If anemia does not respond to the treatment, they advise careful search for a possible latent cancer.

2. **Urine of Pregnant Women and Iron Perchloride.**—Le Lurier has found that the addition of iron perchloride to the urine of pregnant women suffering from uncontrollable vomiting and in danger of coma, produces a port wine color owing to the presence of acetylacetic acid. This test is therefore pathognomonic of threatened coma.

PARIS MÉDICAL.

August 24, 1912.

1. GOUGEROT: New Mycosis: Bloch's Cladiosis.
2. CARRIÈRE: Cranial Encephalocele or Meningocele.
3. DOPPEL: Bacteriological Diagnosis of Asiatic Cholera.

1. **A New Mycosis.**—Gougerot has given the name of cladiosis to infection by *Mastigocladium Blochii*, a new ray fungus; the symptoms are warts, lymphangitis, and suppurating adenitis. Autoinoculation by professional surgical wounds reproduces the warts. The treatment is the same as for sporotrichosis, i. e., potassium iodide, four to eight grammes daily; this dose has cured in two weeks a case of three years' standing.

2. **Encephalocele or Meningocele.**—Carrière avers that this condition may be cured by prolonged compression, preceded preferably by lumbar puncture. Excision and autoplasmic occlusion are useful, but should not be performed except in case of threatened ulceration or rupture, before the subject is three years old.

PRESSE MÉDICALE.

August 11, 1912.

1. L. BOLDIN: General Treatment of Anthrax.
2. VIGNAUD: Treatment of Anthrax with Pyocyanase.
3. L. FORTINEAU: Antagonism between *Bacillus anthracis* and *Bacillus pyocyanus*.

August 17, 1912.

1. PAUL RECLUS: Local Anesthesia and Surgeons Who Operate on Themselves.

1, 2, 3. **Treatment of Anthrax.**—Boidin says the results of the use of salvarsan in Germany are worthy of further study. Malignant pustule sometimes yields to such measures as cauterization, iodinated or phenolated injections, amputations, etc., but not if complicated with edema. If septicemia supervenes, death is sure, unless the antianthrax serum is used. Boidin cites several cases where this serum was useful. He also mentions pyocyanase.—Vignaud discusses pyocyanase, recalling

that the dose is twenty c. c. hypodermically, and is followed by intense febrile reaction, with chills, and pain around the site of injection. He saved one patient by a second injection. Dysphagia and symptoms of compression of the glottis are certain signs of approaching death.—Fortineau gives the results of his laboratory experiments with pyocyanase on rabbits, guinea-pigs, and cattle. As the substance used by Fortineau was not an enzyme, and was exhibited in a mineral medium, he prefers to call it pyocyanin. His results were encouraging, also those in subsequent experiments with human patients.

4. **Local Anesthesia and Selfoperating Surgeons.**—Reclus, amused at the applause of the lay press for the heroes who have operated on themselves—"autotomists" he calls them humorously—tells of four operations of the kind that occurred among professional friends. There was no pain, no shock, no unpleasant sequel. There are no objections to selfoperation save those imposed by Nature, viz., our short arms, our too slightly flexible spinal column, and our comparatively small field of vision.

SEMAINE MÉDICALE.

August 14, 1912.

- R. DE BOVIS: Hysterectomy for Intractable post partum Hemorrhage.

Hysterectomy for post partum Hemorrhage.—De Bovis recalls that certain post partum hemorrhages resist even compression of the aorta and naught remains but hysterectomy, not the vaginal, but the abdominal. De Bovis likes the technique of Labhardt, which requires only a bistoury or pair of scissors, a uterine clamp, a pair of knitting needles, and a stout ligature. Disinfection is best done with tincture of iodine and the operation begins with an incision eight cm. in length, median, vertical, and starting at the symphysis. This does not expose the intestinal coils. The uterus is seized with the clamp, drawn out of the wound, and held vertically out of the way by an assistant. Meanwhile the operator ties the ligature around the root of the organ immediately above the bladder, taking in the annexa and the ligaments. Hemorrhage is at once arrested and the operation may be finished in a leisurely manner. To save the uterus from prolapse, it is transfixed in the form of a cross with the knitting needles and amputated two cm. above. The stump may be cauterized; and then powdered with an antiseptic, or surrounded with gauze.

MEDIZINISCHE KLINIK.

July 7, 1912.

1. A. ELSCHING: Present Status of Therapeutics in Senile Cataract.
2. O. ROSENTHAL: Massage in Skin Diseases.
3. ANSWERS TO QUESTIONS Sent Out Referring to Decapsulation in Acute and Chronic Nephritis (*To be concluded*).
4. ERNST RENG: Conservative Treatment of Uterine Myomata with Röntgen Rays.
5. WALTER KREBS: Wassermann Reaction and Therapeutics of Late Lues.
6. OTTO DANDEL: Conservative and Operative Treatment of Diseases of Women in Spas.
7. EMIL PEIFFER: Influences of Thermal Cures upon Diabetes Mellitus.
8. H. LUFMANN and ALFRED LINDEMANN: Localization of Infant Mortality in Berlin and Question of Habitation (*Continued*).
9. FRITZ HOPPE: Tenagantan as Antidiarrhetic.
10. ARNO E. LAMPE: Importance of Thymus Gland from New Experiments.
11. HOFFENBACH: Bandage in Maxillary Fractures.

July 14, 1912.

12. A. MAYOR: Diuretics.
13. C. HIRSCH: Syphilis and Kidney.
14. FRANZ M. GROEDEL and ED. SCHENCK: Röntgenologie. I. Symptoms of Nonsurgical Diseases of Stomach.
15. CHOLEVA: Asthma.
16. PAUL LAZARUS: Radium Emanation and Essence of the Spa. (*Brunner Geist*).
17. EUGEN BRODELD: Ulcus molle on Finger Produced through Autoinfection.
18. ESAU: Necrosis of Hand from Dressing with Solution of Aluminum Acetate.
19. H. LIEPMANN and ALFRED LINDEMANN: Localization of Infant Mortality in Berlin and Question of Habituation. (*Concluded*).
20. ANSWERS to Questions Sent out Referring to Decapsulation in Acute and Chronic Nephritis. (*Concluded*).
21. R. WERNER: Chemical Imitation of the Effects of Rays and Chemotherapeutics of Carcinoma.
22. STEPHAN SZESZT: Effect of Cholin Salts upon the Blood and the Influence of Colloidal Metals upon Mouse Tumors.

July 21, 1912.

23. STENGER: Complication of Acute Suppuration of Middle Ear.
24. F. EICHELBURG: Importance of Examination of Spinal Fluid.
25. GUSTAV LÖFFLER: Prophylaxis of Phthisis.
26. LANDSBERG: Effect of Physical Therapeutics in Derangements of Intestinal Apparatus.
27. E. KRETZMER: Technique of Treatment with Solid Carbon Dioxide.
28. BELA BOSÁNYI: Motility of Rigid Joints Produced through Thermal Therapeutics.
29. OSWALD LEVINSTEIN: Eighth Nerve and Salvarsan.
30. O. BURWINKEL: Nitroglycerin and Seasickness.
31. JULIUS SPANIER: Critical Review on Article on Influence of Heat upon Mortality of Nuxlings.
32. WALTER SCHÖLLER and WALTER SCHRAUTH: Chemistry of Intoxication and Therapeutics of Organic Mercury Combinations.
33. HOFFENDAH: Diseases of Dental Pulp.

July 28, 1912.

34. S. EHRMANN: Remains of Syphilis in Tissues; Prognostic Importance.
35. P. LANGE: Indications for Opening of Inflamed Labyrinth.
36. ERICH STOECK: Clinical Diagnosis of Hypoplastic Aorta in Lymphatics.
37. A. STRUBELL: Influence of Balneotherapeutics upon Heart.
38. MATTHIAS GÖCKEL: Is Use of Frequent Washing of Stomach Superfluous in Chronic Static Insufficiency of the Stomach?
39. IDE: Influence of Marine Climate upon Circulation of Blood.
40. A. PULAWSKI: Iodine and Thyroidine as Causes of Basedow's Disease in Treatment of Goitre.
41. G. RITTER: Death under Local Anesthesia.
42. H. ARNDT: New Limb Bandage.
43. HUGO FEILCHENFELD: Bandage in Ophthalmology.
44. KRIEGER: Colloids and Mineral Spas.
45. ERNST BARTH: Chronic Inflammation of Middle Ear.

2. **Massage in Skin Disease.**—Rosenthal remarks that massage has not received the attention it deserves in the treatment of skin diseases. It has great influence upon all anatomical parts and on the physiological functions of the skin, especially upon the regeneration of elastic tissue. Massage should be used in all affections which are the result of hypertrophy of the collagen; it regulates the blood and lymphatic system, exerting a beneficial influence upon the nervous elements of the skin. Massage, furthermore, is effective in the hypertrophies of the sebaceous glands and increases tonus and metabolism.

10. **Importance of Thymus Gland from New Experiments.**—Lampé observes from his experiments and from the literature that the thymus is a gland of great importance for the living organism. If the gland, when fully developed, is extirpated, death will soon follow. It seems as if its chief function consists in the binding of acids, thus acting as an antitoxicant. This action also explains, after extirpation of the thymus, the disturbances in calcium phosphate metabolism in osseous changes, and in changes of the central nervous system. A complicated relationship exists between the thymus and the glands with internal secretion, especially between the thymus and the spleen, the functions of which organ find in old age great support and even a substitute in the action of this gland.

14. **Röntgenological Symptoms of Nonsurgical Diseases of the Stomach.**—Groedel and Schenck say that stomach disturbances of the stomach can

be seldom diagnosticated röntgenologically; while hypersecretion is no subject for Röntgen examination, hyposecretion will sometimes give results. Gastropitosis is a better field for Röntgen rays.

16. **Radium Emanation and the Essence of the Spa.**—Lazarus opposes the prevalent opinion that radium emanation plays an important rôle in the beneficial effect produced by spas. There is no doubt that this emanation is effective, but a good many other items, chemical as well as psychological, are to be considered.

17. **Ulcus molle on Finger Produced through Autoinfection.**—Brodfield reports an interesting case of autoinfection of an ulcer. The patient had acquired a small wound on the dorsal surface of the right thumb, which healed well under aseptic treatment. Shortly afterward the patient acquired three soft chancres, situated on the prepuce, each the size of a pea. They increased in size, forming finally one ulcer, and a right sided bubo appeared. Nineteen days after the infection the bubo had to be opened; at this time the chancre on the penis was healing, when the old scar on the thumb became putrid, showing an ulcus molle which, as well as the other symptoms, disappeared under treatment.

18. **Necrosis on the Hand from Dressing with Solution of Aluminum Acetate.**—Esau reports three cases in which dressings with solution of aluminum acetate produced necrosis of the injured hand. The effect of the dressing was similar to the burns seen from carbolic acid.

29. **Eighth Nerve and Salvarsan.**—Levinstein reports another case which shows that among all the cranial nerves the eighth is the most easily affected by salvarsan. In his case disturbances in the optic, oculomotor, trigeminal, facial, acoustic, glossopharyngeal, and hypoglossal all occurred. After a number of months the functions of all the nerves became normal, with the exception of that of the eighth nerve, which remained permanently injured.

30. **Nitroglycerin and Seasickness.**—Burwinkler states that nitroglycerin is effective in the treatment of seasickness. He thinks that the cause of the disease lies in a contraction of the vasomotor vessels and anemia of the nervous central apparatus. As nitroglycerin has a dilating effect and is of great help in angina pectoris, Burwinkler tried it in seasickness. He had good results, although the effect was short and the dose had to be given repeatedly during one day. The dose consisted of a tablespoonful of a solution of twenty drops of a one per cent, alcoholic solution of nitroglycerin in 150 grammes of distilled water. He thinks that amyl nitrite would have a still better effect than nitroglycerin if inhaled, but he was unable to try this drug as his pharmaceutical chest did not contain it.

38. **Is the Use of Frequent Washing of the Stomach Superfluous in Chronic Static Insufficiency of the Stomach?**—Göckel asserts that in chronic motor insufficiency of the stomach, washing of the same, as well as the repeated expressions, can be usually omitted and the treatment may then consist of antifermentative drugs. He has used magnesium perhydrol, of which the patients took three or four times daily a teaspoonful, before meals, and if necessary once during the night. If

the stools became too frequent he ordered fifteen drops of a one per cent. morphine solution, one to three times a day, to regulate the intestinal action. He thinks it is possible to use, instead of the twenty-five per cent. magnesium perhydrol, which is rather expensive, calcined magnesium.

40. **Iodine and Thyroidine as Causes of Basedow's Disease in Treatment of Goitre.**—Pulawski reports three cases of goitre in which the patients received tincture of iodine and thyroidine, with the result that Basedow's disease developed. He therefore thinks it would be better to perform an operation instead of subjecting the patients to drugs which may result in dangerous sequelæ.

41. **Death under Local Anesthesia.**—Ritter reports a case of a healthy, normal girl, sixteen years of age, who was to be operated upon for a light case of struma with tracheal compression and slight tachycardia. On the day of the operation the patient received, at 10 a. m., 1.5 gramme adalin (bromdiethylacetylcarbamide) by mouth, and half an hour later 0.015 morphine subcutaneously. At 11:15 the patient was brought into the operating room. She was entirely quiet, fully conscious, and stated herself, upon questioning, to be rather tired. After the usual preparation at 11:30, fifty c. c. of a two per cent. alypin solution was injected into the field of operation. Ten minutes later, but before the operation had begun, there appeared suddenly unconsciousness, tremor of the muscles, difficult respiration, cyanosis, and irregular pulse. Although everything was tried, death occurred two hours later. The author thinks that death was produced through the combination of the action of the drugs; it is also possible that the injection of the alypin was made into a vein; or, possibly, a diseased thyroid may have induced the intoxication.

WIENER KLINISCHE WOCHENSCHRIFT.

July 4, 1912.

1. ERNST FREUND: Lessons from Medical Chemistry in Tumor Investigation.
2. SIGMUND FRANKEL: Chemistry of Carcinoma.
3. BERNHARD ABERG: Physiology of Middle Brain.
4. ROBERT LEMKE: Penitolic Ferments in Exudates.
5. ALFRED SUYCKER: Case of Vasomotor Hemiplegia.
6. S. GOLDFLAM: Pupil Phenomena.

July 11, 1912.

7. ROLLIER: Sun Treatment of Tuberculosis.
8. RUDOLF KAUFMANN: Effect of Physostigmine in Tachycardia.
9. A. SLEPIETZKY: Tuberculosis seratum Mistaken for Banti's Disease.
10. LADISLAV SZARVASY: Tolerance of Eye to Foreign Bodies.

July 18, 1912.

11. R. KRAUS and G. HOFER: Lysis of Tubercle Bacilli and Other Acidfast Bacteria in Organism.
12. ROBERT KÜHLER and ALBERT LÜGER: Improvement of Mäntagmin Reaction.
13. ALEXANDER ZALOZIECKI and RICHARD FRÜHWALD: Disturbance of Cranial Nerves in Early Stage of Syphilis, Especially after Salvarsan; Question of Diagnosis of Brain Fluid (To be concluded).
14. JOSEF NOVAK: Is it Possible to Prevent Peritoneal Adhesions with Oil?
15. STANISLAW SKUDRO: Intoxication by Mercury.

July 25, 1912.

16. A. SCHÖNFELD: Hystereal, Cortical, Motor Aphasia with Amnesia, Alexia, and Agraphia.
17. HANS FORDICKE: Bull Formations in Appendix.
18. HANS POLTZER: Neurogenetic Intolerance to Galactose.
19. ALEXANDER ZALOZIECKI and RICHARD FRÜHWALD: Disturbance of Cranial Nerves in Early Stage of Syphilis, Especially after Salvarsan; Question of Diagnosis of Brain Fluid (Concluded).

7. **Sun Treatment of Tuberculosis.**—Rollier gives an interesting review of 650 tuberculous patients treated with sun rays. After giving a short historical review of the treatment, in which he mentions Herodotus, who in the fifth century before

Christ described sun baths, and the great Greek and Latin philosophers and physicians who speak about solarium and the sun treatment, he states that from the destruction of Roman culture up to the eighteenth century, no mention is made of the therapeutic use of sun rays. At that time La Peyre and Le Comte used the rays in carcinoma, Cosetti in phthisis, and, later, Lebel in rhachitis and scrofula. In the second half of the nineteenth century, Schreiber, Rickli, Finsen, and many others made use of the great therapeutic effect of the sun rays. Among the 650 patients treated by the author there were 355 adults and 295 children, with all kinds and forms of surgical tuberculosis, 450 having closed surgical tuberculosis and 200 open. For these two classes he gives the following results: Cured, 393 and 137 respectively; improved, 41 and 29 respectively; stationary, 11 and 14 respectively; died, 5 and 20 respectively. None of the closed surgical tuberculous cases while under treatment changed into open tuberculosis. There were over 1,000 punctures made without any formation of fistula, while fifty cold abscesses were absorbed. Of recurrence he reports six cases; three of these patients also had phthisis.

11. **Lysis of Tubercle Bacilli and Other Acidfast Bacteria in the Organism.**—Kraus and Hofer conclude their second article with the remark that guinea pigs become able to break down acidfast bacteria after a thorough treatment with acidfast bacteria *in vivo*. Their first article on this interesting subject appeared in the *Deutsche medizinische Wochenschrift* for July 27th, which we reviewed on page 448 of our issue for August 31, 1912.

17. **Bull Formations in the Appendix.**—Poltz-decker speaks of the etiology of bull formation in the appendix. He thinks that discharged cells which are suspended in the thick fluid of the intestinal tract, find a resting place in the lumen of the appendix and form there small balls.

ZENTRALBLATT FÜR CHIRURGIE.

August 24, 1912.

1. E. JEGER and H. LAMPEL: Technique of Suturing Vessels.
2. WITTING: Ligation of Left Subclavian Artery in First Segment.
3. E. J. FIEBER: Use of Iodine in Operations on Gastrointestinal Tract.

ZENTRALBLATT FÜR INNERE MEDIZIN.

August 3, 1912.

1. W. A. WEBER: On Sydenham's Chorea.

Sydenham's Chorea.—Weber discusses the relationship between chorea and rheumatism, and thinks it justifiable to conclude, provisionally, that chorea is due to a rheumatic infection of the central nervous system. In accordance with this view he has treated all his cases of chorea primarily with salicylates, and asserts that the results thus obtained constitute an additional argument in favor of the etiological identity of the two affections. Among very recently developed cases of chorea he has seen a large number cured completely in a short time by full doses of salicylates. He administers to children as much as 1.5 gramme to three grammes of sodium salicylate or 0.6 gramme to two grammes of salicylic acid per diem. Other measures of proved value in rheumatism, such as sweating, light baths, etc., were also, on occasion, employed. In cases where sore throat initiates the disease or there is

reason to believe foci of suppuration exist in the tonsils, Weber advises that these structures be removed, both to favor rapid recovery from the oncoming attack and to avoid other rheumatic complications or relapses. Next to the drugs already named, phenyl salicylate, antipyrine, and acetphenetidin, in doses of one to three grammes per diem, were found useful, distinctly more effective than arsenic, which the author believes suited chiefly for run down and anemic cases of long standing. Such old, protracted cases of chorea do not respond as well to salicylates as the recent ones.

RIFORMA MEDICA.

August 10, 1912.

1. A. MISSIROLI: Germ Carriers; Importance in Diffusion of Mediterranean Fever.
2. G. DE FRANCISCO: Complete Congenital Fistula of Neck. Excision, Cauterization of Inner Tract, and Intestinal Opacities. Cure.
3. U. GASPERINI: Hemorrhage of Pons (To be continued).

August 17, 1912.

4. C. FARMACHIDIS: Origin of Atheroma of Aorta. Alterations Produced in Myocardium.
5. U. GASPERINI: Hemorrhage of Pons (Continued).

2. **Fistula of the Neck.**—De Francisco reports a case of a complete congenital fistula of the neck, interesting on account of the manner in which it was operated on. The surgeon wanted to dissect the whole fistulous tract, but after having thoroughly isolated about two thirds of it, it was impossible to proceed further on account of the thinness and fragility of the tissues. De Francisco destroyed the last part with an electrocautery, and the result was absolutely satisfactory. The wound healed by first intention and the fistula was completely cured. Although electrolysis is inferior to a surgical excision, the latter is to be recommended for the inner tract of the fistula, because its excision is very difficult and dangerous.

ROUSSKY VRATCH.

June 2, 1912.

1. N. E. VEDESKY: New Peculiar Condition of Nerve Centres Caused by Prolonged Irritation of Sensory Nerve.
2. V. M. BUCHNAREV: Problems of Alcoholism and Measures against Its Spread.
3. S. V. KOUSTANSOFF: Mechanism of Anaphylaxis in Connection with Influence of Starvation on Anaphylactic State of Animals.
4. B. P. BABIKIN and HIDEITSURUMAN ISCHIKAWA: Mechanism of Action of Fat as Excitant of Pancreatic Secretion.
5. A. W. WAKAR: Röntgenoscopy in Burns of Stomach.
6. A. I. SHIBKOFF and I. W. WINOGRADOFF: Morphological Elements of Meconium; Medicolegal Significance.

June 9, 1912.

7. V. M. ZDRAVOMYSLOFF: Obtaining Antitoxic Antiscarlatinal Serum and Its Clinical Application.
8. W. A. MERKURJEFF: Detection of Arsenic in Urine after Administration of Salvarsan.
9. N. E. MAKEVUIN: Heteroplasty.
10. B. P. BABIKIN and HIDEITSURUMAN ISCHIKAWA: Mechanism of Action of Fat as Excitant of Pancreatic Secretion.
11. W. E. PRIGORIN: Fatal Injuries from Content of Portable Electric Lamps.
12. E. A. PAVLOVSKY: Results of Disinfection of Hands and Field of Operation by Grossich-Brunn Method.
13. P. M. AMIROZHEVITCH: Cooling Mud Baths in Some Female Diseases.

2. **The Study of Alcoholism.**—Bechteref takes up the various phases of alcoholic intoxication which should be subjected to a careful study, viz.: The action of alcohol in small amounts; the relative effect of alcohol in concentration, as in the form of strong spirits, and in high dilution, as in the form of the various products of natural fermentation; the substitution of other drinks, such as tea or coffee; the economic and social aspects of the problem. All should be subjected to an unprejudiced investigation.

3. **Anaphylaxis.**—Koustansoff discovered that starvation, to a certain point, prevents anaphylaxis.

This he found to be due to a diminution in the complement during starvation.

6. **A Study of Meconium.**—Shibkoff and Winogradoff investigated the meconium of twenty fetuses in various stages of development and report their findings which have an important medicolegal bearing, inasmuch as not only the age but the viability of the fetus may be determined by an examination of the meconium. A detailed description of the appearance of the intestinal contents during the various periods of intrauterine life is given.

7. **Antiscarlatinal Serum.**—Zdravomysloff immunized horses against streptococci by means of streptococcic toxins and live streptococci. The serum obtained after four months' immunization was employed in a severe case of scarlet fever. Six out of the seven patients showed marked improvement after the administration of the antitoxine.

8. **Elimination of Salvarsan.**—Merkurjeff determined the presence of arsenic in the urine, following the administration of salvarsan, by Gutscheit's method modified by Burnasheff. He found considerable fluctuation of the arsenic contents of the urine, the average being from one to 2.5 per cent. The length of time during which arsenic may be found in the urine varies with the method of administration. In intravenous injection from nine to sixteen days; in intramuscular from twenty-five days to six months. In a nursing woman who received salvarsan, arsenic was found in the milk.

11. **Danger in Comparatively Weak Currents.**—Proskurin discusses the danger lurking in the electric current of low potential generally employed in electric lighting. He cites instances of fatal shock received from poorly insulated electric lamps, reporting a case which came under his observation. It is not so much the strength of the electric current as the varying resistance of the individual that determines the fatal issue. Moisture on the skin, perspiration, and impregnation of the skin with salts greatly diminish resistance. The condition of the nervous system when weakened by disease or alcohol, as well as the point of contact with the electrodes, frequently determine the fatal issue. As in fatal electric shock the paralysis of the respiratory centre appears before the heart's action is stopped, the author advises the employment of massage of the heart, which may be reached by opening either the chest or the abdominal cavity.

12. **Iodine Disinfection.**—Pavlovsky obtained excellent results with the Grossich-Brunn method of iodine disinfection of the skin before operation. In a series of 225 operations performed in a district (Zewski) hospital under unfavorable conditions he had only four cases of suppuration, or 1.7 per cent., while in ninety operations in which the older methods were employed, suppuration occurred in fifteen cases, or 16.7 per cent.

AMERICAN JOURNAL OF SURGERY.

July, 1912.

1. HERMANN FISCHER: Injuries of Punctures.
2. GEORGE E. PELLEY: Spontaneous Scintillate a True Heart Tonic.
3. CLIFFORD U. COLLINS: Nitrous Oxide and Oxygen Anesthesia.
4. CHARLES SCHRAM: Prognosis in Cases of Mesenteric Glands.
5. ROSS McPHERSON: Incubation, Etiology and Technique of Abdominal Cesarean Section.
6. FRANCIS T. B. FERT: Cesarean Section for Albuminuria.
7. JOHN A. McGINNIS: General Peritonitis Following Spontaneous Rupture of Pyosalpinx.
8. "O. W. HUNTER": Rupture of Female in Infinitesimal Matrimony.
9. WALTER C. CHASE: Unusual Result of Truss Wearing.

1. **Injuries of Pancreas.**—Fischer was able to collect only forty cases of injury of the pancreas without involvement of other organs. He reports an additional case, and discusses the pathology, diagnosis, and treatment of the condition in general. There are no pathognomonic signs of pancreatic injury, the symptoms being those of a peritonitis which may have been caused by an injury of almost any organ in the upper abdomen. There are epigastric pain and abdominal rigidity, and sometimes the point of greatest tenderness is on the left side, slightly above the umbilicus. There is usually unconsciousness with some vomiting of bloody fluid after the accident, then not infrequently an interval of freedom from pain, followed, in a few hours, by recurrence of pain and vomiting. One condition only makes a diagnosis fairly certain, the presence of a cystic mass—a hemorrhage pseudocyst, resulting from closure of the foramen of Winslow—in the upper abdomen. The temperature and pulse are at first very little disturbed, though the leucocyte count is high. Where, owing to severity of the injury, large amounts of pancreatic ferments have been liberated, the peritonitis spreads rapidly, causing a rise in the pulse and temperature. Since it is well known that abdominal contusions without injury of internal organs can give the same clinical picture as rupture of a hollow viscus or an internal hemorrhage, an early exploratory laparotomy is indicated, with suture of the pancreas if it is torn, and careful adjustment of a tampon around the wounded part, both to establish free exit for the glandular secretions and to control hemorrhage. In the treatment of pancreatic fistula a strict antidiabetic diet, as advocated by Wohlgemuth, has given good results. Among thirty-seven cases of injury of the pancreas, five were not operated in and ended fatally. Of those operated in, about sixty per cent. ended in recovery.

2. **Sparteine Sulphate as Heart Tonic and Diuretic.**—Pettey asserts that the reason sparteine is not more commonly used is that it is often given in doses entirely too small to be effective. He places the average dose at 1.5 to two grains. Doses of two grains, given every three to six hours, will establish and maintain the physiological and remedial effects of the drug in an average adult, but where the action is urgently needed, two such doses at an interval of two hours should be given at first. Sparteine lessens the frequency and increases the force of the heart action, but does not raise the blood pressure, since it is also a vasodilator. This makes it an ideal heart tonic. In the correction of cardiac irregularities Pettey would give it first place. When it is given hypodermically the effect may be noticed in fifteen minutes, and is fully established in an hour. It is also taken up readily from the stomach, exerts the effect of a bitter tonic, and does not induce nausea or other unpleasant symptom. Pettey considers it also a reliable non-irritating diuretic. In pneumonia, sparteine wards off or overcomes heart exhaustion better than any other remedy. It is also of great value in post-operative suppression of urine and for the prevention of shock and postanesthetic nausea. In a series of thirty cases in which thorough preliminary purgation was carried out and the patient kept under

the influence of sparteine for twenty-four hours before, as well as during and after the operation, shock was hardly perceptible and nausea absent. In the treatment of narcotic drug addiction by rapid or immediate withdrawal, sparteine is the most reliable agent for support of the heart. For hypodermic use, two grains may be dissolved in twenty minims of water; the injection causes pain, but in many thousand injections given by the author no abscess resulted. For administration by stomach, a No. 4 capsule, holding about two grains, is satisfactory.

3. **Nitrous Oxide Oxygen Anesthesia.**—Collins reports two cases of death occurring in the course of nitrous oxide and oxygen anesthesia, the one apparently ascribable to the method itself, the other to the fact that poisonous nitric oxide gas had inadvertently been allowed to mix with the nitrous oxide during the preparation of the latter. He advises that the anesthetist always inhale a little of the gas before beginning its administration and promptly discard it if it has any odor. Collins is convinced that in operative work on the abdomen, where muscular relaxation is necessary, the use of nitrous oxide and oxygen is not as safe as in operations on other parts of the body; too much gas is required to produce the necessary relaxation. In cases where the incision involves the recti muscles, or requires the lithotomy position, and the muscles do not relax under the gas and oxygen, he therefore adds a little ether vapor (two to four drachms) to the mixture and then continues the anesthesia in the usual manner.

4. **Tuberculosis of Mesenteric Glands.**—Schram affirms that primary tuberculosis of the mesenteric lymph glands, especially those grouped to the right of the lower dorsal and upper lumbar vertebrae, is not as generally recognized as is warranted by the frequency of its discovery at autopsy. After months or even years of latency it may cause tuberculous disease in any part of the body. It is oftenest found in children; hence the importance of a pure milk supply. Chronic constipation is a contributory cause. Obscure abdominal pain with digestive disturbance and rapid loss of flesh suggest its presence. During laparotomies for disease of the appendix or intestines, the mesenteric glands should be carefully examined, and since, when diseased, they rank second among the causes of general tuberculosis, their extirpation when found to be involved, is imperative.

ANNALS OF SURGERY

August, 1912.

1. THORKILD ROVING: Value of Direct Gastroduodenoscopy in Affections of Stomach and Duodenum.
2. JOSEPH C. BLOODGOOD: Conservative Treatment of Giant Cell Sarcoma, with Study of Bone Transplantation.
3. WILLIAM J. MIVY: Radical Operation for Relief of Cancer of Rectum and Rectosigmoid.
4. ARPAD G. GERSTER: Nephrectomy (Concluded).
5. PAUL MONROE PULCHER: Diagnosis of Renal Tuberculosis. Indications for Nephrectomy, and Technique of Operation.
6. GEORGE K. DICKINSON: Acute Hemorrhagic Infection of One Kidney in Person Apparently Well.
7. F. W. RINKENBERGER: Acute Unilateral Infection of Kidney.
8. J. LOUIS RANSBOFF: Adherent Hernia of Large Intestine.
9. HENRY H. JANEWAY: Apparatus for Eyelid and Facial Insufflation.
10. O. W. H. MITCHELL: Picric Acid as Skin Disinfectant.

1. **Direct Gastroduodenoscopy.**—Rovsing describes his gastroscope as an instrument constructed like Nitze's cystoscope, but much larger, with a

stronger source of illumination and enlarged field of vision. Where the diagnosis in gastric or duodenal conditions is doubtful, he makes a small incision midway in the stomach, two cm. above the great curvature, and just large enough to permit the instrument to pass. This having been accomplished, the stomach is inflated with air until all creases are effaced, and the lamp lighted. Systematic inspection of the entire gastric mucosa and, by insertion of the instrument through the pylorus, of the upper portion of the duodenum can be made. The method is of special value in three directions: 1. In the many cases where the symptoms speak in favor of ulcer, but inspection and palpation are negative. 2. In the differentiation between ulcers in the stomach and the duodenum. 3. In rendering possible a direct attack upon an ulcer where one had formerly to be satisfied with gastroenterostomy because the seat of the ulcer was unknown. This is of great importance with ulcers the hemorrhages from which constitute a menace to life, whether there be oozing, small bleedings, or profuse acute hemorrhages. In six cases the author was able quickly to check hemorrhage by the insertion of a silk thread around the bleeding spot during illumination with his instrument.

2. **Treatment of Giant Cell Sarcoma.**—Bloodgood considers that there is at present no proof that the pure giant cell sarcoma ever gives rise to metastasis. Conservative treatment of these cases is justifiable. Curetting is, in some localizations of the tumor, the operation of choice, though wherever resection in continuity does not interfere with function, as at the upper end of the fibula or lower end of the ulna, resection is to be preferred. It is justifiable to attempt curetting to preserve function even when conditions suggest a great probability of recurrence; it has succeeded when the entire lower end of the femur was involved. Among twenty-six cases curetted there were five recurrences, while in twenty-two cases subjected to primary resection one recurred. After either procedure the wound should be disinfected with pure phenol followed by alcohol or zinc chloride solution. The operation should always be done, if possible, under an Es-march, not because of malignancy, but because recurrences would necessitate a second operation and perhaps more mutilation. After curetting, the author practises direct transplantation of bone into the resulting cavity, either at the primary or a second operation. It is simplest, when possible, to get bone for filling the defect by splitting the bone which has been resected. When this cannot be done owing to the size of the defect, the upper third of the fibula, or large pieces chiselled from the tibia may be used.

3. **Operation for Cancer of Rectum.**—Mayo presents a report of seventy-one cases of rectal carcinoma operated in during the last two years. In twenty-seven cases operated in through the perineum or a posterior sacral incision in a single stage there were two deaths, while in forty-four cases subjected to abdominal or abdominal combined operations in one or two stages there were nine deaths. The total mortality, 15.5 per cent., was practically the same as in a series of 120 cases previously reported, but the present series included a number of

cases which would previously have been considered inoperable and hopeless. The two most important factors tending toward improvement of the results were, elimination by means of preliminary abdominal exploration of cases of abdominal metastasis, and the acceptance of permanent colostomy, sacral or abdominal, as a necessary evil in the majority of cases. Stress is laid on the fact that rectal cancer long remains a local disease and can therefore, by block dissection, be cured in a goodly percentage of cases. In performing posterior rectal resection of the Kraske type, Mayo places the patient in the reversed Trendelenburg posture, closes the anus by suture, and incises in the median line from the upper sacrum to the anus. The coccyx and fourth and fifth sacral vertebrae are removed, thus giving a fairly good operative space, and the dissection then usually made from below upward.

5. **Renal Tuberculosis.**—Pilcher enumerates, as cardinal symptoms of renal tuberculosis, long continued pyuria, which resists all local treatment of the bladder, marked polyuria, frequent and painful urination day and night, a contracted and intolerant bladder, and the presence of tubercle bacilli in the urine. Confirmatory evidence is to be had as the result of cystoscopy, ureteral catheterism, and the x ray. Whenever there is concomitant extensive lung tuberculosis, nephrectomy should not be considered, though when the involvement is only slight, it may be safely done. In cases of bilateral involvement, operation should be done only as a last resort, and even in certain advanced cases in which it is not known positively that both kidneys are involved, it is inadvisable to do a nephrectomy. The only absolute guide in these cases lies in estimating the renal function and the degree of other involvement of tuberculous nature throughout the body. Aside from these circumstances, the author advises nephrectomy in every case of unilateral renal tuberculosis, providing the companion kidney shows a normal or almost normal secretion.

10. **Picric Acid as Skin Disinfectant.**—Mitchell asserts that solutions of picric acid—generally a one per cent. alcoholic solution—can be depended upon as germicidal and are to be recommended for skin disinfection because of their great penetrating power.

ARCHIVES OF INTERNAL MEDICINE.

July, 1912.

1. JAMES E. HERRICK: Diabetes insipidus with Marked Reduction in Amount of Urine Following Lumbar Puncture.
2. WILLARD J. STONE and RICHARD SCHOTTSTAEDT: Cobra Venom Hemolysis Test in Syphilis.
3. CLIFFORD B. FARR and WILLIAM H. WELKER: Influence of the phylline on Nitrogenous Excretion and Partition.
4. A. MYERSON: Some Unfamilial and Some New Periosteal Reflexes.
5. ALFRED F. HESS: Pancreas and Its Ducts in Congenital Obstruction of Bile Ducts.
6. HENRY SEWALL and S. B. CHURCH: Physical Signs and X-Ray Pictures of Chest in Early Stages of Tuberculosis.
7. PAUL A. LEWIS: Selective Relation of Certain Vital Stains to Tubercle.

2. **Cobra Venom Hemolysis Test in Syphilis.**—Stone and Schottstaedt found the Weil cobra venom reaction positive in but one of four patients with primary syphilis, or twenty-five per cent. In twenty-two cases of active secondary and tertiary syphilis it was positive in twenty, or 90.9 per cent., and in thirty-three cases of latent secondary and tertiary syphilis in twenty-nine, or 87.8 per cent. In

twenty clinically cured patients it was negative in all. While the average of positive Wassermann tests in a large series of cases of active syphilis was approximately the same as that of positive cobra venom tests in another large series, in latent syphilis the Wassermann positives averaged 52.1 per cent. and the cobra venom positives 78.1 per cent.; *i. e.*, the venom test persists longer in treated cases than the Wassermann and has given about twenty-six per cent. more positive responses in latent syphilis. Such a result is of especial value in the latent stage of the disease when clinically the diagnosis is obscure. In a number of patients with active tuberculosis, in whom the venom test was tried for control purposes by the authors, a hypersusceptibility to cobra venom hemolysis was found, in direct contrast to the lowered susceptibility in syphilitics. This may be of value in differentiating syphilis and tuberculosis of the lungs where clinically the diagnosis is not clear.

3. Theophylline and Nitrogenous Excretion.—Farr and Welker found, in experiments upon four human subjects, that while theophylline promoted the excretion of fluid in two cases, it apparently did not affect, or even slightly diminished, the excretion of nitrogen. In a case of diffuse nephritis diuresis failed to develop and the nitrogen elimination was sharply reduced. The slight or doubtful influence of the drug on nitrogen excretion and its pronounced influence on the excretion of water and sodium chloride suggest that it may act principally on the capsule of Bowman and little if at all on the tubules.

4. Periosteal Reflexes.—Myerson studied the reflexes from certain bony areas, *e. g.*, that of contraction of the triceps obtained by tapping with moderate force the ulnar styloid process, and a number of others elicited from different points of the lower limb. He agrees with other observers that the activity of these reflexes is in direct relationship with that of the tendon reflexes. They are very prominent in diseases of the cortex, particularly uncomplicated general paresis, as well as in diseases of the pyramidal tract, often in preataxic tabes, and in exophthalmic goitre. In fully developed tabes they are absent. In uncomplicated hemiplegia they are present on both sides, but greater on the affected side. Being elicited from easily accessible surfaces, they should be incorporated in routine examinations; they offer additional information regarding the reflex irritability of the patient.

6. Physical Signs and X Ray Pictures in Early Tuberculosis.—Sewall and Childs affirm that auscultation of the voice and whisper affords an exceedingly delicate index of pathological changes in the lungs. The clinical history of a case, combined with the physical signs, may lead to strong suspicion of tuberculous infection long before any signs of actual tissue changes, except the bronchial glands, appear on an x ray negative. Nevertheless a skiagraph of the chest, preferably repeated frequently, is essential to the proper understanding of a patient's condition. The skiagraphic study resolves itself into two natural divisions; one pertains to the hilus regions, concerning especially the bronchial glands with their associated lymphatic nodes, and the other includes the lung parenchyma itself. Ex-

treme pathological changes in the glands may be recognized very easily, but alterations of moderate grade need careful interpretation. In practically all of the authors' cases of unproved but suspected tuberculosis the skiagraphic negatives showed areas of lung congestion denoted by thicker branches and denser arborizations of the bronchial tree, composed chiefly of shadows cast by bloodvessels. The authors believe, in fact, that the recognition of abnormal congestion in this manner has great importance in early diagnosis. The earliest pathognomonic skiagraphic sign is the presence of comparatively isolated areas of vascular congestion, which increase independently of their connections with the central root.

BULLETIN OF THE JOHNS HOPKINS HOSPITAL.

June, 1912.

1. HARVEY B. STONE, BERTRAM M. BERNHEIM, and GEORGE H. WHIPPLE: Intestinal Obstruction: Study of Toxic Factors.
2. M. C. WINTERNITZ: Primary Carcinoma of Liver.
3. FREDERICK P. GAY: Method of Correlated Teaching of Pathology and Bacteriology in Second Year of Medical Instruction.
4. FIELDING H. GARRISON: Richard Bright's Travels in Lower Hungary.
5. H. R. M. LANDIS: Austin Flint: His Contributions to Art of Physical Diagnosis and Study of Tuberculosis.
6. CHARLES GEORGE LUMSTON: Cyrano de Bergerac's Opinion of Medical Profession.

July, 1912.

7. W. S. HALSTED: Effect of Ligation of Common Iliac Artery on Circulation and Function of Lower Extremity. Report of a Cure of Iliofemoral Aneurysm by Application of Aluminum Band.

1. Toxic Factors in Intestinal Obstruction.—Stone, Bernheim, and Whipple found that ligation of a loop of duodenum in dogs causes very rapid death (in twenty-four to sixty hours, as a rule), even when the loop contains no food material nor secretion from the stomach, liver, and pancreas. Ligation of loops of ileum is much less rapidly fatal. Surgical drainage of the duodenal loop will save the dog's life. The material obtained from obstructed loops is toxic to other dogs, causing, when injected, profound splanchnic paralysis and extreme congestion of this area. A reaction is caused which is almost identical with the manifestations of anaphylaxis in the dog. Injections of sublethal doses of the toxic material protect against subsequent large ones. No such toxic substance could be obtained from the normal intestinal mucosa.

2. Primary Carcinoma of Liver.—Winternitz asserts that primary hepatic carcinoma is rare, occurring only in 0.28 to three per cent. of all autopsies from various statistics. It is most frequent in adult males, but may occur at any age, a number of cases having been described in infancy. Clinically, the disease is difficult to differentiate from hepatic cirrhosis, though the rapid course, presence of an enlarged irregularly nodular liver, and hemorrhagic ascites may aid in diagnosis. The tumor may occur in normal or diseased livers. Very commonly it is combined with a cirrhosis; the latter, it is believed, precedes the tumor, but this, in turn, may cause further fibrosis secondarily. The rarity of the formation of extensive exohepatic metastases from primary liver carcinoma is noteworthy.

7. Ligation of Common Iliac Artery.—Halsted discusses critically the thirty cases of ligation of the common iliac artery which have been reported since 1880, and concludes that, uncomplicated, this operation is not likely to be followed by gangrene, the

percentage being only from 3.3 to 6.6, while the mortality rate is at most ten per cent. None the less, the ligation is not an ideal surgical procedure, chiefly because it cuts off the direct blood supply from the internal iliac, as well as because it does not invariably cure the aneurysm for which it may have been performed. The Matas operation, or a modification of it, is preferred by Halsted, because it aims to reduce the disturbance of circulation exactly to that necessarily incident to obliteration of the aneurysm. In all cases of aneurysm or wound of the external iliac artery, a thorough operative examination of the vessel should be made, if the patient's condition permits. A fatal termination might have been avoided in many cases of ligation of the common iliac, if the vessel had been temporarily compressed and examined at the first operation.

MONTHLY CYCLOPEDIA AND MEDICAL BULLETIN

July, 1912.

1. JAMES M. ANDERS: Dioxidiaminoarsenbenzol in Treatment of Various Clinical Forms of Syphilis.
2. L. H. TAYLOR: Value of Enterostomy in Ileus.
3. GEORGE O. JARVIS: Visceral Orthopedics.
4. FRANK S. MATLACK: Cholesterin Reaction in Serodiagnosis of Lues.
5. A. W. DOWNS: Genesis of Heart Beat.

1. **Dioxidiaminoarsenbenzol in Various Clinical Forms of Syphilis.**—See this JOURNAL for August 3, 1912, page 254.

2. **Enterostomy in Ileus.**—See this JOURNAL for August 3, 1912, page 252.

3. **Visceral Orthopedics.**—Jarvis discusses the influence of incorrect posture and unhygienic clothing in the causation of displacements of the thoracic and abdominal viscera, with the consequent functional disturbances. Hydrotherapy, in the form of cool baths with vigorous rubbing, taken after exercise, is recommended in addition to correction of the direct etiological factors, in the treatment of orthopedic visceral disorders. Jarvis looks upon constipation, in its usual form, as "the sign of a tired bowel," which it is unwise to treat with laxatives. Abstinence from drugs, even if at first a few days pass without a bowel movement, allows the gut what is sometimes a much needed rest, and leaves the patients in a better condition than if they had been purged. In surgery the no laxative régime also acts happily. In abdominal operations cases purged before the intervention show greater congestion of the intestines than those not purged,—a fact of significance in the presence of peritoneal inflammation. During a period of "rest cure" for the bowel it is unwise to allow a full diet, as it is desired to rest the whole intestinal tract.

4. **Cholesterin Reaction in Diagnosis of Lues.**—Matlack compared with the Wassermann reaction a test described by Hermann and Perutz, which consists in adding to the serum to be tested equal parts of an alcoholic solution of cholesterin and a watery extract of sodium glycocholate. Upon being shaken and allowed to stand at room temperature until the next day, the mixture shows a precipitate in the presence of syphilitic serum and none with non-syphilitic serum. From the results of 200 tests Matlack concludes that the cholesterin reaction is less accurate than the Wassermann by 18.3 per cent. It is, however, valuable as a control to the Wassermann; when the two tests result alike, positively or

negatively, it is unnecessary to repeat either one. The cholesterin test can never be used as a simple test for syphilis in the physician's office, as it demands as accurate a technique as the Wassermann and considerable experience in reading the results.

NEW YORK STATE JOURNAL OF MEDICINE

August, 1912.

1. C. G. STOCKTON: Vertigo from Standpoint of General Practitioner.
2. P. FRIDENBERG: Ocular Vertigo.
3. P. D. KERRISON: Labyrinthine Vertigo.
4. J. F. MEKERNON: Vertigo Due to Middle Ear Causes.
5. W. A. PURKINGTON: Medical Expert Testimony from Lawyer's Standpoint.
6. A. C. BRUSH: Medical Expert and Proposed Changes in Law Governing Defense of Insanity in Homicide Cases.
7. F. H. STEPHENSON: Nervous and Mental Symptoms Due to Disturbed Circulation.
8. B. C. LOVELAND: Ten Years' Experience with Gastric Neurasthenia.
9. E. C. ROSENOW: Further Immunological Studies in Chronic Pneumococcus Endocarditis.
10. E. G. BECK: Bismuth Paste; Uses in Surgery.
11. W. C. CALKINS: Bismuth Poisoning. Use of "Biyat Buldo."
12. N. E. BRILL: Clinical Vagaries in Liver Diseases.
13. B. W. STEARNS: Acute and Chronic Congestions of Liver.
14. G. R. LOCKWOOD: Hyperacidity.
15. A. H. TRAVERS: Early Diagnosis in Surgical Affections.
16. A. A. BRILL: Only or Favorite Child in Adult Life.
17. W. M. BROWN: Toxemia of Pregnancy.
18. P. E. BECHT: Alopecia areata; Causative Factors and Therapy.
19. W. TRUSLOW: Lateral Curvature of Spine.
20. J. R. WISEMAN: Cardiac Sequelæ of Tonsillar Infection.

5 and 6. **Medical Expert Testimony.**—Purkington says that from the lawyer's standpoint the great essentials of an expert are his qualification in his profession, his honesty, and his ability to withstand cross-examination. One who is often an expert makes a record that becomes known. His mistakes haunt him. If he has testified in a similar case in a different way, he will be likely to hear of the difference before the ordeal is over. It may be said with assurance that the medical expert who is qualified in his subject, courteous, self-contained, and, above all, honest, will create no antagonism, and will have nothing to fear at the hands of the lawyer. The witness who is supercilious, ill qualified, quick tempered, biased, more intent on maintaining his cause than in testifying frankly, has very much to fear from a cross-examiner of even moderate ability.—Brush remarks that a grave fault is to be found in the fact that we have no standard for the selection of the expert, and that it not infrequently happens that witnesses called as experts show only a very superficial knowledge of the subjects upon which they are called to express opinions. Another grave fault is the fact that the witness often acts in a partisan manner, with the intention of aiding the party in whose interest he is called; this attitude is very common, but it soon results in the discrediting of the one who maintains it. Consequently medical experts go so far as to paint the picture deliberately to attain their ends.

9. **Chronic Pneumococcus Endocarditis.**—Rosenow feels that the organism should be considered as a modified pneumococcus and that it produces an endocarditis by first causing an embolic hemorrhage which serves, in turn, as a culture medium for the organism. Growth begins then, before the leucocytes gain entrance to destroy the bacterial clump. A vegetation is the result. He emphasizes the following points in the summary of his paper: The form of endocarditis known clinically as subacute or chronic

infections is due, in the vast majority of cases, to organisms of practically no virulence in the ordinary sense. Death is due to exhaustion, the result of prolonged parental protein intoxication. The explanation of the ability of these organisms to bring about the endocarditis lies in their ability to form clumps. The organism is not a typical streptococcus or pneumococcus, and in each case the name of the disease should include that of the infecting organism. The results of a daily study of the number of bacteria in the circulating blood, the phagocytic and destroying power of the patient's blood in relation to the temperature and to the subjective symptoms, show that intoxication is especially marked during the time when the bacteria are being actively destroyed. Even though the bacteria have greatly increased in number, the patient may be feeling very well. The use of immune rabbit serum was found to be of no value. The use of small doses of a homologous vaccine is advised.

10. Bismuth Paste.—Beck gives the following rules for the use of this remedy, without which success is less frequently the result of its use than should be the case. 1. Before operating on any sinus or fistula procure a radiograph of the sinuses injected with the paste; this will permit the exclusion of inoperable cases and prevent useless operations. 2. Do not use the paste in very acute cases. 3. For diagnostic purposes use stereoscopic radiographs instead of single plates. 4. In cases where there is a sequestrum, a stump of diseased tissue, or a foreign body at the bottom, the paste treatment will be useless until these are removed. 5. The most common error is to inject too frequently. At least one week should elapse after this first injection. If the purulent discharge has changed into a serous one, the injection should not be repeated. If it is still purulent the injection may be repeated. 6. It is essential that every part of the fistulous tract be filled with the paste at one time, otherwise the injection will be useless. 7. If more than one opening exists, the injection should be made through one only and allowed to escape through the others. As soon as it begins to escape, that opening should be closed with the finger so as to allow the paste to be gently forced into other side branches. 8. In all cases the proper instruments should be employed in order to carry out the technique properly. 9. The possibility of bismuth poisoning should always be borne in mind. If the rules are followed it will not occur. If it does occur it may be checked by observance of the following: Flood the sinuses or cavities with warm olive oil, retain it for twenty-four hours, and withdraw by suction. Wash the sinus with olive oil daily, until symptoms disappear. Scraping the walls of the cavity aggravates the condition. To prevent the development of poisoning one must not use too large a quantity in cases where large cavities exist. One should watch for the appearance of blue ulceration of the gums, diarrhea, and emaciation. Blue border on the gums does not alone mean bismuth poisoning, but it indicates that the borderline has been reached and that the injections are to be discontinued until it has disappeared.

16. The Only Child.—Brill has made a study of the psychology of the only, or the favorite child,

and the following are some of his observations: Due to the undivided attention and abnormal love bestowed by the parents, the only child is a confirmed egotist. In later life he is extremely conceited, jealous, and envious, he begrudges the happiness of friends and acquaintances and is therefore shunned and disliked. Almost all such children are morose and unhappy. The predominant feature in about thirty-six per cent. of Brill's cases was the abnormal sexual life; most of them sought treatment for homosexuality, psychic impotence, and sexual anesthesia; there were some exhibitionists; about eighteen per cent. suffered from the various types of dementia præcox, and the rest represented the different types of the psychoneuroses. He concludes with the remark, that the only child is the morbid product of our present social economic system. He is usually the offspring of wealthy parents, who by their abnormal love not only unfit the child for life's battles, but prevent him from developing into normal manhood, thus producing sexual perverts and neurotics of all descriptions.

PENNSYLVANIA MEDICAL JOURNAL.

Incident, 1912.

1. R. N. WILSON: Economic Relations of Social Diseases.
2. D. C. GUTHRIE: Race Suicide.
3. R. E. LEE: Human Body Chemically Regulated Organism.
4. N. J. WEILL: Ocular Manifestations of General Disease.
5. R. H. SKILLERN: Plea for Early Diagnosis of Extrauterine Pregnancy.
6. S. D. MOYNIHAN: Ectopic Gestation.
7. F. N. YAGER: Ectopic Gestation; Full Term Fetus in Abdomen for Thirty-five Years.
8. H. D. BRYAN: Treatment of Internal Hemorrhoids by Excision.

8. Excision of Hemorrhoids.—Beyea's experience with the excision operation extends over nearly twenty years, during which time a very large number of patients have been operated upon with healing by primary union, and, as far as the author knows, complete and permanent cure, and without immediate or remote complication, secondary hemorrhage, loss of sphincter control, infection, or stricture. He describes in detail the anatomy of the rectal wall in the "pile bearing" area, calling attention to the fact that the affected vessels all lie in loose areolar tissue immediately beneath the mucosa of the last inch and a half of the rectum. They are distinctly separated from the sphincter muscles, which must never be even exposed to view in the operation. He is emphatic regarding the gentleness with which the sphincter ani is to be dilated to avoid rupture of the fibres, and equally emphatic in the contention that its complete temporary paralysis must be secured. The operation consists in removing the circular cuff of mucous membrane which should contain the greater bulk of the dilated vessels, without exposing the underlying sphincter muscle. The lower margin of the cuff must not extend closer than a thirty-second of an inch above the line of mucocutaneous junction at the anus. In removing the cuff the dilated vessels are to be cut through with scissors and never dissected out from pockets in the muscle. The operation is completed by suturing the rectal mucosa to the narrow edge of mucosa left at the anus. No dressing at all is employed. The bowels are opened by calomel on the third day and the patient is allowed to sit up on the fourth. No enemas are used. The operation requires from twenty to thirty minutes and is always done after the acute stage of the disease has passed as the result of rest in bed, if that is needed.

SURGERY, GYNECOLOGY, AND OBSTETRIC CS.

August, 1912.

1. REUBEN PETERSON: Results of Radical Abdominal Operations for Cancer of Uterus.
2. H. C. TAYLOR: Radical Abdominal Operation for Carcinoma of Cervix Uteri.
3. F. J. TAUSSIG: Prognosis in Radical Abdominal Operations for Uterine Cancer.
4. F. H. MARTIN: Gymnastics and Other Mechanical Means in Treatment of Visceral Prolapse and Complications.
5. E. GARCEAU: Chronic Cystitis of Trigonum and Vesical Neck.
6. J. O. POLAK: Indications for, and Operation to Select in Toxemia of Pregnancy.
7. E. P. DAVIS: Treatment of Acute and Fulminant Toxemia.
8. F. S. NEWELL: Treatment of Eclampsia.
9. J. M. BALDY: Prolapse of Uterus.
10. G. G. WARD, JR.: Relation of Thyroidism to Toxemia of Pregnancy.
11. W. S. GIBSON: Topography of Hypophysis cerebri.

1. Operations for Cancer of the Uterus.—

Peterson reviews the primary and end results of fifty-one radical abdominal operations for cancer of the uterus. He finds that all other operations, in his hands, have been disappointing in their uniformly bad ultimate results, while with the radical abdominal technique he has been able to save a fairly good percentage of his patients. He discusses the primary results, giving the causes of death as shock, shock with hemorrhage, peritonitis, and embolus, at the same time explaining what may be contraindications to the operation, and what to guard against during the operation. The end results are briefly presented. One important statement made is, that neither the profession nor the patients have been educated as to the necessity of early examinations for the detection of the disease.

2. Operation for Carcinoma of the Cervix Uteri.—

Taylor reports twenty-eight cases and carefully reviews the question of carcinoma of the uterus in its general aspects. It is interesting to present in full the conclusions to which the author comes as a result of a study of his own cases and replies to a circular letter which he sent out. 1. The primary mortality of the radical abdominal operation is not such that it should deter from doing the operation. 2. The percentage of operability of the cases which come under observation of an operator, by the use of this operation, will be greatly increased over that of those where the simple hysterectomy is done, as was formerly the case. 3. The end results will never compare favorably with the end results reported from abroad, until we are able to get our cases at an earlier stage of the disease. The justification for doing such a radical operation is in its moderate mortality and in the relief of symptoms, in a disease otherwise hopeless. 4. The most promising field of endeavor on the subject of carcinoma of the uterus should be, more reliable and complete statistics and a well regulated organized plan of campaign, in order to get our cases earlier than we do at the present time.

3. The Prognosis in Radical Abdominal Operation for Uterine Cancer.—

Taussig has collected and presents a review of sixty such operations for cervical cancer. He takes up the question of prognosis in cancer of the cervix under three heads: 1. The prognosis before operation, or percentage of operability; 2, the prognosis of the operation itself, or operative mortality; 3, the final prognosis after operation, or percentage of recovery. He concludes that the radical abdominal operation for cervical cancer is not in itself a dangerous operation; also, the percentage of recurrences is distinctly less

after this operation than after simple vaginal hysterectomy. He calls attention to the small percentage of absolute cures in this country compared with German or Austrian statistics. It is not due to any inferior skill on the part of the operators, but to the fact that the percentage of operability here is less than one half that of the average German clinic. This is due to the physician or the patient having allowed the disease to advance too far.

6. **Toxemia of Pregnancy.**—Polak presents in brief the pathological changes that are most frequently found in eclampsia, a peribulbar thrombosis and a hemorrhagic necrosis in the portal spaces. In addition there may be another type, the nephritic. The indications for evacuation are reviewed, and the author gives a brief analysis of twenty-seven consecutive cases without maternal mortality. In the summary his conclusions express his belief that surgical methods in skilled hands do less injury, have a lower mortality, and have less morbidity than the less radical procedures.

7. **Treatment of Acute and Fulminant Toxemia.**—Davis sketches the prophylaxis and treatment of fulminant toxemia, referred to by some as eclampsia without convulsions. Attention is called to Stroganoff, who reports a maternal mortality of between six and seven per cent., under conservative treatment. With this is compared the operative treatment as shown by Peterson's recent collection of statistics in which the mortality rate was considerably higher than that of Stroganoff.

8. **The Treatment of Eclampsia.**—Newell treats of the subject under the following heads: Etiology; prevention of further absorption of toxins; the limitation of damage by the toxins already absorbed; promotion of the excretion of the toxins; treatment of the patient. In these are given in some detail the various methods employed to bring about the desired results.

DUBLIN JOURNAL OF MEDICAL SCIENCE

August, 1912.

1. JAMES LITTLE: Daniel John Cunningham.
2. WILLIAM BOXWELL: Pericardial Effusion; Plea for Radical Treatment.
3. MADRICE SYDNEY MOORE: Henoch's Purpura: Symptoms and Treatment of Disease.
4. HENRY JELFETT, BETHEL A. H. SOLOMONS, and DAVID G. MADILL: Clinical Report of Rotunda Hospital for One Year, to October, 31, 1911.
5. R. J. ROWELL: Pathological Report of Rotunda Hospital for One Year, to October 31, 1911.

2. **Pericardial Effusion.**—Boxwell's plea is that a pericardial effusion requiring any surgical intervention at all ought to be treated by resection of a rib cartilage and free opening of the sac, just as one would open the dura mater to drain a cerebral abscess. He asserts it to be the only safe and satisfactory method, and that the very presence of a large effusion makes the operation easier than it would be in a normal subject. He maintains that free opening should be the exploratory, and at the same time the curative operation for all cases of large effusion, be the character of the effusion what it may.

INDIAN MEDICAL RECORD.

July, 1912.

1. GEORGE L. SHERSON: Sulphocarbolates.
2. V. G. DESAI: Chronic Diarrhea in Tropics; Atonic Variety.
3. FREDERICK F. MCCABE: Larkoxides in Action; Best Methods of Destruction.

Proceedings of Societies.

ONTARIO MEDICAL ASSOCIATION.

Stated Meeting in Toronto, Canada, May 21, 22, and 23, 1912.

The President Dr. HERBERT A. BRUCE, in the Chair.

Some Aspects of Neurology to General Practice.—Sir WILLIAM ALDREN TURNER, M. D., Ph. D., C. P., commenced with a tribute to the memory of Dr. Hughlings Jackson, the father of British neurology, and then indicated the progress made in clinical laboratory methods in connection with the treatment of diseases of the nervous system. Referring to serotherapy, he said the diseases of the nervous system did not lend themselves, so far as their study had yet gone, to treatment by serums and vaccines. There were, however, two maladies, cerebrospinal fever and acute poliomyelitis, whose symptoms indicated nervous derangement, but whose pathology placed them under the acute infectious disorders. The infection of the central nervous system through the posterior nares and nasopharynx, the probable similarity of the infective agents in both diseases, and the fact that they were known to occur in epidemic and sporadic forms, had opened the way for a better study and had led to the view that they were probably of the same, or similar pathogenic nature. The artificial production of poliomyelitis in monkeys by Flexner and others, had thrown a fresh light upon its pathogeny, but attempts to prevent or cure it after experimental production, by means of serums or vaccines, had not been encouraging. For cerebrospinal meningitis, on the other hand, a number of serums had been prepared, and their administration during the early days of the fever appeared to have been of service.

As to psychotherapeutics, in view of the generally accepted psychic origin of all hysterical symptoms, as well as those of the closely allied psychoneuroses, such as the mental symptoms of neurasthenia, morbid fears, dreads, obsessions, and the like, it was not unnatural that the present day methods of treating these conditions should consist, in the main, of psychic measures. The influence of some kind of suggestion in the treatment of functional nervous disorders had been admitted from time immemorial; witness the influence of religious faith. But, apart from this, had we not the cures effected by charlatans, by the pseudoscientific methods of metallotherapy and the like, and by the wonder workers of all countries. The moral influence of medical men over their patients had, of course, been long recognized, but there would seem to be something more than verbal encouragement or reassurance necessary in the psychotherapeutics of to-day. The modern methods of psychotherapeutics were limited to the following: First, direct suggestion; of this, there were two kinds, in one of which the suggestion was effected during hypnotic sleep, in the other during the waking state. During hypnosis the physician introduced new ideas into the patient's consciousness or effected the destruction of existing ideas without the consent or judgment of the sufferer. In suggestion during

the waking state, the patient voluntarily placed himself in a receptive condition to receive and accept suggestions made to him by the physician, without argument or reason. Second, persuasion, which implied the reeducation of the patient's mind by reasoning and argument. This method was introduced by Dubois, of Berne, and, in various modified ways, was the remedy applied by many physicians who worked along psychotherapeutical lines. It was, in fact, what might be called the method of therapeutic conversation. Third, psychoanalysis; reeducation of the patient, in the meaning and significance of his symptoms, implied some degree of psychoanalysis on the part of the physician. In a general sense it was nothing more than a careful and exhaustive investigation into the origin, relation, and importance of existing symptoms. In the sense employed by Freud, however, psychoanalysis was a more elaborate proceeding and required skill, patience, and perseverance. It was not the speaker's intention to describe the method, but merely to point out that its object was to get behind the "censure," or repressing force, which originally repressed and kept suppressed the subconscious strata of the mind. The pathogenic idea, it would be remembered, was that which gave rise, in Freud's view, to the symptoms of hysteria and the psychoneuroses. Having by psychoanalysis overcome this resistance, and given the "effect" an opportunity of flowing through speech, the repressed idea was "brought into associative correction by drawing it into normal consciousness through the suggestion of the physician."

In the hands of Freud himself and of his disciples, both in Europe and on this side, the method was stated to be of practical value, but one could not help feeling that, owing to the prominence given to the sexual side in the causation of hysterical symptoms, harm might accrue by recalling sexual memories, in themselves perhaps harmless, which had long been forgotten. During the analysis, it was not unlikely that the physician might unwittingly suggest to his patient, and in turn might himself be misled, in Freud's sense, therefore, psychoanalysis was the evacuation of a repressed idea by a form of confession, and the reconstruction to the patient's consciousness of the thought underlying the symptoms. It appeared to have been of great use in hysteria and some of the psychoneuroses, but to be of little value in neurasthenia and states of anxiety. The speaker did not think that it required much experience of the practical applications of these methods of psychotherapy to realize that they had their limitations. There were some psychoneuroses of short duration and slight degree, which were readily cured by a little reasoning and convincing on the part of the physician; but there were many instances of obsessions, hesitations, doubts, anxieties, and morbid fears, which were difficult to cure by psychical means alone. On the part of the physician, a knowledge of the causes and symptoms of hysteria and allied neuroses was essential, as well as a clear insight into the temperament of the patient. On the patient's part, faith in the method and faith in the man behind the method were essential to success. He did not imply that it was not in the power of every earnest physician so

to influence the mind of his patient by dissipating pessimism, and by encouraging a healthy outlook materially to aid a cure; but for the successful treatment of the psychoneuroses by psychic means, a thorough knowledge, both of the diseases and of the means of treatment, was essential. A special class of practitioners had in consequence arisen; but it seemed to him as if those who gave their attention to mental and nervous diseases were those best qualified to undertake this work. He was, therefore, in complete accord with those who advocated the necessity of physical means with psychotherapeutic efforts. The isolation of the patient in a home, institution, or special ward, the deprivation of visits from relatives and friends during the course of treatment, the cutting off of all correspondence and the like, were all essential adjuncts to a successful issue. Rest in bed either indoors or in the open air, abundance of milk, massage, and regulated exercises were desirable in the majority of cases.

Personal Experience with the Use of Nitrogen Gas in the Treatment of Pulmonary Tuberculosis.

—Dr. ANGUS MCKINNON, of Guelph, gave the history of eight cases of pulmonary tuberculosis which he had treated by means of nitrogen gas, some of which benefited greatly by the method. The gas was injected by an aspirator needle. The conclusions at which he arrived with regard to the value of this mode of treatment were as follows: If the disease was bilateral it could not be used. If there were complications, either from fistula or intestinal disease or middle ear disease, it was not likely that it would accomplish much for the patient. He did think, however, in any case in which an early diagnosis had been made, where there had been no pleurisy, and where the disease was limited to a portion of the lung, if sufficient gas were injected into the pleural cavity to cause total collapse of the lung, immense advantage to the patient would be gained. The cough would disappear within one week, night sweats would cease, and the patient would obtain refreshing sleep. He usually improved in weight and appetite so that in a few months his health seemed to be fully reestablished. McKinnon had never found it necessary to continue the use of the gas for longer than six months. After that the lung was allowed to acquire its ordinary function in respiration. In behalf of the method several claims might be advanced. In the first place it was carrying out with regard to pulmonary tuberculosis the same treatment we applied to tuberculosis of joints, absolute rest. By collapsing the lung it ceased to expand and contract in the act of respiration, and there was thus given an opportunity for any cavity that might have formed to heal. Again, this treatment did not in any way interfere in the carrying out of any other measure that was indicated or thought advisable in the management of the case. One great thing that it did accomplish when a lung could be collapsed, was an immediate control of the harassing cough. When successful the cough ceased within twenty-four hours, and with it the night sweats and the fever that in some cases occurred even in early stages. Last, the statement was made that this measure would cure, even when it succeeded in control-

ling the cough. Of all the cases in which McKinnon used it, only one patient was living and well now. One of the others lived eight years and died from another disease, and one died from tuberculosis of the same lung, eleven years after the use of the gas, when he was in a condition that led one to expect that he would not live longer than a year. In the remarks made with regard to the nitrogen gas treatment, McKinnon did not forget the fact that his experience had been limited to a few cases only, and that consequently the conclusions arrived at were not entitled to the same weight as if the treatment had been employed in a large number of cases.

Tetanus.—Dr. A. MOIR, of Dunnville, Ontario, gave a history of a case of tetanus attended by him, in which the good effects of injection of antitetanic serum some little time after the symptoms were well marked were demonstrated. In the meantime, before he obtained the serum, a two per cent. solution of carbolic acid was administered hypodermically which, he thought, assisted in holding the disease in check. Of this solution the patient was given two drachms hypodermically at first, and one half drachm every four hours after, until the serum arrived. It was about two and a half days after the onset of the characteristic symptoms of tetanus, before the opportunity was afforded to employ serum; 6,000 units were administered every six hours for the first three doses, then 6,000 units every twelve hours. There was no appreciable change until the fourth day of the serum treatment, when the spasm of the muscles of mastication was considerably relaxed. The temperature, which up to the time of the serum treatment had varied from 102° F. to 103° F., came down on the fourth day of treatment to 100° F. The pulse, which had been in the neighborhood of 120, was reduced to 105. After five days of serum treatment, an irritating rash appeared, and this form of treatment was discontinued. The speaker employed subcutaneous injections. At the time when the serum treatment was discontinued, there was still marked spasm of nearly all the muscles of the body, although the muscles of mastication had relaxed sufficiently to get a small tablet into the mouth. According to the suggestion of Sajous, in his work on the internal secretions, the patient was then given five grains of thyroid extract three times a day, and Moir believed that it exerted a beneficial effect, for when the patient was without it for two days he complained more of stiffness, and appeared more comfortable after it had been given again. Thyroid extract was then administered for a period of ten days, when by that time the patient could eat solid food and could walk about a little. Four and a half months after the injury the patient was well and doing light work, but still complained of a slight feeling of stiffness of all the muscles, although not sufficient to interfere with his comfort to any extent.

Observations Relating to Diet in Tuberculosis.

—Doctor KENDALL, of Gravenhurst, Ontario, discussed the matter of diet in the treatment of tuberculosis at considerable length. His conclusions were as follows: 1. Forced feeding was not essential in the treatment of pulmonary tuberculosis. 2. Great gains in weight should not be sought, but an

endeavor made to secure a gradual increase in the patient's weight up to a point slightly above normal. 3. A lower protein content was better tolerated than the amounts now usually given. 4. The partaking of meals should be under close supervision, with rest before and after meals enforced. 5. Constant attention must be given to the question of proper proportions of food elements. 6. Cheerful and contented patients were more likely to be hearty eaters and to progress favorably than those who worried. 7. Eggs and milk were not indispensable in the dietetic management of tuberculous patients. 8. Lunches should not be given between meals unless there was a special reason. 9. It was a hardship to advise patients to procure food, the price of which was almost prohibitive, when a diet of equal or greater nutritive value could be purchased for less money.

Address of the President.—Dr. HERBERT A. BRUCE referred to the practice of fee splitting. This reprehensible practice appeared to have become too common, especially among the younger practitioners. It could not be advocated by any honorable man. It was compromising and demoralizing to both the parties to it, and it was carried on without the knowledge of the patients. Alluding to the repeated efforts of the osteopaths to be placed on an equal footing by law in Ontario with the regulars, Doctor Bruce said there would be no objection to this enactment, provided the osteopaths passed an examination set by the medical council, showing that they possessed a thorough knowledge of human anatomy. Otherwise the medical profession of Ontario would strongly resist all endeavors of the osteopaths to gain by law an unfair advantage over those who had qualified by examination in medicine and surgery.

Experimental Researches in the Surgery of the Bloodvessels and Transplantation of Tissues and Organs.—Professor ALEXIS CARELL described experiments in suturing veins and arteries in dogs and the removal of a portion of the aorta of a dog replaced by a section of the jugular vein of another dog. The dog lived for some years after this operation, being killed eventually by an automobile. In another dog an aluminum tube was inserted into the thoracic aorta. No coagulation of blood took place, and the circulation continued normal. On another occasion the entire kidneys were removed from a dog, and after a lapse of fifty-five minutes, were replaced in the same animal. This animal lived for two years afterward.

Anoci Association, a New Principle in Operative Surgery.—Dr. GEORGE W. CRILE remarked that all brain cells were not equally affected by inhalation anesthesia; certain cells remained awake; the subconscious mind remained active. These awakened cells resisted anesthesia, and were injured to a greater or less degree by the trauma of the operation, and not only by these traumata, but by the effects of fear of the operation, by the impressions received through the special senses of sight and hearing. These effects were manifested by changes in the pulse, respiration, and blood pressure. Exposed portions of the body were supplied with a shock resisting mechanism in the form of noci ceptors in the nerve endings, but the brain had none of these.

An operator might probe the brain with impunity and the patient would feel no pain, but physical injury to any sensitive part of the body having no noci ceptors, caused a discharge of nervous energy, leading to shock and exhaustion. Equally might such a condition result to the patient through what he saw and heard. If a patient was in grave doubt whether or not he could survive an operation, if he had an entire lack of confidence in the hospital or in the ability of the surgeon, he made a bad subject for operation, and might be said to possess "a low threshold to stimuli." If under these conditions he was anesthetized and operated upon, the effect of any physical injury in that state would be augmented; and throughout the entire anesthesia and the entire operation, the incidence of fear would be manifested in the respiration, the pulse, and the blood pressure. Such patients took operations very poorly. This exhaustion was due to the driving of the motor mechanism as a whole; and the motor stimulation resulted from two great causes; the first was the stimulation of the noci ceptors of the body, physical injury, the second, stimulation through the special senses. But whatever the cause, the stimulus was always through the awakening of associated memory. All action must be from philogenetic association. Harmful associations were called noci associations, but if an operation was planned so that all harmful associations were prevented, this state of the patient was called anoci-association, a state of the brain in which there was no discharge of nervous energy. How could the principle of anoci association be carried out? First, the surgeon must be thoroughly competent, and the patient must be confident of this fact. All the surroundings must be so controlled by the operating surgeon that he could truthfully tell his patient that the operation would be distinctly safer than the disease from which he was suffering, that the operation would be so conducted as to be devoid of painful or dramatic incidents, that the patient would have no unpleasant experiences to reflect upon afterward. The patient might be further protected from the harmful influences of fear by the administration of morphine and scopolamine. The anesthetic should preferably be administered by a woman, because somehow the world had more confidence in the ultimate good intentions of a woman than of a man. Anoci association might be produced by nitrous oxide. Where the patient was under the anesthetic anoci association was carried further by so conducting the operation that the brain itself might be entirely isolated from the field of operation by careful infiltration with a solution of novocain, one to 400. Further, the operator must use the minimum amount of traction and the maximum of accuracy and gentleness. In this manner the operation, however extensive, might be performed without materially driving the motor mechanism. At the close of the operation the patient might be given an injection of quinine and urea hydrochloride. The after pains and the postoperative nerve exhaustion would be very materially avoided, and in the case of abdominal operations, it was pleasant to note that the distressing gas pains would be almost wholly avoided. In this way we arrived at a shockless operation. The abdominal muscles were well

relaxed, and the abdominal pains might be discarded almost entirely. The practice of anoci association had markedly reduced the mortality following operation, and the patients more often recovered from the disease affecting them. This was particularly true in Graves's disease. Anoci association had taken from surgery much of its stigma of harshness, and to an almost incredible degree preserved the nervous system of the patient.

Election of Officers.—The following officers were elected for the coming year: President, Dr. Charles MacGillivray, of Port Hope; first vice-president, Dr. A. T. Shillington, of Ottawa; second vice-president, Dr. Taylor, of Goderich; third vice-president, Dr. W. T. Park, of Woodstock; fourth vice-president, Dr. J. H. Hare, of Cobalt; secretary, Dr. F. A. Clarkson, of Toronto; treasurer, Dr. J. H. Elliott, of Toronto.

The second and third days of the meeting were chiefly devoted to clinics at the medical building and in the various hospitals and institutions of Toronto.

New Inventions.

AN IMPROVED TOOTHBRUSH.

By R. M. TOLL, A. B., M. D.,
Scranton, Pa.

If, as the son of Erin says, an exception is always necessary to prove a rule, then there is some excuse for the existence of the present day toothbrush. For in this era of rigid asepsis and antiseptics, of great inventions, and wonderful achievements it stands out in marked contrast as a clumsy, unhygienic, and unsanitary cleaner of teeth.

The modern toothbrush does everything which a decent, self respecting toothbrush should not do. As used at present, its bristles form a most excellent habitat for bacteria of all kinds; and as regards its most important function, cleaning the teeth, it does this poorly, if at all. And why? The most important factor in cleanliness is water. And in the lack of facility to utilize sufficient water lies the great handicap to the beneficial use of the toothbrush. You all know the early morning act of teeth washing. You sprinkle a little powder on your brush, you thrust it in the running water under the faucet (washing away half your powder), and you make a quick pass for your gaping mouth. If your hand is quicker than the force of gravity, you manage to get a dozen drops of water to your mouth; if not, you get one or two drops which cling to the bristles. Then comes a rub on the teeth; then another dab of powder, a thrust, a pass, another rub, and so on until you decide that the teeth have been sufficiently cleaned. That this is a clumsy, unsatisfactory, and imperfect method of cleaning the teeth is very evident. How are we to eliminate the defects of the modern toothbrush and increase its efficacy in the use meant for it? As stated, the important factor in cleanliness is water; and the secret to a *real* toothbrush is in the utilizing of a continuous stream of water. In other words, the toothbrush must be a combination of toothbrush and toothdouché in one.

Such a brush I have had made for me and have been using for some time. It is exactly like any other toothbrush with these additions: The handle has a central canal running through it; the bristles are fastened to a little plate which can be slipped on or off the handle. Between the bristles are minute holes. When it is desired to use the brush, a rubber tube is attached to the end of the handle and to a faucet, and the water is turned on with force sufficient to give a fine spray. In this way it is possible to give the teeth a thorough cleaning without the inconvenience of having constantly to dip and



Toll's improved tooth brush.

redip the brush in water; at the same time the mouth can also be cleaned, while the continuous flow of water between the bristles will wash out whatever powder and debris may cling to them, insuring us a clean brush at its next use.

SUMMARY.

1. The modern toothbrush is clumsy, unhygienic, and unsanitary.
2. To correct its defects, a continuous stream of water must be utilized; the toothbrush must also be a toothdouché.
3. This does away with the necessity for constantly dipping the brush in water, insures a thorough cleaning of the teeth and mouth, and prevents the accumulation of debris in and between the bristles.

312 MULBERRY STREET.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Bloodvessel Surgery and Its Applications. By CHARLES CLAUDE GUTHRIE, M.D., Ph.D., Professor of Physiology and Pharmacology, University of Pittsburgh; Instructor in Physiology, University of Chicago, etc. Illustrated. London: Edwin Arnold; New York: Longmans, Green, & Co., 1912. Pp. xv-360. (Price, \$4.50.)

Although the author has not attempted to cover exhaustively all the divisions of bloodvessel surgery, what subjects he has treated are very comprehensively and satisfactorily done. The history of this surgery, the surgical technique, and various operations with their morphological results occupy the first chapter, while the succeeding five treat of the applications of bloodvessel surgery, anemia and hyperemia and their effects on tissues, the effect of alteration of the circulation on goitre, transplantation of tissues, and resuscitation. Having cooperated with Doctor Carrel in the development of the technique of these surgical procedures, Doctor Guthrie was particularly well prepared for the task he has undertaken.

The operations related include the grafting of both kidneys with segments of aorta and vena cava from one cat to another. While the animal recovers, and even secretes a urine normal in amount and composition, the heterogeneous nature of the graft soon asserts its inability to carry on the function, the animal dying in about three

weeks. A graft of its own kidney in the same manner, however, enabled an animal to live in unimpaired health two years. It is thus apparent, unfortunately, that we cannot hope, for the present at least, to graft successfully a kidney—or thyroid—from a healthy donor. Conversely, the transplantation of vessels has given surprising results: "Carrel obtained success when he transplanted 'heteroglyphs'—e. g., segments of dogs' vessels into cats—and even after keeping the grafts for many days in an ice-chest!" Indeed, it seems to matter very little whether the tissue is "alive" in the generally accepted sense, Guthrie himself having engrafted into the carotid of a dog a segment of another dog's vena cava which had been preserved for two months in formaldehyde solution and then treated successively with dilute ammonia, alcohol, and paraffin oil. The book is replete with information which can, only with the greatest trouble, be garnered elsewhere and is unique in its intrinsic value. Doctor Guthrie is entitled to unstinted praise.

Pleurisy. Including Empyema and Bronchiectatic Conditions. By ALEXANDER JAMES, M. D., F. R. C. P. E., Consulting Physician to the Edinburgh Royal Infirmary and to the Edinburgh City Hospital. With Illustrations. New York: William Wood & Co., 1911. Pp. xi+243. (Price, \$2.25.)

The purpose of the author is to describe the various aspects of the disease as it has presented itself to him in the course of thirty years of hospital and private practice. Urging that the evergrowing sum of medical knowledge naturally tends to loom unduly in prominence and magnitude, his aim is to bring out in relief what he deems—correctly too—a feature too much overlooked nowadays, viz., the conditions which have permitted the pathogenic organisms to invade the tissues. The virulence of the germ, however, is regarded by the author as an "all wisely ordained consequence to mankind of neglect or violation as well as of ignorance of God's laws"—a feature it must be said which is not very clearly brought out. Nevertheless, the book contains much that is interesting.

Old Time Makers of Medicine. The Story of the Students and Teachers of the Sciences Related to Medicine During the Middle Ages. By JAMES J. WALSH, K. C. St. G. M. D., Ph. D., LL. D., Sc. D., Dean, and Professor of Nervous Diseases and of the History of Medicine at Fordham University School of Medicine; Professor of Physiological Psychology at the Cathedral College, New York. New York: Fordham University Press, 1911. Pp. vi+446. (Price, \$2.)

Professor Walsh, beside his many arduous duties as a busy specialist, as dean of a university, whose flourishing condition is largely due to his indefatigability, and as an active teacher, has found time, in his leisure hours, to become an authority on the history of medicine and the biographies of its leading members. We have had occasion to review his work in these pages and are always impressed with the pleasing style which makes his books on these subjects interesting reading. While he does not lay claim to original research work, and in his strenuous career he would never have time to undertake such, he is usually careful in the selection of his authorities. Here and there mistakes occur in his statements. In the present volume he has paid special attention to Hebrew and Arabian physicians and the early period of western restoration of medical science. Thus we find articles on great Jewish physicians, on Maimonides, on great Arabian physicians, on the medical school at Salerno, and on Constantine Africanus. A New York physician who writes on Jewish physicians, we should take it for granted, would have consulted the standard book on Jewish history which appeared only lately in New York, the *Jewish Encyclopedia*, an authoritative work, but our author has not done so; if he had consulted the very rich bibliography given in the encyclopedia he would have found many other works beside the few he has consulted and from which he would have learned that statements from two of the books he quotes must be taken only with great care. This is especially the case with the life and works of Maimonides. In an appendix we find three smaller papers which the author read before professional and lay audiences. The first of these, Saint Luke the Physician, Doctor Walsh read before a meeting of the American Guild of Saint

Luke and the essay was originally published in the New York Medical Journal for January 22, 1910. It appears now with very slight alterations, but no credit is given to the JOURNAL. The omission of this usual act of courtesy, we take it, was only an oversight by the author and the publisher.

Tropenkrankheiten und Tropenhygiene. Von Professor Dr. REINHOLD RUGE, Marine-Generalarzt in Kiel, and Dr. MAX ZUR VERTH, Marine-Oberstabsarzt in Kiel. Mit 8 Karten und 201 Abbildungen im Text. Leipzig: Dr. Werner Klinkhardt, 1912. Pp. viii+463.

Within the space of some 460 pages the authors have endeavored to present the subject of tropical diseases including sixty-three pages dealing with tropical hygiene. In order to accomplish their end they have omitted names and dates and controversial matter. They also discuss in *extenso* only the more important, widespread diseases, treating but briefly the less important and leaving out those that occur but seldom. The section on hygiene, by zur Verth, takes up briefly the climate, clothing, dwellings, food, the water supply and its employment, the care of the body, etc.

The rest of the book is divided as to authorship between Ruge and zur Verth, the former writing upon those diseases which belong in the field of internal medicine, while the latter deals with those relating to external medicine. The first form of diseases taken up is that class resulting from the presence of protozoa. Of these, malaria and sleeping sickness are dealt with very fully. In turn are discussed those diseases due to bacilli, plague and leprosy occupying most of the space, and those in which the cause is unknown, as yellow fever and beriberi. Another section deals with diseases due to worms and to arthropods, filariasis being the most important. Skin diseases and poisonings by animal and vegetable substances receive some twenty-five pages. The final chapter is devoted to those cosmopolitan diseases which are found in the tropics as well as elsewhere, such as smallpox, tuberculosis, syphilis, etc. The healing of wounds, the varieties of tumors both benign and malignant, and numerous other topics are briefly discussed.

In consequence of their avoidance of unsettled questions, and of their adherence to a concise method of expression, a very large amount of important material is presented in this book. The arrangement is also very good. In the article on plague one finds the following subdivisions: Distribution, cause, conveyors, epidemiology, pathological anatomy, manifestations of diseases, treatment, diagnosis, differential diagnosis, prognosis, prophylaxis. The index is also unusually good. The book is in every way a valuable one.

Fatigue and Efficiency. A Study in Industry. By JOSEPHINE GOLDMARK, Publication Secretary, National Consumers' League. Introduction by FREDERIC S. LEE, Ph. D. Containing also the Substance of Four Briefs in Defense of Woman's Labor Laws by LOUIS D. BRANDEIS and JOSEPHINE GOLDMARK. New York: Charities Publication Committee, 1912. Pp. xvi+890. (Price, \$1.50.)

Although this volume is not one that deals directly with medical topics it is, nevertheless, one that should be read by all physicians, not only by those who may be connected more or less closely with the questions dealt with in this book, but also by those who feel that nothing that influences the welfare of humanity is outside their realm. The doctor of the present is, more than ever, one of the most important factors in the gradual shaping of public opinion.

The world at large has much to thank Miss Goldmark for in the gathering and presentation of the many facts that she has discovered during her years of investigation. It is difficult to understand how any employer of even ordinary intelligence could expect satisfactory results from men, women, and even children who had been driven in their work far beyond the limit of human endurance. *Fatigue and Efficiency*; the title in itself is a masterly presentation of a physiological fact. The dependence of the latter upon the extent of the former is as absolute as a statement in geometry. The first part of 288 pages is devoted to a discussion of fatigue and efficiency, while the second part of 565 pages gives in brief the world's

experience upon which legislation limiting the hours of labor for women is based.

The nature of fatigue is thoroughly reviewed; this is followed by a discussion of the new strains in industry, such as speed and complexity, monotony, noise, rhythm, etc. The other chapters in their order take up the effects of physical overstrain in industry, the relation of fatigue to output, fatigue and overtime work, the new science of management, and the development of the labor laws; all of these are dealt with at some length.

After reading Miss Goldmark's report of facts one feels that there is much to be done to lighten the task of many of our fellow beings. Many of the sentences that one reads should be put before the eyes of all. "Overstrain in industry is obviously no invention of sentiment or fiction when the chemical nature of fatigue and its complex relations with life are realized. . . . The regulation of working hours is the necessary mechanism to prevent overfatigue or exhaustion, forerunner of countless miseries to individuals and whole nations." In discussing the relation of fatigue to industrial accidents it is found that "the statistics of all countries which have recorded the hours at which such injuries occur prove that, other things being equal, the accidents increase progressively up to a certain time in the morning and again in afternoon work." Another sentence of interest states that: "It is, in the last resort, those who succumb who determine the dangerousness of any trade."

In all the efforts made to obtain a limited number of hours in an industry the antagonism arises from the belief that such a move will curtail the output. It is more than interesting to note that where close examination has been made "the worker's increased efficiency more than balanced the curtailment of working time"; also that "in a general way it has gradually become recognized that shorter hours improve health, and that improved health and efficiency under the short hour system is the basis of higher output."

The entire book is replete with logical replies and arguments that cause the reader to agree with Abbe, of the Carl Zeiss Foundation, who was certain that no thinking person could fail to be convinced by the relentless logic which links efficiency and the length of the work day. There is really no limit to the class of people who should read this book. The physician should consider it a direct challenge to lend his aid to the suffering; the employer, the employee, and the lawyer, all should familiarize themselves with this publication. It is, indeed, an extremely valuable contribution to the world, one whose influence should be far reaching and permanent.

NEW PUBLICATIONS.

Thomas, André.—Cerebellar Functions. Translated by W. Conyers Herring, M. D., of New York. With Eighty-nine Illustrations. (Journal of Nervous and Mental Disease Monograph Series No. 12.) New York: Journal of Nervous and Mental Disease Publishing Company, 1912. Pp. iii-223. (Price, \$3.)

Binet, Alfred, and Simon, Th.—A Method of Measuring the Development of the Intelligence of Young Children. Authorized Translation with Preface and an Appendix Containing an Arrangement of the Tests in Age and Diagnostic Groups for Convenience in Conducting Examinations. By Clara Harrison Twon, Ph.D., Director of the Department of Clinical Psychology, Lincoln State School, and Colony, Lincoln, Ill. Lincoln, Ill.: The Courier Company, 1912. Pp. 83. (Price, \$1.)

Bashford, E. F.—Fifth Scientific Report of the Investigations of the Imperial Cancer Research Fund. Under the Direction of the Royal College of Physicians of London and the Royal College of Surgeons of England. Published by Authority of the Executive Committee. London: Taylor & Francis, 1912. Pp. vi-94.

Doty, Alvah H.—A Manual of Instruction in the Principles of Prompt Aid to the Injured. Including a Chapter on Hygiene and Disinfection. Designed for Civil and Military Use. Fifth Edition. New York and London: D. Appleton & Co., 1912. Pp. xv-229. (Price, \$1.50.)

Zenner, Philip.—Mind Cure and Other Essays. Cincinnati: Stewart & Kidd Company, 1912. Pp. iv-157. (Price, \$1.25.)

Sibley, W. Knowsley.—The Treatment of Diseases of

the Skin. New York: Longmans, Green, & Co.; London: Edward Arnold, 1912. Pp. vii-280.

Burnet, Etienne.—Microbes and Toxines. With a Preface by Elie Metchnikoff. Translated from the French by Dr. Charles Broquet and W. M. Scott, M. D. Illustrated. New York and London: G. P. Putnam's Sons (The Knickerbocker Press), 1912. Pp. xvi-316.

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Matson, George Charlton.—The Production of Mineral Waters in 1911. With a Paper on the Concentration of Mineral Water in Relation to Therapeutic Activity, by R. B. Dole. Advance Chapter from Mineral Resources of the United States, Calendar Year 1911. Washington, D. C.: Government Printing Office, 1912. Pp. 60.

Philadelphia General Hospital Reports. Volume VIII, 1910. Edited by Davis Riesman, M. D. Pp. xi-357.

Forty-eighth Annual Report of the Trustees of the Boston City Hospital. Including the Report of the Superintendent upon the Hospital Proper, the South Department for Infectious Diseases, the Haymarket Square Relief Station, etc. For the Year Ending January 31, 1912. Pp. 193.

Proceedings of the Twenty-second Annual Meeting of the Association of American Medical Colleges, held in Chicago, February 28, 1912. Pp. 88.

Announcement of Courses at the College of Medicine, Ohio-Miami Medical College, 1912-1913. Pp. 76.

Albany Medical College Announcements for Session 1912-1913. Register of Students for 1911-1912. Pp. 50.

University of Toronto Faculty of Medicine Calendar for Session 1912-1913. Pp. 97.

Report of the Commissioner of Education for the Year Ending June 30, 1912. Washington, D. C.: Government Printing Office, 1912. Pp. xliii-677 to 1407.

Warfield, Louis M.—Arteriosclerosis. Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis, and Treatment. With a Special Chapter on Blood Pressure. An Introduction by W. S. Thayer, M.D., Professor of Clinical Medicine, Johns Hopkins University. Illustrated with Twenty-eight Engravings. St. Louis: C. V. Mosby Company, 1912. Pp. 220. (Price, \$2.50.)

Meetings of Local Medical Societies.

MONDAY, September 16th.—Elmira Clinical Society; Hartford, Conn., Medical Society.

TUESDAY, September 17th.—Triprofessional Medical Society, New York (annual); Medical Society of the County of Kings; Medical Society of the County of Westchester; Syracuse Academy of Medicine; Buffalo Academy of Medicine; Binghamton Academy of Medicine (annual); Ogdensburg Academy of Medicine; Oswego Academy of Medicine.

WEDNESDAY, September 18th.—Medicological Society, New York; Buffalo Medical Club; New Jersey Academy of Medicine (Jersey City); New Haven, Conn., Medical Association.

THURSDAY, September 19th.—German Medical Society, Brooklyn; Aesculapian Club of Buffalo; Newark, N. J., Medical and Surgical Society.

FRIDAY, September 20th.—Clinical Society of the New York Postgraduate Medical School and Hospital; Brooklyn Medical Society.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending September 4, 1912:

Fairbanks, G. D., Acting Assistant Surgeon. Directed to proceed to Eagle Pass, Texas, for the reexamination of a rejected alien. **Franklin, E. C.**, Professor. Detailed to attend, as a delegate on behalf of the United States, the International Congress of Applied Chemistry, to

be held in New York, September 6 to 13, 1912. **Hunt**, Reid, Professor. Detailed to attend, as a delegate on behalf of the United States, the International Congress of Applied Chemistry, to be held in New York, September 6 to 13, 1912. **Hurley**, J. R., Passed Assistant Surgeon. Granted one month's leave of absence from September 3, 1912. **Kearney**, R. A., Assistant Surgeon. Assigned to duty in the bureau in charge of the miscellaneous division, effective September 1, 1912. **Leake**, J. P., Assistant Surgeon. Directed to proceed to Buffalo, N. Y., and report to Passed Assistant Surgeon W. H. Frost for duty in the investigation of an outbreak of infantile paralysis. **Prebble**, Paul, Assistant Surgeon. Relieved from duty in the bureau in charge of the miscellaneous division, effective August 31, 1912.

Boards Convened.

Board of medical officers convened to meet at Manila, P. I., upon call of the chairman for the purpose of making a physical examination of Passed Assistant Surgeon V. G. Heiser, to determine his fitness for promotion to the grade of surgeon. Detail for the board: Passed Assistant Surgeon Carroll Fox, chairman; Passed Assistant Surgeon Robert Olesen, recorder.

Board of medical officers convened to meet at San Juan, P. R., upon call of the chairman for the purpose of making a physical examination of Passed Assistant Surgeon S. B. Grubbs to determine his fitness for promotion to the grade of surgeon. Detail for the board: Passed Assistant Surgeon R. H. Creel, chairman; Passed Assistant Surgeon C. W. Chapin, recorder.

Board of medical officers convened to meet at the Marine Hospital, San Francisco, Cal., Monday, September 9, 1912, for the purpose of making a physical examination of Passed Assistant Surgeon W. C. Billings to determine his fitness for promotion to the grade of surgeon. Detail for the board: Surgeon R. M. Woodward, chairman; Passed Assistant Surgeon F. H. McKeown, recorder.

Board of medical officers convened to meet at the bureau, Tuesday, September 10, 1912, at 10 o'clock a. m., for the examination of candidates for admission to the Service as assistant surgeons. Detail for the board: Surgeon D. A. Carmichael, chairman; Surgeon H. S. Cumming, member; Passed Assistant Surgeon C. H. Lavinder, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending September 7, 1912:

Dickinson, C. F., First Lieutenant, Medical Reserve Corps. Granted four months' leave of absence. **Ford**, Clyde S., Major, Medical Corps. Extension of sick leave of absence for two months granted. **Garcia**, Leon C., Captain, Medical Corps. Orders relieving him from duty in the Philippines Division, March 15, 1912, revoked.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending August 31, 1912:

Ames, M. H., Passed Assistant Surgeon. Detached from the *Helena* and ordered to the *Monterey*. **Blackwell**, E. M., Surgeon. Detached from the Naval Dispensary, Navy Department, and ordered to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C. **Bloedorn**, W. A., Passed Assistant Surgeon. Detached from the *Monterey* and ordered to the *Helena*. **Cohn**, I. F., Passed Assistant Surgeon. Detached from the *Washington* and ordered to the *Des Moines*. **Downey**, J. C., Passed Assistant Surgeon. Detached from the Bureau of Steam Engineering, Navy Department, and ordered to the Alaskan Coal Investigating Expedition. **Henry**, R. B., Passed Assistant Surgeon. Detached from the Olongapo station to waiting orders. **Holcomb**, R. C., Surgeon. Detached from the Naval Hospital, Las Animas, Colo., and ordered to the Naval Medical School, Washington, D. C. **Hoyt**, R. E., Surgeon. Detached from the *Michigan* and ordered to the *Prairie*. **Jones**, R. F., Assistant Surgeon. Detached from the Canacao Hospital and ordered to the *Rainbow*. **Kennedy**,

R. M., Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the Naval Dispensary, Navy Department, Washington, D. C. **Phillips**, E. W., Assistant Surgeon. Detached from the *Paducah* and granted one month's leave. **Porter**, F. E., Passed Assistant Surgeon. Orders directing him to proceed to the Las Animas Hospital revoked; detached from the Naval Hospital, Portsmouth, N. H., and ordered to treatment at the Naval Hospital, Boston, Mass. **Smith**, C. G., Surgeon. Detached from the *Mississippi* and ordered to the *Michigan*. **Stuart**, D. D. V., Assistant Surgeon. Resignation accepted, to take effect September 1, 1912. **Valz**, E. V., Passed Assistant Surgeon. Detached from the *South Dakota* and ordered to the *Cleveland*.

Births, Marriages, and Deaths.

Married.

Beckwith—Caldwell.—In Philadelphia, on Monday, September 2d, Dr. Robert Payne Beckwith and Miss Blanche Caldwell. **Boggs—Houck.**—In Bradford, Pa., on Monday, July 22d, Dr. Russell H. Boggs, of Pittsburgh, and Miss Etta Agnew Houck. **Carnett—Gemmell.**—In Chestertown, Md., on Saturday, August 31st, Dr. John Berton Carnett, of Philadelphia, and Miss Alice Adele Gemmell. **Congdon—Sisum.**—In St. Johnsville, N. Y., on Monday, September 2d, Dr. Clark E. Congdon, of Fort Plain, and Mrs. Marie Margaret Sisum. **Crandall—Irey.**—In Norfolk, Va., on Tuesday, September 3d, Surgeon R. P. Crandall, United States Navy, and Miss Hazel Clark Irey. **Forrest—Groff.**—In Wilmington, Del., on Saturday, August 31st, Dr. George W. K. Forrest and Miss Amelia Groff. **Foster—Thomas.**—In Leavenworth, Kansas, on Wednesday, September 4th, Lieutenant George B. Foster, Jr., Medical Corps, United States Army, and Miss Sarah Ellis Thomas. **Saunders—Bacon.**—In Yarmouthport, Mass., on Thursday, September 5th, Dr. Truman Laurance Saunders, of New York, and Miss Elizabeth Gorham Bacon, daughter of Dr. and Mrs. Gorham Bacon, of New York. **Stoutenburg—Galvin.**—In Binghamton, N. Y., on Thursday, August 29th, Dr. Abram William Stoutenburg and Miss Mary A. Galvin. **Townes—Griffith.**—In Waverly, Va., on Thursday, September 5th, Dr. Charles D. Townes and Miss Mary Chamberlain Griffith.

Died.

Blauvelt.—At Saranac Lake, N. Y., on Sunday, September 1st, Dr. Elizabeth Hedges Blauvelt, aged thirty years. **Brett.**—In Braintree, Mass., on Sunday, September 1st, Dr. Frank Wallace Brett, aged forty-five years. **Carruth.**—In Cohoes, N. Y., on Saturday, August 31st, Dr. Clarence Edgar Carruth, aged fifty-six years. **Cocks.**—In Pleasantville, N. Y., on Sunday, September 8th, Dr. George H. Cocks, of New York, aged fifty-one years. **Cook.**—In Brooklyn, N. Y., on Thursday, September 4th, Dr. Charles Delano Cook, aged eighty-six years. **Gayer.**—In Raton, N. M., on Monday, August 26th, Dr. Charles E. Gayer. **Hulcee.**—In Louisville, Ky., on Thursday, August 29th, Dr. Hamilton H. Hulcee, aged sixty-six years. **Hunter.**—In Chicago, on Thursday, September 4th, Dr. Warren H. Hunter. **Klein.**—In Sea Cliff, N. Y., on Saturday, September 7th, Dr. William T. Klein, of New York, aged thirty-seven years. **Murphy.**—In Boston, on Tuesday, September 3d, Dr. James C. Murphy, of Norwood, aged thirty years. **O'Connell.**—In Washington, D. C., on Wednesday, August 28th, Dr. Jeffrey Conway O'Connell, aged seventy-two years. **Parker.**—In South Hamilton, Mass., on Saturday, August 31st, Dr. Charles Thorndike Parker, formerly of New York, aged fifty-three years. **Parkin.**—In Romeo, Mich., on Tuesday, August 27th, Dr. Robert L. Parkin, aged fifty-three years. **Prosser.**—In Olean, N. Y., on Thursday, August 29th, Dr. Wellington Prosser, aged seventy-eight years. **Shackelford.**—In Stony Point, Va., on Tuesday, August 27th, Dr. William C. Shackelford, aged seventy-seven years. **Thayer.**—In Grafton, W. Va., on Friday, August 30th, Dr. Abel Huston Thayer.

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FURTHER NOTES ON THE SANITARY CONTROL OF PROSTITUTION IN SOME EUROPEAN CITIES.

BY FREDERICK BIERHOFF, M.D.,

New York.

The fact that the important topic of prostitution and its resultant ills has ceased in a measure to be *taboo* in recent years, is gratifying evidence of the fact that the public has gradually come to realize the immense importance of these questions in their relation to public welfare. Unfortunately, however, the majority of individuals and organizations which deal with the question, do so solely from the view point of the "abolitionists," and absolutely deny the justifiability of the stand of the "reglementation-ists."

It has been my privilege, during a number of years, to study these important topics from both points of view, and to publish my experiences and my views in various articles. It is not my purpose, in the present article, to discuss the justifiability of the present standard of sex morality, since that discussion has been actively in the minds of public men and women since history began. It will not be decided in our day, and it will still be fresh and vital when we shall long since have turned to dust. I have preferred rather to take up the problem *as it exists*, for only in that way can one do the top c justice.

I am fully aware of the fact that I have been publicly attacked for my views, particularly in the publications of our suffragette sisters; and that my views are not those of the "purists"; but they are based upon the conditions as they exist, and not solely and entirely upon conditions in our own city.

Some years ago I published in the *NEW YORK MEDICAL JOURNAL* (August 17 to September 7, 1907), a study of the methods of police control as they then existed in a number of cities in Germany. Since then I have carried on my studies in the same and in other cities, and perhaps I may be pardoned for again touching on this subject, to present my later experiences. I have elsewhere (*American Journal of Urology*, July, 1911), also spoken of conditions existing in some parts of Europe, but now I shall take up only existing conditions in Berlin, Dresden, Bremen, and in Copenhagen. The last mentioned is representative of conditions in Denmark.

BERLIN.

I shall not again go over all the regulations concerning police control in this city, preferring to refer the reader to the original publications. There have been, however, a number of important changes, which I shall touch upon. Probably the most important of these has been the introduction of microscopical examinations, made at regular intervals in *all* cases of women under control, and at any time in other cases in which the examining physician finds suspicious symptoms. I was particularly gratified to find that these microscopical examinations at regular intervals had been inaugurated, in great part as a result of my criticism in the aforementioned article. That these examinations have resulted in the detection of a greatly increased number of infections among prostitutes, stands to reason.

The specimens are now carefully taken by the examining physician, at regular intervals, the date of the next ensuing microscopical examination being, at the same time, stamped upon the woman's "control book," and the woman is asked to wait at police headquarters until the result of the examination has been reported from the laboratory.

The specimens taken from the urethra, cervix uteri, and Bartholinian glands, are placed in the woman's "control book," after being marked with a number to correspond with the number of the book, and taken to the laboratory. This is a well lighted, well equipped room, in which four female laboratory workers are employed in preparing and examining specimens. Should the result of the examination be negative, the report is at once entered upon the "control book" and sent down to the examining physician in question, whereupon the woman is permitted to go home. Should the findings, however, be positive or suspicious, then the specimen in question is left under the microscope, and a messenger despatched to the examining physician, who must go to the laboratory and personally verify the findings, or give his opinion to the contrary. If the report shows the presence of infection, the woman is held at headquarters to be later sent to the city hospital. The methods of examination as at present carried out are fully up to the standard required by modern science.

A favorite argument advanced by the "abolitionists," is that the examinations are of no practical value and serve no good end, and that they withdraw only a part of the sources of infection. In order to get an intelligent idea of the results of the examinations in Berlin, I asked for a report of the results of the examinations. This was very kindly

furnished by the authorities, and is as follows for the seven months of 1911 completed at the time of my visit:

NUMBER OF MICROSCOPICAL EXAMINATIONS MADE AT POLICE HEADQUARTERS, BERLIN, GERMANY (JANUARY 1 TO JULY 31, 1911).

Month.	Number specimens examined.	Number found diseased.	Daily average number specimens examined.
January	5,997	255	192
February	5,715	229	204
March	6,376	247	206
April	6,098	211	213
May	6,769	294	218
June	7,111	225	237
July	9,035	270	291
Total	47,971	1,704	
Monthly average	6,853	242	
Annual total on basis of this average	82,236	3,024	

If one stops to think that during the course of one year 3,024 sources of infection with venereal disease would be withdrawn from circulation, and prevented from spreading these diseases broadcast. I think that the fallacy of the argument of the abolitionists, that these examinations serve no real sanitary purpose, must be apparent to all thinking and unbiased individuals.

Another favorite argument with the abolitionists and the hysterical sentimentalists, is that these examinations by the police authorities, and the process of placing prostitutes on the inscription lists, are unjust and brutal procedures, and are frequently forced upon absolutely innocent women. Any one who investigates the entire method of inscription of prostitutes—at least so far as the cities of Germany are concerned—will be at once struck by the falsity of such arguments. In every one of the cities that I have visited, every woman arrested upon suspicion of prostitution has, upon the first arrest, to be taken to the official in charge of the "morals police," who converses with the woman, explains to her the breach of the law of which she has been suspected, or proved to be guilty, questions her concerning her surroundings and her position, etc., and warns her concerning the penalties which will be visited upon her for a repetition of the offense. At the same time the police official hands her, free of charge, a booklet of which the following is a translation:

A BOOKLET FOR MORALLY IMPERILED WOMEN AND GIRLS.

The first part of the booklet contains information concerning institutions and organizations to which a woman may turn for assistance in case of financial need or illness or homelessness, and a list of the agencies to which women who have a trade may apply for positions.

The second part contains information concerning venereal diseases and the dangers of illicit intercourse. Its translation is as follows:

PART TWO.

Venereal Diseases.

1. Illicit intercourse, even on a single occasion, subjects every girl—aside from the possibility of becoming pregnant—to the danger of contracting venereal disease.
2. Venereal diseases which are to be particularly feared are syphilis and gonorrhea. They are exceedingly frequent among the men of all circles, who seek extramarital sexual intercourse, and are extremely infectious. Their transmission occurs principally through sexual inter-

course, but also by means of kissing, and touching, as also through the common use of eating utensils, drinking vessels, bathing utensils, towels, sponges, body bandages, bed linen, douches, etc. A particularly large number of infections occur during intoxication.

3. Syphilis breaks out several weeks after infection, in the form of an erosion, a pimple, or a sore at the point of infection, and as a rule upon the external genitals, and leads to inflammations of the throat, to an eruption, and the formation of sores on the skin, at the anus, in the mouth, and in the throat. If neglected, it gradually infects the whole body, and may, in the course of time, attack the internal organs, the brain, the spinal cord, and the bones. Not infrequently it results in deformities—for instance, of the face through the falling in of the nose—is frequently the cause of grave invalidism, and at times ends in death. It is infectious for many years, and may be transmitted to the children through heredity, even at a time when the invalid has for a long time not noticed any signs of the disease.

4. Gonorrhea develops within a few days following the infection, with a discharge from the genitals, usually with the accompaniment of pain, burning, or itching. From this point it may spread gradually to other parts of the body, and cause inflammation or suppuration of the glands of the groin—buboes—of the inner organs of the pelvis, of the joints, of the eyes. Through these, it often leads to permanent invalidism, weakness, and the inability to work; frequently it causes blindness. In cases of confinement, the poison of gonorrhea is capable of entering the eyes of the newborn child, and also to blind it. Gonorrhea is frequently still present and infectious after the patients believe themselves to have been long since cured, particularly after the discharge has long since ceased.

The following precautions will serve to prevent and combat all of these conditions:

I.

Guard yourselves, in this direction, against the enticements of conscienceless men; against the urging of careless female friends; against the dazzling promises of procuresses; against the excessive use of intoxicating drinks, such as beer, wine, brandy, champagne, which weaken the will.

II.

Do not make use of articles used by strangers, such as eating utensils, drinking vessels, bath utensils, towels, sponges, body bandages, bed linen, douches, etc.

III.

Always observe the most careful cleanliness, particularly of the genital organs.

IV.

Should you, however, have had sexual intercourse, or have made use of suspicious articles, then consider with the appearance of every excoriation, every pimple or sore on the genitals, all inflammations of the throat, and eruptions on the skin, the possibility of an infection with syphilis; with every burning, itching, or discharge from the genitals, the possibility of an infection with gonorrhea. Avoid carrying this genital discharge with the hands to the eyes, and upon the appearance of any one of these symptoms mentioned, go at once to a male or female physician, regularly licensed by the State. These are pledged to secrecy by law. You may confide fully in them. Never go for treatment to a quack nor to a midwife nor a nurse, a barber, nor a druggist. Be warned against patent medicines and newspaper advertisements. Do not risk a severe illness, and be assured that through proper and timely treatment, by a physician, most cases of venereal disease are curable.

V.

Members of sick benefit organizations, who may be infected with venereal diseases, are entitled to treatment free of charge, by the physician of the organization, and in the case of inability to work, to the payment of the sick benefit without deductions. The poor suffering with venereal diseases will be treated, free of charge, by the physician of the poor upon the presentation of a certificate of illness, which is to be obtained *beforehand* from the chairman of the charities commission, and in case of need, will receive hospital care free of charge. Public stations for the venereally diseased are maintained in the Rudolph

Virchow Hospital, Augustenburger Platz, and in the Royal Hospital of the Charité, Schumann Strasse No. 21-22.

VI.

In addition to the police physicians, specialists for skin and venereal diseases, mentioned in the accompanying list, are prepared to treat venereally diseased girls free of charge.

PART THREE.

Women arrested for the first time, by officials of the morals police, on the suspicion of public prostitution, receive a hearing and are warned, in the office of the morals police, and where sufficient grounds are presented, examined (by a woman).

Should they be found venereally diseased, and should their personal circumstances give no guarantee that they will submit themselves to private medical treatment until the time of their cure, and give up the practice of prostitution, they are transferred to the hospital division of the city almshouse. Here they remain until the physician in charge recommends their discharge. In case of resistance against the regulations of the physician of the institution, they may be punished with the disciplinary penalties permissible in the hospital.

In case those warned against continuing the practice of public prostitution do so in spite of the warning, their placing under the supervision of the morals police must follow.

In cases of persons under eighteen years of age, proceedings for education, under guardianship, are begun. In case of necessity they will be placed at once in an educational institution. Parents, guardians, or the court of chancery will receive legal notification of the neglected moral condition of all such minors.

A woman who engages in professional prostitution without being under the supervision of the morals police, is punishable with imprisonment, up to six weeks. The court may also, after the termination of the punishment, transfer the convicted person to the national police department, for commitment to a workhouse, or a correctional institution, or an educational institution or a refuge, up to two years (361, 362 of the Penal Code of the German Empire). An individual who is under the supervision of the morals police, is obliged to submit herself to a continuous medical examination of the state of her health. Should she be found to be venereally diseased, or to be suffering with any infectious disease, she is obliged to submit to transference to the hospital specified by the authorities, and to treatment up to the time of her cure.

In the hospital she is obliged to give unquestioning obedience to the orders of the physicians, and the supervising officials, as well as to the regulations of the institution.

It is forbidden her to visit a number of particularly frequented streets and places.

The visiting of theatres, circuses, exhibitions, and the concert gardens belonging thereto, of the zoological gardens, and of the museums, is forbidden her.

It is forbidden her to go to the railroad stations, excepting for the purpose of travel.

The location of her dwelling, and her conduct therein, are subjected to decided restrictions.

Transgressions of these control regulations are punished with the aforementioned penalties.

In each of these booklets there is a leaflet containing lists of the physicians who have been appointed to treat, free of charge, such women and girls infected with venereal diseases as may visit them.

The directions for the services, furnished to the physicians on duty at police headquarters, for the examination of the women, are as follows:

I.

The physicians on duty with the morals police, are under the jurisdiction of Division IV, of the Police Presidency. Supervision of their duties is vested in the Governmental Medical Counselor of Division I.

The physicians are expected to comply with the official requests of the morals police.

II.

The medical examinations of those prostitutes who are under police control, as well as those who are arrested upon the suspicion of prostitution, take place on work days from 9 o'clock a. m., in the rooms set aside for this purpose, at police headquarters.

The examination is to be carried out by the physicians intrusted therewith, in such manner that four of them, that is one in each of the four rooms set aside for this purpose, shall be on duty from 9 until 12, and from 12 until about 3 o'clock, or until the examination of all of those who present themselves for examination is completed.

III.

On Sundays and holidays, examinations are made in only one room, from 10 until 12 o'clock. The physicians take up this service in rotation, according to a list to be agreed upon yearly by the physicians.

The physicians on duty must, however, on these days remain in the rooms of the morals police, such time — if necessary until after 12 o'clock noon — as may be required for the examination of all prostitutes who may present themselves.

IV.

The purpose of the examination is to determine whether an individual coming under examination suffers with an infectious disease, which requires her transference to the hospital for the purpose of compulsory cure, or to be recommended for ambulant treatment. Coming principally under consideration are venereal diseases (syphilis, gonorrhea, soft chancre), and all disease conditions which may arouse justifiable suspicion that they are venereal, such as itch, and possibly acute infectious diseases.

It is not permitted to the physicians of the morals police to exercise the privilege of deciding between the question of hospitalization and nonhospitalization. In the case of individuals who assert that they are under ambulant treatment — also under ambulant treatment at the hospital — the cases in every instance, after examination and the entering of the conditions found present, and the suggestion of the examining physician are to be referred to the executive of the morals police for an examination into the circumstances.

V.

The individuals who present the following symptoms of venereal diseases are to be proposed for compulsory cure in the hospital in Froebel Strasse:

- (a) Discharge containing gonococci.
- (b) Other blennorrhæas of urethral, vaginal, and uterine origin, negative as regards gonococci, when they are accompanied by erosions, or are very copious.
- (c) Chancres, on whatever part of the body they may occur, and all other pus discharging formations, which arouse suspicion of infections, which occur in, or upon the genital organs, or in the neighborhood thereof.
- (d) Broad condylomata.
- (e) Buboës of specific character.
- (f) Syphilitic eruptions, or such eruptions as raise suspicion that they may be of syphilitic character.

Girls who are afflicted with vermin are to be referred to the morals police, with a short recommendation for the application of cleansing procedures.

VI.

According to the ministerial directions of June 11, 1898, the following, at least, are to be inspected, in the course of the examination:

1. Face, mouth, and pharynx (spatula to depress the tongue), tips, glands of the neck, chest, arms (roséola), axillary glands, elbow glands.

2. On the examining chair: Anus (condylomata, ulcerations), skin of abdomen and thighs, inguinal glands, labia majora and minora; particularly the posterior commissure and urethral opening, urethra and orifices of the Bartholinian glands, by means of the proper finger pressure.

3. With the speculum: Vagina, os uteri, and cervix uteri; in case of profuse secretion, irrigation of the vagina with fluid, or cleansing by means of cotton sponges.

In the case of menstruating prostitutes, examination of the internal organs only is to be omitted. The rest of the examination is to be completely carried out.

Should it be discovered on examination of the arrested

individual, that she has not as yet been deflowered, then the examination with the speculum is to be omitted.

The physicians of the morals police are required to make use of the modern aids to examination, according to the present status of science.

The proof of the presence of gonorrhea is to be considered positive only through the finding of positive gonococci.

In accordance therewith, the microscopical examination of secretions must, without exception, be made:

(a) In the case of all individuals whose condition of sexual health is to be determined, upon the request of other authorities.

(b) In the case of all individuals coming up, for the first time, for examination by the morals police.

(c) In the case of all individuals who are to be transferred to the hospital because of gonorrhea.

(d) In the case of those girls brought to the physicians in the regular daily order, with a particular request in this regard.

(e) In cases of other particular requests of the morals police.

Further than this, the frequency of the microscopical examinations must be left to the judgment of the physicians. They must bear in mind the intention of diminishing, to the greatest possible minimum, the danger of infection from prostitutes, and particularly not to dismiss any individual suspected clinically of having gonorrhea, before her secretions are microscopically examined.

The secretions are to be taken, in every instance, according to the degree of attainability of the secretions, from the following places: Urethra, cervix uteri, and Bartholinian glands, and possibly also the anus.

VII.

For the purpose of preparing the microscopic specimens, and for their examination for specific cases of disease, women laboratory workers have been appointed. The method to be observed in the taking of secretions and their transmission to the female laboratory attendants, as well as the entering of the microscopic findings in the books, is published by means of placards in every physician's room.

The morals police reserve the right to permit, through special enactment affecting each individual female laboratory assistant, that the physicians leave the determination of negative findings to the female laboratory assistant. The decision of a positive finding, however, may be made only by one of the physicians, upon the basis of a personal inspection of the microscopic specimen.

VIII.

The physicians of the morals police are required to furnish, at their own expense, the necessary instruments, in quantity sufficient in the judgment of the authorities, and to keep them in readiness. Solutions for disinfecting, cotton, and towels will be furnished. The instruments which may be made only of glass, porcelain, or metal are, in every instance, to be used for only one examination, and are then to be disinfected according to the directions prescribed. The physicians are, during their service, to wear a coat of washable material (operating gown). The cleansing of these will be done by the morals police.

IX.

At once, after the examination of every individual under the supervision of the morals police, the results of the objective macroscopic and eventually the microscopical findings are to be entered, in the German language, in her book, and, in the case of the noninscribed, on the margin of the official document presented in her case, and in addition its interpretation, as well as the suggestion based thereupon, with the addition of the name (initials) of the examining physician, and date of the examination. Schematic regulations for the form of these notations, in so far as they affect the interpretation of the findings and the suggestions based thereon, are to be found in the appendix of these service directions.

Notice is particularly drawn to the possibility of ambulant treatment provided for therein, in all positive findings of venereal disease. Particular mention is required in addition whenever, as a result of the findings, or for any other reason, it is assumed that the patient has known the venereal character of her disease and its infectious character.

In case of such venereal patients as are not under the supervision of the morals police, an explicit notification by the physician is necessary, even when they cannot have recognized the venereal character of their disease and its infectiousness.

In all cases it is to be mentioned if the individual is still a maiden.

The names of the diseased and the suspected are to be entered, with an accurate report of the findings, in the journal which is to be found in each of the four examination rooms. In case the girl has known the venereal character of her disease and its infectiousness, a special memorandum of this fact must not be omitted.

Should the examining physician deem the transference of a prostitute to another danger class to be requisite, he must give notice to that effect to the morals police upon the prescribed form and accompany this by her control book.

A notice to the morals police is furthermore required, when the physician learns by examination or otherwise that an individual under the supervision of the morals police is venereally diseased, or suffers with disease changes of inguinal glands, or such other conditions which lead to suspicion of venereal disease, and has knowingly concealed this from the morals police, instead of notifying the presiding officer of the morals police, as provided by the regulations, at once upon discovery thereof.

X.

For the purpose of substitution, only such physicians may be chosen as have been particularly admitted by the governmental medical council, in agreement with the directors of Division IV of the police presidency. A short written communication is to be made to the presiding officer of the morals police with the name of the substitute and the reason of the substitution in every instance of substitution; also, in case of leave of absence, at the beginning of the leave, and upon the return to service.

Substitutions for a period greater than three days are permissible only after leave of absence has been granted by the director of Division IV.

THE POLICE PRESIDENT.

Berlin, October, 1910.

It is only after repeated breaches of the law have been committed that the woman is punished, and then in the case of minors the relatives or guardian, if any, are informed of the facts of the case, and are cautioned to observe better watchfulness over the actions of the accused. Where no relatives or guardians are to be found, or where these decline to interfere, the minor is then remanded to the custody of a protective organization, but not placed under control as a prostitute. *Inscription upon the list of prostitutes occurs only in the case of a woman who has reached the legal age, and who disobeys the warnings of the authorities to abstain from her practices.*

I have had the privilege of being present during the conversation between a police official and an individual arrested for the first time, and was much impressed by the character and tone of the warning issued to the culprit.

It may be advanced as an argument, that if there were any virtue at all in these examinations, the total amount of venereal disease in Berlin must necessarily have been reduced, and because this is apparently not the case, the examination must therefore be worthless. Any one who has watched the enormous growth of this city within recent years, and who is acquainted with the enormous increase in population and wealth, and the resulting complication of the problem of civic administration, must appreciate that it can only be after years of persistent effort that any appreciable effect will be obtainable.

Owing to the efforts of numerous interested in-

dividuals and organizations, but particularly to the German Society for Combating Venereal Diseases, the regulations have been somewhat modified, in recent years, to permit some of the women under control to substitute the supervision of, and receive treatment from some one of the volunteer specialists (whose names are found upon the list which accompanies the booklet issued to women when they are brought to police headquarters the first time for examination), for the examinations by the police physicians, and the treatment at the city hospital. It was hoped, by the supporters of this proposition, that a number of women under control might be permitted to substitute this form of examination for the police control, and I was under the impression that that would be the case; but I found upon inquiry that this form of substitution is permitted by the police only in the case of women who are not actually inscribed upon the police lists, or such inscribed women in whose cases conditions are such that the police feel that it is safely permissible. In the main, then, police control of prostitutes is the same as at the time of my previous publications, with the one notable exception already mentioned, that careful microscopical examinations are made at regular intervals of every inscribed prostitute. What effect upon the total of venereal disease in the city these measures will have it is impossible to say, since owing to the fact that Berlin, which has of recent years grown tremendously in size and become in every sense of the word a metropolis, is much sought by strangers and by transient travelers, who will obviously bring into the city infections from without. Thus, the supply of venereal disease will be constantly renewed, and therefore it will be an impossibility to stamp it out entirely among the prostitutes, who represent, as is well known, only a small part of the women who indulge in illicit intercourse; but it is a fact at the present day that as a result of the more rigid and more complete scientific methods of examination now in use in that city, the infected prostitute is quickly detected, and is quickly segregated in the city hospital and treated until pronounced cured.

Just how effective or how complete the methods of treatment are it is impossible for me to say, but even should a woman be dismissed from the city hospital before the cure is complete, she is just as quickly again detected and returned to the hospital. I feel confident, therefore, that the adoption of modern scientific methods of examination will unquestionably result in cutting down the amount of venereal disease among those prostitutes who are under police control, and, as a result, there will, in the course of time, be an appreciable diminution in the amount of venereal infections traceable to them. The great pity is that under existing laws, not all men and women who habitually indulge in illicit intercourse can be compelled to submit themselves to regular examinations and treatment.

DRESDEN.

In my previous communication I quoted the methods in vogue in Dresden as the best which I had so far encountered, and as a result of my recent visit I can find no reason to change that opinion. I was much gratified to learn that my com-

munication, which had been brought to the attention of the police authorities of the cities mentioned therein, had resulted in the case of Berlin in decided improvements in the personnel of the examiners, and in the introduction of microscopical examinations at frequent and regular intervals, and in the case of Dresden had been instrumental in a further improvement in the accommodations at police headquarters, for the medical officials of the morals police, and for the women under control.

The quarters of this division now leave little to be desired in the direction of light, cleanliness, and proper ventilation; and where formerly a few dressing compartments were to be found, there are now sixteen divided, clean, and well lighted compartments in which the women undress when the complete bodily examination is to take place.

There are at present in Dresden about three hundred women under police control. These women must present themselves for examination every week, at which time the urethra, vagina, orifices of the Bartholinian glands, mouth, throat, and hands are examined for evidences of venereal disease.

Each woman is required to provide her own tongue depressor. All specula and other instruments are sterilized by boiling.

At least once in every two weeks, specimens must be taken from the urethra, Bartholinian gland orifices (should these show any evidences of disease), and the cervix, and microscopically examined.

Should there be found, at any other time, any evidences which seem suspicious to the physician, then a microscopical examination must be made outside of the regularly specified times. Once every two weeks the women must strip completely, and are then examined for further evidences of syphilis or other contagious skin diseases.

Since about six months prior to my visit, the police physicians have been permitted to treat prostitutes under control as private patients when these so desire, provided that their condition would permit of ambulant treatment.

Doctor Winkler, senior police physician, informed me that they seldom find now a fresh case of infection with syphilis, and that upon an average they had about six inscribed prostitutes under hospital care—in other words, they have succeeded now, as a result of their careful and scientific methods of examination and treatment, in cutting down the proportion of venereally diseased among inscribed prostitutes to about two per cent. He also informed me that almost all the inscribed prostitutes are, in addition to the police control, under care and treatment of private physicians, and that they have learned to go to these private physicians prior to the date set for the police examination, and if they are declared to be diseased, they then leave Dresden.

A point which particularly impressed me about the women under control in this city, was the great cleanliness which they observed about their clothing and persons.

Brothels are not authorized. Some exist, however, in the poorer streets, which, although known to the police to exist, are tacitly overlooked so long as no disturbance is created and their inmates conform to the police regulations.

A female police assistant (a sort of trained nurse, or deaconess) was appointed in this city some time ago, whose duty it is to attempt to reclaim "fallen women." I was informed by a competent authoritative source that she contends that she has favorably influenced or saved fifty per cent. of the women. Her claim, however, is very strongly disputed, and I was informed that her usual procedure is to speak with the women and to try to show them the error of their ways, to attempt to lead them away from their downward path, and to present them with five marks apiece—and that the usual result is for the women to accept the money and to spend it for liquor, and subsequently to be rearrested for prostitution. Therefore, who is to judge of what constitutes "saved"?

The woodenheadedness which still governs officialdom, in even so enlightened a country as Germany, was clearly evinced some time ago, when an experienced and competent investigator attempted to gather accurate statistics concerning the prevalence of venereal diseases in Germany, with a particular desire of getting some idea concerning the effectiveness of the control of prostitutes. To this end, the investigator in question sent requests for statistics covering the five immediately preceding years, to all the cities of Germany of over 100,000 inhabitants, and to all university and garrison cities. All responded to this request, with the exception of five or six, and the material was in the course of preparation for publication when an order came from the minister of the interior to return all data to their sources and not to publish the information which had been obtained.

(To be continued.)

SKIN DISEASES IN RELATION TO THE NERVOUS SYSTEM.*

By S. POLLITZER, M. D.,
New York.

Professor of Dermatology, Post-Graduate Medical School
and Hospital.

The skin is an organ of such great complexity of structure and function that it needs no elaborate demonstration to show that the nervous system, in one way or another, is involved in the lesions underlying most dermatoses. The pain, burning, itching, etc., that are common concomitants of many skin diseases indicate an effect produced on the peripheral nerves. It is not, however, with this aspect of the question that we are here concerned, but rather with the effects produced on the cutaneous apparatus, directly or indirectly, by disorders of the nervous system.

The effects of nervous diseases are manifested through the sensory nerves and those of the sympathetic system, especially the vasomotor nerves. In addition there are trophic disturbances of the skin in consequence of central nerve disease of which the exact mode of occurrence is still undetermined; the clinicians, as a rule, assuming the

existence of special trophic nerves, the physiologists explaining these trophic lesions as of vascular or neurovascular origin. In experiments on animals the so called trophic lesions do not occur, if the limb whose nerve supply is cut off is protected from external injury.

Our subject may be divided into three groups: 1. Skin diseases whose connection with the nervous system is established by their constant association with definite lesions of the central nervous system. 2. Skin diseases which occur in connection with the great organic diseases of the central nervous system. 3. Skin diseases which occur in connection with the so called vasomotor trophic neuroses, and those in which the connection with the nervous system is purely hypothetical.

It will add to the understanding of our subject if I say at once that there is only a single disease of the skin in which there is constantly present a definite anatomical lesion of the central nervous system, viz., herpes zoster. We are indebted to Head and Campbell for our great progress in the knowledge of the pathology of this disease. While it has been vaguely known for more than half a century that zoster is sometimes associated with a lesion of the sensory ganglia of the posterior spinal roots, it remained for Head and Campbell to show in a series of twenty-six autopsies that zoster always implies a lesion of the spinal ganglion of the nerve of the affected area, that this lesion is a hemorrhagic inflammation with destruction of ganglion cells and nerve fibres, and, furthermore, that the cutaneous lesion does not correspond to the region supplied by the ganglion cells, but rather to a definite spinal cord segment. But with this anatomical basis the pathology of zoster is by no means cleared up. We know as little as before of the processes by which the central lesion produces the effect on the skin. As to the cause of the hemorrhage in the ganglion, there is evidence that a variety of toxic conditions may be the etiological factors. The disease often occurs in veritable epidemics, accompanied by fever, and it is possible that there is a special zosterogenetic toxine which has a special affinity for definite segments of the cord, analogous to the selective action of the diphtheritic and the poliomyelitic toxins for their respective special portions of the nervous system.

In addition to the cases of the so called idiopathic zoster, the disease occurs symptomatically in a variety of conditions in connection with destructive lesions of the central nervous system like tabes, hemiplegia, chronic spinal meningitis, etc.; and in many infectious diseases, pneumonia, tuberculosis, syphilis, etc.; in disorders of metabolism, diabetes, gout, etc.; and in many toxemias, uremia, eclampsia, arsenic, carbon monoxide poisoning, etc.; all of them conditions in which we have various toxic agents circulating in the blood.

As to the dermatoses of the great organic diseases of the central nervous system, we must bear in mind that these nervous diseases are always of great chronicity and it is possible for a great many things to happen to the patient during the long years of his illness that have no relation to the lesions in the brain or cord. In paresis many cutaneous disorders have been observed; the most interesting of these

*Read at the New York Academy of Medicine, March 21, 1902, as part of a symposium on diseases of the skin in relation to internal disorders.

is the occasional occurrence of bullous eruptions like pemphigus, a circumstance which has been utilized in favor of the theory of the central origin of pemphigus. In the first place, pemphigoid eruptions occur in only a small proportion of the cases of paresis, and, second, the few scattered lesions in the skin do not in any way correspond to an anatomical basis in the distribution of the nerves.

In organic diseases of the cord cutaneous disorders are somewhat more frequent. In tabes and in syringomyelia we have a variety of lesions that occur in connection with paralytic conditions, and in most cases it is this element of sensory paralysis that accounts for the cutaneous lesion. In perforating ulcer of the foot we have a disease that occurs in tabes, as well as in other diseases, and it seems likely that anesthesia, pressure, and local bacterial infection are sufficient to account for the ulcer, without invoking the aid of hypothetical trophic nerves. The same explanation applies to the bed sores, which are of such frequent occurrence in the paralyzed. In syringomyelia the occurrence of painless ulcerations of the fingers and of painless paronychia, is one of the most frequent and most characteristic symptoms of the disease, but the cutaneous lesions depend on the central lesion in the cord only in so far as the anesthesia increases the liability to local traumata of which the patient is unconscious. In short, there is no lesion of the skin which constantly accompanies the organic diseases of the central nervous system, and none which can be explained as depending directly on the central lesion.

The skin diseases of the vasomotor trophic neurones constitute a group of great clinical and pathological interest. The condition known as erythromelalgia is not a disease, but rather a symptom complex on the basis of organic or functional disorders of the central nervous system or of the peripheral nerves. It occurs most frequently in company with syringomyelia, multiple sclerosis, meningitis, cerebral hemorrhage, and peripheral neuritis. In one case in which there were also symptoms of Raynaud's disease the post mortem examination disclosed extensive atrophy of the gray matter of the cervical and dorsal cord, involving the intermediolateral tract and the basal cells of the posterior horns. In other cases no lesions of the central nervous system could be found. In still others the sole changes were severe arteriosclerosis of the vessels and thickening of the nerves of the affected limb.

As to erythromelalgia, a disease which bears some slight resemblance to erythromelalgia, while vasomotor disturbances play an important rôle in the disease, there is no evidence at all of involvement of the central nervous system, and the present tendency is to look upon erythromelalgia as a preliminary stage of acrodermatitis atrophicans, the so called idiopathic atrophy of the skin, a disease probably of the bloodvessels. In Raynaud's disease the anatomical findings are so few and so contradictory that they help us but little to an understanding of the nature of the disease. The probabilities seem in favor of the view that Raynaud's disease too is an affection of the vascular rather than of the nervous system.

The question of the nervous origin of various inflammatory dermatoses has greatly occupied the dermatologists during the past decade. Kreibich, in his extensive publications on the subject, came to the conclusion that, not only urticaria and angioneurotic edema, but also eczema, psoriasis, lichen planus, and many other inflammatory dermatoses are due to vasomotor disturbances of reflex origin, derived from a stimulus applied to any portion of the afferent tracks, central or peripheral. Philippson, Török, and Rona have taken a diametrically opposite view. They deny the possibility of a reflex angioneurotic inflammation, and base their opposition on a series of exact physiological and pathological animal experiments. The weight of evidence is decidedly on the side of the hemato-genous origin of the angioneurotic dermatoses.

The rôle of the vasomotor nerves in the production of skin disease is nevertheless one of great importance. The effects of long continued hyperemia are manifested in a diminished resistance of the affected area, and skin diseases may develop secondarily as from a *locus minoris resistentiae*. It is through the vasomotor nerves that the emotions may enter into the causation of skin diseases. Pigmentary and trophic changes in the nails and the hairs are often cited as examples of the influence of emotional disturbances on the cutaneous apparatus. It must be said, however, that a recent critical sifting of the evidence in these cases seems to throw some doubt on the reality of the occurrence of these remarkable changes that popularly are supposed to take place, sometimes in a few hours. The rôle of severe emotional storms, like fright, shock, etc., in the production of various inflammatory dermatoses, such as eczema, psoriasis, and lichen planus, commonly cited in the textbooks, can in the nature of these dermatoses be, at most, extremely indirect. An erythema may be of central origin, and it is possible that a transitory disturbance of this kind may occasionally, as it were by accident, afford an opportunity for the development, or the lighting up of the dermatosis in question. This accidental relation must necessarily be of rare occurrence, and as a matter of fact we do not find a history of an emotional shock in one case out of a thousand.

In hysteria we usually have a variety of sensory disturbances in the skin, anesthesia and analgesia being common among the hysterical stigmata. Bullæ and ulcerations sometimes occur in the hysterical, and many dermatologists and neurologists believe these lesions to be trophic disturbances of central origin. The so called zoster gangrenus hysterici or multiple trophic ulceration is an example of a dermatosis of this kind, and I need only refer to the heated controversy which has been waged over this subject to remind you that the question is not yet settled. The Nancy school of psychopathologists have been particularly active in adducing evidence that grave lesions of the skin may be produced under the influence of the mind. In practice, however, it is certain that the erythematous, bullous, and necrotic lesions of the skin, commonly met with in the hysterical, are practically always of traumatic origin, produced by the patient herself

through the agency of some caustic or of the finger nails. These cases generally bear the earmarks of artificers and seldom deceive the initiated.

There are left a number of dermatoses for which a connection with the central nervous system has been assumed on grounds wholly insufficient, a hypothetical connection which may be regarded as derived from tradition and lacking every foundation in physiology or pathological anatomy. I shall not waste your time with a discussion of the possible nerve origin of scleroderma, lichen neuroticus, etc. That a cutaneous lesion has a linear distribution on the thigh approximately parallel to the sciatic nerve is no longer regarded as sufficient reason for placing it among the dermatoses of nervous origin. With the advance of our knowledge the number of dermatoses to which a nervous origin may be ascribed has constantly grown less, and to-day we regard external infections and internal toxicemic conditions as the principal factors in the causation of skin diseases.

In the second portion of my discourse this evening, the dermatoses associated with the sexual apparatus we shall see that toxic conditions of the blood are probably the dominant factor.

50 EAST SIXTIETH STREET.

THE NEWER TEACHINGS OF THE DISEASES OF THE ALIMENTARY CANAL.*

By MARK I. KNAFF, M. D.

New York

II.

THE FUNCTION OF THE ALIMENTARY CANAL

The function of the alimentary canal is to provide the tissues of the body with the necessary nutriment. This is derived chiefly from the vegetable and animal kingdoms. The several organs of the body supply the necessary means by which the food products are broken up, and so dissolved that such food can be assimilated. The process of dissolving the food is called digestion. The process of digestion consists essentially in carrying the steps which Nature employed in building up the food products from the elements. The starches are digested by the diastatic ferment secreted by the salivary glands and by the amyllopsin of the pancreatic juice. The albumins are digested, partly by the gastric juice, and finally by the trypsin of the pancreatic juice. The fats are digested by the steapsin of the pancreatic juice. The bile and the enteric juice, according to Pavloff merely assist and augment the activity of the pancreatic juice. Pavloff has proved that, while the bile has some little diastatic ability, it mainly acts and very much enhances the emulsifying of fats by the steapsin. And the enteric juice, according to the same authority, aids all the normal functions of the pancreatic juice. However, our knowledge of the digestive processes and their exact anatomy is by no means exhausted; a great deal is yet to be discovered.

Of the salivary glands the parotids secrete a serous fluid which contains the ptyalin; the sub-

lingual glands secrete the mucin, and the submaxillary glands secrete both mucin and ptyalin. The combined salivary secretion is slightly alkaline, is opalescent, tasteless, and odorless. During mastication the food becomes incorporated with the saliva, the saliva serving here as a solvent of some food and, as the bolus becomes insalivated, facilitates its passage into and through the esophagus. Of chief importance in the saliva is the ptyalin, which is a hydrolytic enzyme, and converts starches into sugar. The intermediary products between the starch and the sugar during the process of saccharification are erythrodextrin and achroodextrin; the maltose and the dextrose being the last stages of the saccharification. The ptyalin acts best in a slightly acid (organic) medium, but may also act in a neutral or alkaline medium. As the acid secretion in the stomach does not appear immediately, but from five to ten minutes after food has been introduced into it, the ptyalin has an opportunity to act on the starches, until the free hydrochloric acid appears in sufficient quantity to destroy the diastatic action of the ptyalin. I shall later on give my experiments which have proved conclusively, that during the diastatic digestion carbon dioxide is liberated, so that this gas appears in the stomach prior to the appearance of the acid. Should the pouring out of the acid be delayed, or be in insufficient quantity, then the diastatic digestion will be favored. The ptyalin is either destroyed by the acid or digested by the pepsin. It is now generally accepted that the glands do not secrete mucin or ptyalin, but the mucinogen and the zymogen of the ptyalin, and that the mucin and the ptyalin form in the oral cavity.

Concerning the esophagus little else is known than that it simply serves the purpose of affording a communication between the mouth and stomach. The peristalsis of the esophagus does not seem to be of very much importance, as food and drink, normally, will gravitate.

The gastric juice of the stomach consists of all the secretions, which are, mucus, hydrochloric acid, pepsin, and rennet chymosin. It is contended that the mucus is secreted by the glands in the pyloric region. Certain it is that we must concur with this view after a wide experience in chyme analysis. Besides these, the stomach is also thought to secrete a fat splitting ferment. However, this latter assertion requires further study. Bickel (*Deutsche medicinische Wochenschrift*; August 16, 1906) inclines to the belief that the stomach juice does split up fat, and cites, as confirming his views, the experiments of Sommerfeld and Heinsheimer. My own observation also leads me to the belief that the stomach juice does split up fats; I have repeatedly observed the evidence of this under the microscope. But, as I have not used any other corroborative means, I would not stand on that proposition. Neither the hydrochloric acid nor the pepsin nor the rennet is found as such in the glands; all are formed upon the surface of the mucous membrane. In the glands we find only the zymogens of the pepsin and of the rennet, while as to the origin of the free hydrochloric acid there existed, until lately, no satisfactory explanation. The explanation given by Koeppel appeals very strongly as being the proper one. Koeppel is cited by Hamburger (II. J. Ham-

burger, *Osmotischer Druck und Ionenlehre*, 2. p. 434, 1904, as follows:

In accordance with the teaching of the electro-lytic solution theory are present in a decidedly pronounced manner in gastric juice, those molecules of HCl, free and combined. It is now demonstrated that the wall of the stomach is permeable in both directions to the electrolytic ions, salt molecules and also to the H ions, but that it is almost impermeable to the Cl ions. But the H ions cannot leave the stomach contents unless an electric force is present, or another substance can take their place. Such a substance is the H ion which exists in the blood and can also permeate the stomach wall. Thus H ions enter in enormous numbers the stomach wall, combine with the Cl ion in the lumen of the gland, and

Hamburger then gives the results of the researches of Pavlov who confirms the presence and formation in the blood of free H ions, which ions come from the carbonates and phosphates in the blood. We read here also the explanation of why the blood becomes more alkaline after the HCl secretion in the stomach. It is explained that in place of the H ion, which leaves the blood to combine with the Cl ion in the stomach, Na ions from the stomach contents permeate into the blood and here form the sodium carbonate— Na_2CO_3 —where before there was only NaHCO_3 ; the result is the greater alkalinity of the blood. This theory is very beautiful and seems to apply quite well. However, we must still look for the reason why there is formed free HCl in the lesser stomach, artificially made by Pavloff in his experiments; we find it put into this lesser stomach. We think we are sure and that is that the HCl is now formed in the glands. It has been established that the reaction of the mucous membrane which apposes the muscularis always is alkaline, and that therefore the free HCl forms upon the surface of the mucous membrane through the chemical interchange of the requisite elements of the several secretions poured out from the glands.

What starts the digestive secretions? The experiments of Pavloff and of the numerous observers after him have definitely proved that the gastric juice does not appear immediately upon the excitation of the exciting cause, but that usually from five to ten minutes elapse after such an excitation. It takes from five to ten minutes, after feeding, for the gastric juice to come out on the surface; this is an established fact and is not a product of reasoning; it therefore cannot be disputed. But the subject of dispute is the explanation which Pavloff and his admiring followers give us to what causes the gastric juice to pour out. Says Pavloff (*Die Arbeit der Verdauungsdrüsen*, p. 81, 1903): "The vagus proved itself to be the unmistakable initiator of the glands of the stomach" . . . (at page 99) "last time we got acquainted with the first normal impulse (*Stimulus*), which during the natural course of events puts into action the innervation apparatus of the glands of the stomach. This impulse emanates from the psyche and consists of the passionate desire for food." Through his experiments with mock feeding, Pavloff showed that the stomach of a dog, whose esophagus has been cut through, begins to secrete only after the dog had begun to be fed, even though the food never reached the stomach, but fell out from the cut esophagus. The deduction which Pavloff drew from these experiments is that the flow of gastric juice is due to the psychological influence and

he therefore put down the psychological influence as one of the most potent factors in causing the secretion of the gastric juice. In fact, there is any other cause by which the flow of the gastric juice is ignored. But an careful reading of Pavloff's work, we find that Pavloff neither has demonstrated as to the period from which follows the mock feeding, and furthermore, that Pavloff recognizes also other causes which are capable of exciting gastric secretion. The explanation for the fact of what Pavloff calls the psychological cause is thus stated at page 92: "The next most desire for food." And, in order to create that passionate desire for food Pavloff says, page 91, beginning with the last line of the previous page, that "The dog should fast from food for three days, and then, if the dog's fasting lasted only fifteen or twenty hours, the experiments would not satisfactorily. Pavloff narrows (page 92) the behavior of a dog thus prepared to show the flow of the psychological cause, and says: "Withdrawing from the fast, the dog shows but one strange, but definite and most definite, tendency to get out of his cage to run to the food which is always there, where his weak condition exists." One can hardly apply this description to fit the normal state of man in animal. Only under very exceptional and very undomestic conditions does man have to starve two or three days, and, Pavloff tells us, that a fast of merely fifteen or twenty hours does not always prove successful to demonstrate the psychical influence. As a rule we do not even put a long between meals. It is possible, however, from the fact of only one to seven hours' food, certainly not together as a sufficient demonstration for the connection with the mock feeding, since Pavloff maintains his success upon a fast of two to three days. Working along any further now, we can crystallize Pavloff's interpretation of the mock feeding to consist in: 1. There must be a dog fasting two or three days, with a passionate and almost insane, for food, a dog such as if combined, a dog shows great muscular activity in trying to get away from his confinement and thence out and stretching his old mind will, and 2. that it takes from five to ten minutes before the stomach responds to the alleged psychological influence.

We find here a fundamental lack of the proper interpretation and interpretation of facts. The experimental facts, the dog's fasting and stretching and thus the gastric secretion is delayed for five to ten minutes, seem to be a different interpretation of the cause of the appearance of the gastric juice. This is that the dog who has been fasted to an insupportable degree of discomfort, for three days, then put and stretches in his violently eager desire to get to the food which tempts him. This stretching and stretching out shows that during a prolonged deprivation of the abdominal contents the food has been increasing the innervation apparatus. This again means an increased excitated nervous system as the abdominal contents are so close to the stomach, thus the stomach is overexcited from without. This to first innervation of the stomach is not the cause but the effect, rhythmic with the excitations such innervation increasing the secreted food response and such response increasing the secreted

abdominal tension. It is this alternate action lasting for several minutes, of an already high tension which reacts upon the stomach and causes the secretion. Pavloff concludes that the gastric secretion in mock feeding is due to the impulses upon the vagus and says (page 66) "in the act of normal eating the gastric glands receive their impulses from such nerve strands as run with the vagus." Notwithstanding this assertion Pavloff says further (page 71) "many authors before us, and also we ourselves have convinced ourselves that the stomach may produce its specific secretion also without the vagi." As these two statements are not in accord, it is hard to guess which of the two is correct. Again, Pavloff says (page 121) "notwithstanding its prominence, the psychical excitation is not the only cause of the secretion of the gastric juice." Pavloff again (page 123) tells us that the vagi are necessary as he says: "we note, by the way, that the absence of the vagi *which are necessary to the transmission of the psychical influence*," Pavloff tells us (pp. 123-126) that water introduced directly into the stomach of a dog whose vagi were cut and that meat broth and solutions of beef extract, which were often introduced into the stomach of the sleeping dog were followed by a very energetic flow of gastric juice. There was no psychical element here possible, even according to Pavloff. There is a certain sense of anxiety experienced when we read of such chaotic conceptions. We certainly must conclude that Pavloff's explanation concerning the gastric secretion in mock feeding is contradicted by himself. We surely cannot be convinced of the tenability of an explanation which does not explain. That a psychical influence is necessary to initiate gastric secretion, Pavloff himself disproves by his experiments upon dogs with cut vagi and by introducing food directly into the stomachs of dogs who were asleep. Also, the conditions precedent successfully to demonstrate the gastric juice in mock feeding are altogether too violent and not entirely free from the taint of misconception. The proper explanation seems to be, that the immediate cause of the gastric secretion is a contraction of the muscular coat of the stomach, and that this contraction may be induced by several agencies, notably chemical; that it is immaterial whether the chemical agencies are of a solid, liquid, or gaseous nature and that *the contraction of the gastric muscle may also be produced by the increased intraabdominal pressure aided by inspiration*.

The effect of increased intraabdominal pressure is well known; we know its effect upon the bowels, when straining at stool. What happens here is that the violent voluntary contractions of the abdominal muscles increase the pressure within the abdomen and this, in turn, compresses the bowels equilaterally. In this way a contraction of the muscularis of the bowel is compelled from without the bowel. This explanation agrees with the fact, as we have no voluntary control over the involuntary muscle fibres of the intestine. A like effect is produced upon the stomach by the intraabdominal pressure. We can also note the stimulating effect of inspiration upon the gastric contraction in the lavage of a stomach which is already used to such manipula-

tions. After the fluid, which has been poured into the stomach, is permitted to run out again, we note that every inspiration produces a larger and more forceful stream, whilst such stream is markedly lessened during expiration. The mucous coat being adherent to the muscular coat, a contraction of the latter must of necessity cause a contraction also of the mucosa and a contraction of this squeezes the glandular contents upon the gastric surface. There is no question that, when such glandular secretions meet upon the surface of the stomach, the usual chemical interactions take place and these again react upon the mucosa, effecting further secretions. The pouring out of the gastric juice is caused by the ingesta. Upon their irritability depends the response of the gastric glands and of the muscularis.

We have the authority of Pavloff and his students, that it takes several minutes after the ingestion of food, before gastric juice is secreted. Normally, the starches have opportunity now to undergo saccharification during which process CO_2 is developed. Both, the formed dextrins and the free CO_2 are excellent stimulants of the gastric mucosa. It is unquestionable that, normally, these are the first agencies to call forth gastric secretion. In cases of a mixed meal, the soup or other fragrant dish will be the excitant. But in every case the direct stimulant is of a chemical nature. The psychical juice which conception Pavloff originated, must be looked upon as a delusion, since the author himself proved by actual experiments, that there is gastric secretion even when the vagi are cut, or when food is introduced into the stomach of a sleeping dog. The psychical juice, however, has the advantage of strongly appealing to an imaginative mind, but it fails to meet the test of applied facts; it has no existence.

The muscular coat of the stomach is destined to do the mechanical, the dynamical part, namely to grind up the food. As the food reaches the stomach, it is grasped by the walls and ground up between the surfaces. In order that the food may be ground up it is necessary that it remain within the stomach cavity for a greater or lesser time, that is, that the food should not leave the stomach, until it is ground up. The more it is ground up, the finer the chyme, the more easily will it be acted on by the gastric juice. Therefore it is necessary for the proper grinding up of the food, that it cannot escape from the gastric cavity while it is being ground between its walls. This means, that the escape of the food beyond, into the intestine, must be checked for a certain period; in other words, that the pylorus shall remain closed for some certain time. As a matter of fact, this is exactly what happens; the pylorus closes after food has been introduced into the stomach.

And now we will consider the mechanism, by which the pylorus closes and opens. A proper understanding of this is most essential, as it will lead to the understanding of the diseases, hereafter to be discussed. The textbooks on physiology attempt to explain the opening and closing of the pylorus upon the assumption of the existence of special nerve ganglia in the pylorus. Such ganglia have never been demonstrated. The true explanation is that

every contraction is followed, of necessity, by a relaxation. In this phenomenon of the alternating of contraction with relaxation, only the stage of contraction represents the active process, while the relaxation follows as a matter of course. Therefore, in this phenomenon we must look only for the cause which actuates the contraction. Finding this, we can explain the cause of the contraction of the muscle fibres. The ordinary and usual agency of causing contraction of the muscularis of the stomach is the irritation of the mucosa by the food and drink introduced into the stomach. The irritation of the mucosa varies with the kind of food. As the food and drink are introduced into the stomach, they, in their descent, follow the laws of gravity and reach the lowermost portion of the stomach, which, in the normal stomach, is the pyloric region. Therefore, this part will be the first to respond to the irritation: the muscle fibres of this part will be the first to contract. Now, the contraction, once begun, will spread to the remaining portion of the stomach. These successive muscular contractions we call peristalsis. In contradistinction to the contraction, *en masse*, of an entire voluntary muscle, the contraction of the involuntary muscle fibres of the alimentary canal does not take place *en masse*. Gradually and successively the succeeding muscle fibres contract. And, while some muscle fibres contract, others, which had already contracted, begin to relax. The now relaxed fibres again contract under the irritation, which is still present in the stomach, and the process of contraction and relaxation is repeated so long as there is an irritation.

In order to understand now, why the pylorus closes we must bear in mind the relative diameters of the stomach and of the pylorus. Assuming now that there is an irritation in the stomach which will cause such a contraction of the muscle fibres, the diameter of the stomach will thereby be shortened a quarter of an inch at each end. Such a contraction will still leave a considerable cavity in the stomach. The same degree of contraction is sought to be reached also by the muscle fibres which constitute the pylorus. But as the lumen of the pylorus is much less than half an inch, the irritation, which produces only a half inch contraction of the stomach will be ample absolutely to close the pylorus. The closure of the pylorus represents nothing else than the ordinary contraction (due to the peristalsis) save that the peristaltic contraction here is upon a very much smaller lumen. The relaxation of the muscle fibres after the contraction opens the pylorus, and we must not use the phrase that "the pylorus opens" but that "the pylorus relaxes"; in order to effect the relaxation no active process is necessary, and the word "opens" does suggest an active process. Inspiration augments and accelerates peristaltic contraction.

The secretions of the intestines have already been mentioned at the beginning of this chapter. The intestinal peristalsis proceeds in the same way as in the stomach. There is first an irritation of the mucous membrane which, in turn, causes the contraction of the muscular coat. The peristalsis of the small intestine differs from that of the large intestine. The peristalsis of the small intestine,

once begun, continues until the wave reaches the natural boundary, the ileocecal valve. Here, apparently, the peristalsis halts and rests for some time. Respiration and gravity play important parts in the peristalsis of the small intestine; gravity obstructs, impedes, and prevents a too rapid emptying of the intestinal contents from one section into the other. This arrangement is obviously necessary, as thereby the intestinal contents are subjected to more thorough digestion by the several juices within the intestine.

The propulsion of the fecal matter in the colon is quite different from that of the small intestine. Normally, the fecal matter of the colon is grasped by the colon and expelled in a large column. Holzknecht (*Münchener medizinische Wochenschrift*, November 23, 1909) speaks of the colon peristalsis as follows: "The colon rests all the time; its peristalsis lasts only a few seconds during the twenty-four hours. The propulsion is a violent act, about one third of the fecal mass of the entire colon being propelled into the next portion. Before the propulsion takes place the haustra disappear. We must not speak of a retarded colon peristalsis, we must speak of a rarer, or weaker, or ineffectual, or incomplete peristalsis."

SYPHILIS AND GONORRHEA AS DEPICTED IN THE "SONGES DROLATIQUES DE PANTAGRUEL." *

BY CHARLES GREENE CUMSTON, M. D.,
Boston.

Member of the Societies of Medical History of France and Germany, etc.

It is far from my intention to enter upon the discussion as to whether or not the *Songes drolatiques de Pantagruel* is from the pen of the great



FIG. 1.—Represents a soldier.

FIG. 2.—Shows the sufferings of a syphilitic.

philosopher and physician, Rabelais, but I may say that I am inclined to believe that he is the author of at least some of the drawings, and this for two reasons among several others. It is well known that Rabelais was facile with the pencil, and then again several of the figures bear the letters A and N, these being the initials of his pseudonym, Alcofibras Nasier, the anagram of François Rabe-

*Read before the New England Urological Society, March 5, 1912.

lais. I am also of the opinion that these figures should be studied from the viewpoint of a rebus, which each undoubtedly represents, but my reasons for assuming this idea would be too long to explain this evening. Suffice it to say that I have called attention to this point.

From the one hundred and twenty figures, without any explanatory text, composing this work, which has become of very extreme rarity, I have



FIG. 3.—Shows a syphilitic suffering also from stricture.



FIG. 4.—Depicts a prelate of the church suffering from gonorrhea.

selected five,¹ which cannot be devoid of interest to the urologist.

Fig. 1 (Fig. 3 in the original) represents a soldier apparently on the march and at the same time passing a sound into his urethra. It has been supposed that this figure represents Francis I, who, it is well known, suffered from both stricture and syphilis.

Fig. 2 (Fig. 51 in the original) shows the sufferings of a syphilitic. He is holding his right leg, evidently on account of osteocopic pains which are tormenting him, while under his chin is seen the receptacle used in those days to collect the saliva as it ran from the mouth of the patient, the result of severe mercurial salivation. This is also supposed to be Francis I, on account of its likeness to the king.



FIG. 5.—Depicts a priest afflicted with gonorrhea.

Fig. 3 (Fig. 53 in the original) likewise depicts a syphilitic who, unfortunately, also is the possessor of a urethral stricture, as is made evident by his passing a sound. This may also represent Francis I, although from the physiognomy I hardly believe this likely.

Fig. 4 (Fig. 60 in the original) represents a prelate of the church in the throes of a gonorrhea. His expression is that of a man in severe pain, while the pins implanted in the terminal portion of the phallus indicate the violent stinging during micturition. Who this prelate may be I am unable to

infer, unless it is intended for Pope Julius II on account of the long beard. The bird and other details are a rebus, not unlikely of a masonic nature.

Fig. 5 (Fig. 99 in the original) depicts a priest afflicted with a gonorrhea, and who for his folly is undergoing self flagellation.

Much more could be said of interest relative to many other figures from the viewpoint of medicine, but I merely intended to refer to this group of five figures, as they pertain strictly to genitourinary pathology. Unquestionably, Rabelais had a large experience in syphilis and gonorrhea from the fact that he twice held appointment as physician to two large hospitals, at Lyons and at Metz.

There is one more point which may be taken into consideration. In Book II, Panurge says, when relating the various means to which he has resorted to make money, that Pope Sextus IV assigned him fifteen hundred pounds income for having cured him (the Pope) of a disease which the ecclesiastical monarch did not dare admit, and historically it is known that Sextus was of very irregular habits in private life. Possibly Fig. 4 may relate to him, but I offer this suggestion merely for what it is worth.

871 BEACON STREET.

SOME DIAGNOSTIC AIDS IN GASTRIC DISEASES.*

BY EDWARD A. ARONSON, M. D.,
New York,

Associate Attending Physician, Mount Sinai Hospital; Chief of Clinic, Internal Medicine, Mount Sinai Hospital Dispensary.

The purpose of this paper is not to describe the methods employed in the diagnosis of diseases of the stomach, but rather to give a résumé of, and perhaps criticise some of the more frequently used methods as applied both by the specialist and the general practitioner.

The diagnosis of any disease of the stomach depends upon an understanding and correct interpretation under pathological conditions, of its normal anatomy, its physiological and chemical activities, its muscular movements, and its form, size, and position. All tests and examinations are grounded on these basic facts and on the anatomy and physiology of all other organs anatomically or physiologically related to the stomach.

The rise of modern chemistry has made the study of the physiology of digestion possible. To-day, the finer methods of chemical analysis, more intricate tests founded on physiological knowledge of the stomach, the pancreas, intestine, and liver, the x ray, and practical and experimental surgery are furthering the diagnosis of lesions of the stomach and allied structures.

In the whole field of the practice of medicine, diseases of the digestive tract, perhaps more than any other, require more attention to be directed to the general history of the patient, for considerable weight must be placed on the subjective symptoms before making a conclusive diagnosis.

Within recent years much time and study have been applied to devising methods in both the chemi-

¹These have been copied from the Geneva edition of 1868, published by J. Gayet Fils, a copy of which rare book is in my library.

*Read at a meeting of the Metropolitan Medical Society of New York, March 26, 1912.

cal and röntgenological laboratories, to aid in our diagnoses. Along chemical lines we have the use of test meals to determine the motility of the stomach, the condition of the gastric secretion, the presence of ferments both in the stomach and even in the urine, the presence of occult blood, etc. to help us. Röntgenology lends itself as a most important diagnostic aid and, although still in its infancy, its universal application now being made in all quarters of the world, to the study of gastric and intestinal conditions, bids fair in time to be of the utmost help.

In concluding these introductory remarks, I ask your indulgence in what follows, for to many of you there may be nothing new, but I hope all will find some matters of interest.

The so called physical methods of diagnosis include inspection, palpation, percussion, auscultation, gastroduaphany, gastroscopy, and the use of the x rays.

In inspection we include the general condition of the patient, color of the skin and the visible mucous membranes, the appearance of the mouth, pharynx, and abdomen.

Palpation we employ to determine the presence of pain or tenderness; to define the normal stomach borders, or to ascertain the presence of an abnormal resistance, or of tumors and their characteristics. In palpating for pain, the so called Head zones of hyperesthesia in diseases of the stomach have been accepted by many with enthusiasm.

Of late, many observers have laid considerable importance on what has been described by Mathieu and others as the *epigastrischer Druckpunkt*. This is elicited by pressure at a point on a line joining the ends of both ninth costal cartilages, a little to the right of the median line. This point also denotes the location of the celiac plexus which many, as Brien, Kelling, Mathieu, and Roux, have decided to be the site of gastralgia, so called. The importance of this *Schmerzpunkt* lies in its aid to differential diagnosis. It does not change its location with the change in position of the stomach of the patient and thereby helps to exclude tenderness if due to some lesion of the stomach itself.

Percussion with a hammer has been exploited by Mendel as an aid to the diagnosis of gastric ulcer. He employs a hammer for several short light strokes on the epigastrium. In the case of an ulcer, there is one point struck which elicits a more intense tenderness than at any other place and at this point the pain lasts for some time.

Besides the *Schmerzpunkt* mentioned above, we have other pressure points used in diagnosis. There is one at the umbilicus corresponding to the superior mesenteric plexus, at the level of the twelfth dorsal vertebra. Above the umbilicus we have that corresponding to the aortic plexus. In the left iliac fossa, the inferior mesenteric plexus, and in the right iliac fossa, the ileocolic plexus. All these "points" must be considered when tenderness is elicited at any one point, because very frequently of the connection between them, when pressure is made over one, pain is felt over another. If, for example, the stomach and its contents were more frequently examined in cases of so called chronic appendicitis, stomach lesions would be found and less often would normal appendices be removed.

Boas called attention to dorsal pressure points. If tenderness to pressure is elicited to the left of the spine at the twelfth dorsal vertebra, it speaks for ulcer. In cholelithiasis, the tenderness is on the right side at the same level. In gastric neurosis, the tender points vary in the same individual from side to side.

In palpating for resistances or tumors, one cannot overestimate the value of examining the patient in a warm bath, or if necessary, under anesthesia.

I should like to call attention here to the expiratory fixation of gastric tumors as a means of differentiating them from tumors of the liver or gallbladder. During expiration, a tumor of the stomach can very frequently be held down, whereas this is impossible in the case of a liver or gallbladder growth. If such a gastric tumor is bound to the liver or gallbladder by adhesions, obviously this fixation fails us.

Boas pays considerable attention to the palpation of an erection of the fundus in a full stomach, as a means of diagnosing an organic pyloric stenosis. Palpating the greater curvature by means of a tube in the stomach can now be discarded owing to the existence of much more satisfactory methods for this purpose.

Percussion of the stomach is used to determine its size, its borders, and its position, and is satisfactory only when it is filled with air or fluid. This diagnostic aid is very unreliable in determining the outlines of the stomach, for many factors, e. g., change of position of the patient, prevent a satisfactory conclusion. Auscultatory percussion has no especial advantage.

Auscultation is employed to elicit the presence of various stomach sounds which are more or less dependent upon an increased gastric peristalsis and influenced by the presence of food or air in the stomach. Auscultation is used to determine the deglutition sounds. The first is heard in the epigastrium immediately after swallowing fluid, the *Durchspritzgeräusch*, and the second, a few seconds later, called by Meltzer, the *Durchpressgeräusch*. The occurrence of the second sound is somewhat delayed if the patient is in the dorsal position. Sounds are also heard over the pylorus in connection with its contractions.

Succession is the result of the presence of air and fluid within a hollow viscus. This can occasionally be observed by the patient himself through contraction of the diaphragm or the abdominal muscles, or by the examiner tapping the abdomen over the stomach. Its presence is noted in normal conditions and cannot in itself be accepted as it formerly was, to be pathological. In many instances it may be employed to determine the location and size of the stomach. It may be considered pathological if observed twelve hours after an evening meal, three hours after a test breakfast, or seven hours after a test dinner. In such a case it may denote an impaired motility of the stomach or a hypersecretion.

More recently, Fuld has published a method for the determination of the presence of free hydrochloric acid without the introduction of a stomach tube. It consists in giving a patient a solution of soda an hour after the ingestion of a test meal and then auscultating the stomach by means of a stetho-

scope, the patient being in the dorsal position. In the presence of free hydrochloric acid, Fuld hears the evolution of the carbon dioxide. The intensity of the sounds is in direct proportion to the amount of free hydrochloric acid present. This method can hardly be considered reliable because the presence of organic acids can produce similar results.

When the gastrodiaaphany was first introduced by Einhorn to ascertain the size, borders, position, and even changes in the stomach wall, much was expected, but with the advent of other and better methods, gastrodiaaphany has been relegated to the background.

The gastroscope is being more frequently employed, many models having been constructed. It has its disadvantages and its dangers, and its usefulness depends naturally upon the ability to see and the correct interpretation of what we see. Up to the present time I believe we can say, no one model instrument has been found to be satisfactory. The advantages so far have been outweighed by the disadvantages and many factors enter into its successful application.

The Röntgen ray examination of the stomach: In recent years we have received no greater aid in diagnosis of stomach conditions than from the x ray examination. While we may say that although this method of examination has left its infancy and is now in its childhood, we have gained considerably; with time and experience both in technique and interpretation we shall know much more. This examination should be carried out only by an expert and not by a practitioner, but its interpretation ought to be determined by both and not left entirely to the röntgenologist, who at the present time frequently attempts to make a positive diagnosis from his work alone. X ray examination gives us valuable information as to the position, size, and form of the stomach, the conditions at both its orifices, and occasionally enables us to make positive diagnoses where other methods have left us uncertain as to the real lesion. Of the technique I will not speak, but leave it entirely to the specialist.

This method of examination is not infallible in its results. It, as well as other methods, leads to mistakes in diagnosis. Its application, however, excluding the cost, is unlimited because it possesses no contraindications. It is of special value in those cases where a stomach tube is contraindicated. One should never be satisfied with but one x ray examination, fluoroscopic or skiagraphic, for the findings may vary in the same patient. There should be at least two such examinations, and naturally the conclusions from these two should agree in order to gain reliable information.

EXAMINATION OF STOMACH CONTENTS.

We will now consider the examination of the stomach contents and the value of some of the methods employed. Such examination brings directly before our eyes a consideration of the character of digestion, secretion, and motility on the part of the stomach, and furthermore, information as to the pathological condition present.

The stomach tube is required in the study of the gastric contents and one always obtains more satisfactory results when an aspirator in some form

or other is attached to the outer end of the tube. The tube should be employed both in the fasting stomach and when the organ contains some food as usually seen after the ingestion of a test meal. Many different test meals have been suggested, but those which survived and found universal application are these:

First, the Ewald-Boas test breakfast of bread and tea or water. This is the one most frequently used. After such a meal, the stomach should be empty in two hours. For the study of the motility we should wait at least this length of time.

Second, the Leube-Riegel test dinner of soup, beef, potato, and bread. This is also used to study the motility, and seven hours after such a meal lavage should be done in order to discover any food remains in the washings. The secretory functions may be studied three to four hours after taking this meal.

Third, the Boas evening test meal of bread and butter, cold meat, two cups of tea, and sugar. The stomach should be empty the following morning, i. e., after twelve hours. Strauss and others add currants, prunes, raisins, or bismuth to the Boas evening test meal.

One test meal and its findings should never be regarded as conclusive; there should be two at least. These test meals are examined macroscopically, microscopically, and chemically.

The macroscopical examination aids us in considering the appearance and amount, the odor, and the character of its contents, e. g., blood, bile, mucus, food remains, etc.

The amount is dependent upon the motility and the gastric secretion present. Mathieu and Remond suggested a method in order to determine by means of a known dilution of the gastric contents, its acidity and specific gravity, how much fluid left the stomach, and how much remained behind, all by the use of an algebraic formula. This method, however, is not to be relied upon.

In order to differentiate between an impaired motility and a hypersecretion, Strauss advised a method to ascertain the separation quotient. He allows the aspirated stomach contents to remain in a vessel for two hours, and if the proportion of supernatant fluid to the solid portion is more than fifty per cent., he assumes the presence of a hypersecretion. Needless to say this method has been found unreliable. Boas also published a method to determine a hypersecretion by giving a roll to the patient and aspirating in one hour. In a hypersecretion, we get a fairly large amount of fluid of varying degrees of acidity; in a normal stomach, but little food remains are recovered. Zweig and Calvo sought to differentiate between an alimentary hypersecretion and a continuous hypersecretion, examining the stomach both fasting and after the use of a test meal.

At the present time, a chronic hypersecretion is assumed to be indicative of the presence of an ulcer or a cicatricial pyloric stenosis or, in some cases, an early stage of a chronic alcoholic gastritis. The odor of the gastric contents is influenced by the character of its constituents. The abnormal contents we recover are blood, bile, mucus, pus, food remains, and occasionally tumor particles. Small amounts of blood or bile need not necessarily be considered

pathological. Large amounts of blood naturally point to some ulcerative process. Large amounts of bile continuously present, indicate a duodenal stenosis below the entrance of the common duct. The mucus content aids us in our diagnosis of a gastric catarrh. We must, obviously, be certain whether the mucus is native to the stomach or from other parts. It is of interest to note that in cases of ulcer, the gastric contents rarely show the presence of mucus to any extent.

Large amounts of pus rarely appear in the stomach secretion. As a rule, when present, pus is generally swallowed from the respiratory passages. Food remains in the gastric secretion after longer periods usually denote an impaired motility. Occasionally one obtains portions of the mucous membrane or even tumor particles. The former we see in some cases of achylia or in hemorrhagic erosions.

The *microscopical examination* enables us to observe the presence of food remains, blood cells, epithelium, various organisms, and tumor cells. The presence of good striped muscle fibre under the microscope denotes a diminished digestibility by the stomach juice. Fat, either as droplets or as fatty acid crystals, in large amounts denotes stagnation. Yeast cells, sarcinae, and bacteria all have a similar significance.

The *chemical examination* of the gastric secretion is absolutely essential to give us an idea as to its aid to digestion, its effect upon the different food stuffs and for the detection of any abnormal chemical processes in the stomach. In the chemical examination we determine: First, the hydrochloric acid; second, the ferments; third, the albumin and starch digestion; fourth, organic acids; and, fifth, occult blood. The hydrochloric acid content of the gastric juice is 0.3 to 0.4 per cent. The chemical examination never shows us pure gastric juice, but a mixture of the secretion, food remains, saliva, mucus, occasionally bile and pancreatic secretion. The acid is both free and combined. The amount of either present is necessary for the estimation of the secretory function. The acid determination of the gastric secretion is a functional method; only in connection with other aids, is it of diagnostic significance.

The examination for ferments is of less importance than that for the acid determination, and in such examinations we look for pepsin, rennet and the fat splitting ferment. The pepsin is stimulated by the action of the acid on the pepsinogen and changes the proteins into albumoses and peptones. Many methods have been devised for the quantitative determination of pepsin and those most frequently employed are the Mett, ricin, edestin, and casein methods. The rennet is also actuated by the action of the hydrochloric acid on its proenzyme. The presence of a fat splitting ferment in the stomach is still an unsettled point. Many observers have concluded that the fat splitting is due to the presence of bacteria, and others that it is caused by regurgitated pancreatic secretion.

As a rule it is unnecessary to examine for pepsin and rennet where we have already found distinct amounts of acid, for they are usually present together. The necessity for its examination arises where we have a marked subacidity or an acidity. To

be positive about the absence of pepsin, it is best looked for after a Riegel test dinner, because such a meal has a more stimulating effect upon the gastric glands. Rennet may be present without pepsin, and Fuld asserts this to be the case when pancreatic secretion is present in the stomach, for it also possesses the property of coagulating milk.

The examination for lactic acid is superfluous in the presence of even small amounts of free acid. Lactic acid is present only where we have a very diminished free acid and stagnation.

By the presence of occult blood we mean the discovery of blood through chemical means, though macroscopic appearance does not show its presence. This is best looked for in the feces, because of the many factors entering into the recovery of stomach contents by means of a stomach tube, which may deceive us in our conclusions. Naturally we must in such cases rule out the presence of hemorrhoids, fissures, or other rectal lesions. Furthermore, we must insist that the patient receive suitable food for several days before examining for occult blood.

Many methods have been suggested to aid us in this examination, such as the Teichmann test, the spectroscopic, guaiac, aloin, and benzin tests. Recently Boas has mentioned phenolphthalein. Boas lays great stress on the importance of this examination for occult blood. He formulated the maxim, that in the absence of free acid the presence of good stomach motility, and persistent negative results in the examination for occult blood, there is but small likelihood of the presence of a carcinoma.

In ulcer, occult blood is no constant symptom. It may be found as the result of vomiting, in functional conditions, in fact in any lesion of the digestive tract. The examination of one specimen has absolutely no value; many examinations should be made several days in succession. To sum up its value, we can say that a persistent positive result points to some ulcerative process, whereas a persistent negative result signifies nothing.

Sarcinae and Boas-Oppler bacilli have been found in the feces, having migrated from the stomach into the intestine. In these cases, they signify a stagnation in the stomach with a subacidity, for example in a carcinoma of the pylorus. Sarcinae are also found in diarrheal stools without an accompanying stomach lesion.

Included among our diagnostic aids, is that of Salomon, who, in 1903, described a method for the diagnosis of carcinoma of the stomach. The method is dependent upon the conclusion that every ulcerating surface discharges a serum whose albumin content can be determined. The test requires a laboratory for the nitrogen determination, and is consequently impracticable for the practitioner. Salomon found that in carcinoma, the nitrogen content in the washings from such a stomach to be much higher than in other lesions. The method at first had many admirers, but laterly has been discarded.

Schmidt in his *Probekost* suggested feeding patients for three days with a meal to include 100 to 125 grammes of browned beef in order to observe the presence of connective tissue fibres in the feces, so that he could differentiate between a stomach and a pancreatic affection. Much stress need not be laid on this test at the present time. The Sahli

desmoid test rests on the same principle and has also been superseded by many newer and more valuable methods. The methylene blue reaction on which it depends may be liberated in the intestine as well as in the stomach.

In recent years many biological methods have been proposed to aid us in our diagnosis of carcinoma. Up to the present time, while each of these methods has not led to any definite diagnostic result, still it is to be hoped that with time, perfection, and much more experience, we may acquire a valuable diagnostic aid in one or more of them. Each of the methods depends upon a study of the fluid excreted from the cancer bearing area. Those most commonly known to us are:

1. The peptid splitting action of the gastric secretion.
2. The presence in the fluid of hemolysins.
3. The precipitin and complement reaction.
4. The anaphylactic action of the gastric secretion.

The use of the peptid splitting reaction of the carcinomatous secretion was begun as a result of the work of Emerson, who showed that carcinomata secrete a ferment which is more intense in its action on proteins than other ferments are. Neubauer and Fischer used glycytryptophan for the purpose of this reaction; this substance, being split up by the cancer ferment, sufficed for them to suggest a new diagnostic aid for the presence of this disease. There are many factors which we must consider before reporting a positive reaction, as the presence of blood and pancreatic secretion may also give a positive result. Latterly, Warfield has reported that even the saliva itself may give a similar result. The method has found many opponents as well as some adherents. Some modifications of the method have been made, but taken all in all, it can not be accepted as a reliable diagnostic aid.

The presence of hemolysins in the carcinomatous gastric secretion was noted as a result of Metchnikoff's work. Grafe and Römer found that the ether extract of a carcinomatous stomach content made alkaline, under certain circumstances possesses some hemolytic substance. They found this reaction present in all carcinoma cases and absent in all other stomach lesions. This method is also considered unreliable by many observers. The precipitin and complement reaction followed Maragliano's work. He found that the serum of carcinomatous subjects contained specific precipitins. The value of this method cannot be properly estimated yet owing to insufficient data. The anaphylactic reaction was described by Liverato. This is dependent upon the subdural injection of 0.1 c. c. of carcinomatous gastric secretion, and is followed in animals by a sharp anaphylactic shock. Liverato's work on the human patient with this test is not yet completed. The anti-trypsin and miostagmin reactions which are also being employed as diagnostic aids, are not yet sufficiently reliable. The careful study of the blood itself gives no special assistance in the differential diagnosis of carcinoma of the stomach and other gastric lesions.

Examination of the urine has not led to any definite conclusions in our diagnosis of gastric conditions. Salkowski, Salomon, and Saxl have re-

ported that in seventy per cent. of their carcinoma cases, there was an increase of the oxyproteic acid in the urine. For many years many observers discovered pepsin in the urine without laying too great stress on its presence. Recently this has been studied again, and its absence or presence has been adapted to aid us in the diagnosis of certain gastric conditions. At the present time, the question is too unsettled to enable us to derive any positive conclusions.

The functional examination of the stomach implies a study of its motility, its secretion, and its absorption. The motility is dependent upon the peristalsis and on its tonicity. Stiller designated the concentric contraction of the stomach on its contents as the *peristole*. The motility may be interfered with by an increase of the peristalsis, the peristaltic restlessness of Kussmaul, or an increase in the peristole, the erection of the stomach described by Boas. A diminution of either is termed respectively a peristaltic or peristolic insufficiency. The former is identical with the previously described motor insufficiency, the latter with atony.

An increased peristalsis can occasionally be determined by inspection alone. A rapid emptying of the stomach into the intestine is not necessarily significant of an increased peristalsis as seen in a pyloric insufficiency or in achylia. We must first exclude a pyloric insufficiency before we can conclude that there is an increase in peristalsis. This increase occurs in pyloric or duodenal stenosis; it also occurs as a neurosis, the *termina ventriculi nervosa* of Kussmaul. Different alkaloids, as apomorphine, caffeine, nicotine, and others may cause an increased peristalsis as well as some psychical influences on the central nervous system.

A study of the stomach contents and the employment of the x rays materially aid us in the diagnosis of a pyloric or duodenal stenosis. An increased peristole often accompanies an increased peristalsis. We can recognize this by occasionally palpating the contracted stomach wall through the abdominal muscles. The peristolic increase is pathognomonic of a pyloric stenosis and usually in such a case, this is of an organic nature. A peristaltic insufficiency can be diagnosed only through a consideration of the gastric content as to its character and the length of time in the stomach. Many different test meals have been used to aid us in the diagnosis of this condition. Many substances also have been employed, judging the time of their appearance either in the urine or saliva as to the degree of insufficiency.

The peristolic insufficiency may occur as a result of the loss of contracting power of the gastric muscularis. It may be either primary or secondary and need not always accompany a peristaltic insufficiency. Formerly, the presence of succussion was accepted as diagnostic of such an insufficiency or atony, but is not considered such now. The Röntgen ray examination in this condition gives us the most satisfactory results.

Examination of the gastric secretion is best done through chemical means after the ingestion of test meals, as previously mentioned. The methods employed for the examination of the absorption from the stomach are unsatisfactory, owing to the fact

that we never know positively how much of the different food stuffs have left the stomach and passed on into the intestine. For clinical purposes, von Mering showed us that practically no water is absorbed from the stomach, whereas the absorption of alcohol, salt solution, sugar solution, peptones, and a number of other substances may be begun in the stomach. We also know that the empty stomach absorbs more quickly than the filled one. Naturally any pathological anatomical change of the gastric mucous membrane must interfere with its absorptive power.

After several years' study of the diagnosis of gastric diseases, both clinically and in the laboratory, I am compelled to admit that as yet we have no absolutely reliable diagnostic aids and consequently much is left to be desired. Every case demands, in addition to a careful consideration of the subjective history, the application of every possible laboratory aid to our physical examination.

It is still frequently a most difficult thing to make certain a differential diagnosis between a functional and an organic lesion. The positive diagnosis of an ulcer is not always easy, for even a hematemesis cannot be considered a cardinal symptom.

No great ingenuity is required to diagnosticate a malignant growth if we can palpate a distinct tumor of the stomach and find all other signs and symptoms of malignancy. The early diagnosis of this disease, in the absence of such a mass, despite the most careful chemical study and the application of all the known biological tests, remains the same difficult problem encountered by the preceding generations of clinicians. I am optimistic enough to believe that this difficulty will also be overcome in the future, and perhaps our greatest aid may lie in the further development of roentgenology.

Hertz, in his introduction to the Goulstonian lectures for 1911, says: "No branch of medicine has made more rapid strides in the last fifty years than that which deals with diseases of the alimentary canal. Just as our knowledge of the chemical function was revolutionized in the latter part of the nineteenth century by the introduction of test meals, so in the present century has our knowledge of its motor functions in health and disease undergone a complete revision as a result of investigations with the x rays."

225 WEST 113TH STREET.

CLINICAL OBSERVATIONS OF TRACHOMA.

BY HENRY M. FRIEDMAN, M. D., LL. B.,

New York,

United States Public Health Service.

Trachoma is a disease which, because of the lack of exact diagnostic methods, has been the subject of a great deal of controversy both as to the existence of the disease in a given instance, and as to its infectiousness and its cure. It is a chronic, malignant (in so far as the life of the conjunctiva is concerned) disease of the conjunctiva, highly contagious, whose course extends over years, ending in the destruction of the mucoid elements of the conjunctiva and its replacement by scar tissue. The

characteristic scarring, in trachoma, occurs in no other disease and when found is absolutely pathognomonic of the condition.

The causative or germ agent has not yet been discovered. The ideal aimed at in all diseases is the discovery of an agent in the tissues or their discharges which is capable of reproducing the disease. Recently, a few observers, in an effort to discover a causative agent, and thus a true diagnostic sign, have found, in smears from the conjunctiva, peculiar bodies which they called "trachoma bodies." These are small Negrilike bodies found in the cellular elements from the scrapings of affected eyes. These bodies are either entirely cellular, entirely extracellular, or partially cellular and partially extracellular. They were not found in all cases where the clinical diagnosis was not in doubt, and their significance has not yet been determined. In the absence, however, of more definite diagnostic signs, the clinical observations must be relied upon for diagnosis. The fact is that in most of the infectious diseases the causative agents have not been discovered, yet the clinical diagnoses are universally accepted.

The disease is primarily a disease of poverty, congestion, and poor hygienic surroundings. Even in places where, and among people in whom the disease is endemic, the better classes are almost entirely exempt. The disease is said to have had its origin in Asia and Africa, and to have been introduced into Europe, from Egypt, by Napoleon's soldiers, hence its name of Egyptian ophthalmia. Trachoma is especially prevalent along the Mediterranean coasts of Europe, Africa, and Asia, being very common among the Egyptians, Arabs, Armenians, and Syrians. In southern Europe among the Poles and Hungarians, as well as among the Polish and Russian Jews, it is fairly common. In France it is rare. The Germans and the Russians are not commonly affected by it, but along the German-Russian border it is common. In northern Europe, with the exception of a few imported cases, it is not common. Among the Finns and the Dutch it is slightly prevalent. It is rare to see it among Scandinavians. In the British Isles only the Irish are affected by the disease. In short, it is more common among the Latin and Semitic races; rare among Germanic and Teutonic races.

The disease affects both sexes alike. The very young seem to escape it, while it is rare to see it, in the acute stage, in people beyond middle life. The disease may attack some members of a family and pass by other members who have been equally exposed to it. This is not at all peculiar or an argument against its infectiousness, as it is not uncommon to see such highly infectious diseases as measles or scarlet fever attack most of the members of a family and pass by a child who has perhaps purposely been exposed to it. The disease usually attacks one eye first, and, in spite of the constant introduction of infectious material from the affected eye, the other eye may escape infection entirely. This condition is frequently true of pulmonary tuberculosis, in which one lung is almost entirely gone while the other is not affected at all. In trachoma, in fact, it is rare to see the two eyes in the same stage of the disease or infected at the same time,

though in most cases, sooner or later, both eyes become involved. Two eyed, acute, and similarly involved conjunctivæ point rather to benign conjunctivitis, since the latter, except in irritations from foreign bodies or in the specific germ infections, like diphtheria and gonorrhea—where the fulminant character is significant—is bilateral.

Again, trachoma is a chronic infectious granulomatous disease of the conjunctiva, of which it can almost be said that, if it is not chronic it is not trachoma. There is no such thing as an acute trachoma—except in the sense that there is an acute or beginning stage of trachoma—any more than there is an acute tuberculosis, syphilis, or leprosy (which are also essentially infectious granulomatous diseases), which run acute courses and get well without leaving their marks in the shape of fibroid or scar tissue. It is doubtful whether, in the acute stage, the disease can be aborted, and if it is aborted whether it was trachoma.

The disease may be divided into three stages—acute, chronic, and cicatricial. Trachoma practically always commences in the palpebral margin of the upper lid, extends backward over the tarsal plate into the fornix, and then to the lower lid. In the chronic stage the disease extends on to the ocular conjunctiva and then on to the cornea in the form of pannus. The disease practically never starts in the lower lid, so that it may almost be laid down as a rule that if it is not in the upper lid it is not trachoma. It is common to see severe involvement of the upper lid while the lower lid is normal. This may be due to the fact that the lower lids act as troughs to direct the tears into the lacrimal canals and are, therefore, always kept flushed out and thus, more or less, free from infection. It is a fact that displacements or deformities of the lower lids cause overflow of the tears. The lower lids are, therefore, only affected by direct extension from the upper lids.

In the acute stage the conjunctiva is greatly thickened—from six to even ten times its normal thickness. This increase in thickness, and consequently in weight, gives the characteristic droop to the eyelid. The swelling of the conjunctiva has not the smooth, flat, redness seen in benign cases of conjunctivitis, but a distinct beef red appearance. When the lid is everted the prominence of the conjunctiva gives one the impression that the lid is convex internally. Furthermore, the conjunctiva has the appearance of a portion of spleen tissue with the capsule stripped off, because of the many irregular indentations appearing on the surface—corresponding to the indentations the tubercule make on the surface of the spleen. These indentations are due to the increase in depth of the normal epithelial depressions on the conjunctiva, which take the form of minute furrows or grooves. The grooves or depressions increase in depth in proportion as the lymphoid layer of the mucosa is thickened and elevated. In this way are formed—in the chronic stage—the trachoma elevations or granules. The condition known as sagolike bodies are seen only early in the acute stage. They are little, white, glistening bodies scattered over the conjunctiva, not close together, giving somewhat the impression of

Koplik spots, only more prominent. They do not stay long and in fully developed cases they are rarely seen. In the early stage, also, there is a thick, ropy discharge which is highly infectious. From the outset, the bloodvessels, which are normally so prominent and which, in benign cases of conjunctivitis, are so engorged, are entirely obliterated, owing to the diffuse infiltration of all the tissues. The fact of the obliteration of the conjunctival bloodvessels is of great diagnostic value, since, in doubtful cases, with the conjunctiva red and swollen and the bloodvessels gone, the diagnosis of trachoma can be safely ventured. In spite of the marked swelling and the discharge in acute cases, there is very little discomfort, certainly not in proportion to the swelling and discharge. In fact persons with marked involvement will, in good faith, not be aware of the condition.

The acute stage may last a number of weeks or months; the swelling grows less and the discharge may decrease or almost entirely disappear. The indentations or reticulations on the surface of the conjunctiva grow deeper, wider, and more marked, forming between them the papillary excrescences or granules—the result of the subepithelial infiltration of the conjunctiva with connective tissue elements. The granules are firm, hard, circumscribed, lymphoid, or adenoid growths resembling lymph follicles. They are really new growths, but of inflammatory origin, just as are the infectious granules of tuberculosis, syphilis, and leprosy.

Cicatrization begins through the organization and contraction of the inflammatory products thrown out during the process. The conjunctiva is studded with these little granules around which are seen limiting bands of connective or scar tissue—the characteristic scarring seen in no other disease. The granules or papillary excrescences have a constricted base and taper at their free end, giving the impression of pressing the pea out of its pod. Frequently, instead of these papillary excrescence, the condition takes the form of raised plaques or macules, each surrounded by scar tissue.

The condition known as pannus is the result of the extension of the trachomatous overgrowth of the conjunctiva on to the cornea. Not all cases, however, progress that far; most of them stop at the fornix. Pannus is a serious condition. It should be looked upon as the end, inevitable result of trachoma, even though all cases do not become pannus. Pannus is a distinct inflammatory process and not merely the result of friction from the upper lid. In pannus the cornea is also the seat of a diffuse subepithelial infiltration with the formation of papillary excrescences or granules. The process advances over the cornea in the form of a membrane which reduces its transparency and eventually results in blindness. Besides, the organization and contraction of the fibrous elements interfere with the corneal circulation with the production of ulcers, infection, hypopyon, and finally even general ophthalmia. While the latter condition is not common, even among Europeans, among whom trachoma is prevalent, it is frightfully common among the Mohammedan people of Asia and Africa, especially among the pilgrim caravans.

Cicatrization begins at the palpebral margin and progresses in the same order in which the disease progressed. The fornix is the last to cicatrize and should, therefore, always be turned out to discover last traces of the disease. The cicatrization is a curative process. As the bands of scar tissue increase in width and encroach on the granules, the latter decrease in size and number. Only when every bit of raised red tissue has been replaced by scar tissue has the disease stopped and can the condition be considered cured. It should not be forgotten that newly formed scar tissue has, at first, a reddish appearance, which, as the organization becomes more complete, whitens. This should not, therefore, be mistaken for "live" tissue. The scar tissue is smooth, not raised, but on a level with the older, and therefore whiter scar tissue. Cicatrization may go on for years—almost indefinitely—before all of the mucous membrane is replaced by scar tissue. Very frequently further scarring ceases and the condition does not progress for years; or it may light up again in acute exacerbation and involve more tissue. The disease is not cured as long as there is any diseased tissue left unreplaced by scar tissue.

In the examination of a case for trachoma it is absolutely essential that the upper lids be completely everted and the fornices brought into view. The practice of everting only the lower lids, or even of allowing the patient merely to pull down the skin of the lower lids, is not thorough, because nearly all cases of beginning trachoma will be overlooked, while benign follicular conjunctivitis may be mistaken for the more serious affection. Even in severe cases of trachoma the lower lids may show no change. Besides, benign cases of conjunctivitis are more likely to affect the lower lids owing, possibly, to their greater vascularity and also to the looseness of the tissues which do not properly support the delicate bloodvessels and render them more liable to circulatory disturbances and inflammation.

Trachoma differs from simple conjunctivitis in that the swelling is smooth and even. The engorged bloodvessels are plainly visible through the swelling. Both eyes are usually affected at the same time and to the same degree. Lacrymation and photophobia are usually marked.

From follicular or vesicular conjunctivitis the differential diagnosis may be a little more difficult. In all large centres there is a great deal of this trouble, especially among school children. It goes hand in hand with the adenoid or lymphoid diatheses, and is, undoubtedly, another manifestation of those conditions. The condition follows, and usually remains a long time after the eruptive fevers of childhood. It is, like simple conjunctivitis and probably for the same reasons, more common in the lower lids; because of its follicular or granular appearance, is often mistaken for trachoma. Some writers describe a benign form of trachoma, but it is better to reserve the term for the malignant forms of conjunctival involvement, with diffuse white celled infiltration and the characteristic scarring. In follicular conjunctivitis there is little thickening, and consequently little tendency to drooping of the lids; the bloodvessels are not obliterated. Follicular con-

junctivitis is frequently accompanied by blepharitis, while it is rare to see it with trachoma. The granules or follicles do not give the impression of solidity that those of trachoma do. The former, in fact, look like vesicles. There is a severe form of follicular conjunctivitis—a true vesicular conjunctivitis—in which the conjunctiva is studded with large vesicles, so closely packed together that the sides of the vesicles appear faceted—a pavementlike appearance.

Calcareous deposits on the conjunctiva are not uncommon. When they are small and numerous they give rise to the suspicion of trachoma, but a careful inspection cannot fail to reveal the real condition.

TREATMENT.

The treatment of trachoma is thus far very unsatisfactory. The end desired in trachoma is the eradication of every vestige of involved tissue and its replacement by scar tissue. The mucous membrane cannot be restored. As long as there is any unscarred tissue left the disease must be considered active and infectious. Formerly, the most common treatment was expression with roller forceps. In real trachoma this is of little efficacy, since there are no vesicles to express; trachoma granules are solid. In follicular conjunctivitis, which will not respond to other treatment, this is a good method to pursue. In fact the application of the expression treatment in doubtful cases will serve as a diagnostic sign, for the benign cases will promptly clear up. The scrubbing of the conjunctiva, which usually accompanied the expression treatment, was of more value because the resulting mutilation promoted scarring. Frequent curettage or other methods of mutilation is good treatment, except that the severe reaction may be objectionable. More recently, scarification of the diseased conjunctiva, with the view of hastening cicatrization, has been tried with better results. Treatment with the caustic stick is crude and of little or no value. In cases where isolated and widely separated areas only are left unscarred, complete extirpation of these areas has been tried with good results.

The treatment of pannus is still more unsatisfactory. The structure and function of the cornea forbid the use of severe surgical measures. Incision or the application of the actual cautery around the margin of the cornea has been tried, with varying but unsatisfactory results.

CONCLUSION.

Trachoma is a chronic, malignant, and highly infectious disease of the conjunctiva, attacking principally people living in crowded and unhygienic surroundings; it almost always commences in the palpebral margin of one of the upper lids; it is pathologically a diffuse subepithelial, white celled infiltration of the conjunctiva; its most serious complication is pannus; a cure is effected by the replacement, in a characteristic manner, of the mucous membrane by scar tissue; the ideal treatment is any method which promotes scarring, with the extirpation of isolated areas which have finally refused to heal.

TEN SEX TALKS TO GIRLS.

BY IRVING DAVID STEINHARDT, M. D.,
New York.

VI.

To-night we are going to discuss various things which, if corrected, I believe would lead to less immorality. Some of these things might be put under the head of modesty—or, should I say, the lack of modesty? Others might be called good breeding—or perhaps the lack of it. First, I want to say emphatically that I am a firm believer in the mingling of both sexes from infancy to old age. I believe that a boy who is constantly in the company of nice girls of his own age is better off in many ways for this association. Having some favorite among the opposite sex whose good opinion he values very much, prevents him from getting a good many habits he is better off without. The influence of "his girl" makes itself felt, and being a well brought up little maiden she will not accept the boyish affection of a lad who uses bad language, be the bad language either profanity or immoral words. She also objects to smoking cigarettes, to drinking liquor, and general bad conduct. To please her, our little lad eschews all these things and endeavors to conduct himself in her presence at least like a little gentleman. From acting this way in *her* presence he is likely to contract the habit of desiring to conduct himself at all times in this manner. Likewise, from being in this company, the sexual desire is not aroused in a bad way by immoral stories, so called jokes, and from learning the experiences of other and probably older boys who have indulged in illegal sexual relations. To sum up, he becomes a moral, manly boy, instead of more or less of a rough, and if he grows up continually under such influences he becomes a moral man, of force and character and a citizen of whom his community is proud. He is the sort of man that will make a good husband and father, because he has no venereal taint in him to poison his wife and children, and because he is a real man in every other way.

Now, what does the girl gain by being brought up, as it were, in the company of the other sex? She also, like the boy, has one of the opposite sex who appeals to her just a little bit more at least, than the rest of the boys whom she knows, and her desire to win his approval stirs her to greater efforts to improve herself and be a nice, ladylike girl. The average boy is a very harsh critic and very plain spoken, and when that little girl sets out to please him she has undertaken a very hard job. His thoughts are clean and healthy and anything that she does which is not right according to his boyish lights of what is wrong and right, earns his outspoken disapproval in emphatic form. He wants "his girl" to be an example for all the others in neatness, cleanliness of tongue and action, and good breeding. No matter what he may be, he wants her to be beyond reproach in every way. The girl naturally endeavors to live up to these requirements,

at least in *his* presence and, as in the case of the boy already spoken of, "practice makes perfect." Again, this same girl becomes aware of her influence over the particular one of the opposite sex and this awakens in the right sort of a girl a desire to wield only an influence which will be for the betterment of the boy. It develops in her the normal instincts to be a comrade to the male, watching over him and guiding his footsteps toward the goal of the highest achievement. If she grows up in such an atmosphere of thought and desire, she is going to be a real woman, standing for everything that is good and worth while. Her influence is going to be on the side of good morals, and at least one boy is going to be kept in the path of morality through her efforts; probably more than one.

You can all be such women if you will. The question is do you want to be, and wanting to be, are you willing to work hard enough to gain such an enviable position? Is it worth while? It most certainly is. You will be adding to your own health and happiness, the health and happiness of the man whom you have helped to see the wrong in the present double standard of morals; and to the health and happiness of your sex in general, some of whom you will have saved from the lowest of the low types of degradation. So if again you are even tempted to doubt whether it is worth while, just think over very carefully what I have just said.

In what other ways can you assist a young man to be moral? In what other ways can you be more moral in your actions? The answer to both questions is a simple one—be modest. Many of you will immediately say, "surely I am exempt from such advice, I am modest." Well, perhaps you are, and perhaps you are not. Let me tell you of some things which I call immodest and see if you are guilty of any of them. Indiscriminate kissing is certainly immodest. For a girl to allow herself to be kissed by anyone and everyone is not a very good thing. "Familiarity breeds contempt" is an old saying and a true one. If a young man finds you accessible to kissing, he may also get an idea that your morals are loose or can easily be corrupted, and he may take it upon himself to ascertain. You see kissing, particularly of a violent, passionate type, arouses sexual desire usually, and if you lead a young man on by such actions he is liable to forget himself, may be even to the point of using force. Likewise, the kissing is liable to have aroused your passions somewhat and put you in a condition of mind wherein your usual clear judgment and sense of right and wrong are blunted, and you are liable to be sorry afterward for what you have been a party to.

Such a state as I have just described has cost many a girl her womanly honor. The danger of kissing and bad consequences following it are distinctly increased by being "in a couple instead of a crowd." I could say much more about this one subject alone, but I think that just these few words will convey to your minds exactly what I mean. I take occasion to say here that even engaged couples should avoid too much of this kind of thing, because even for them this is fraught with danger. They have their thoughts of future happiness to

make them still more reckless in aroused sexual desire. Outside of their relations I think girls are best off unknissed as far as the opposite sex goes. After all I have already said regarding allowing familiarities upon your person by the opposite sex other than kissing, it seems almost superfluous to speak again about such things. Still I will say a very few words again to remind you of the dangers of such things. Embraces are suggestive of body contact, and suggestions of body contact bring thoughts of sexual contact. Therefore, avoid them. Do not permit any handling of your person unnecessarily, no matter where. If you stop unconscious familiarity in the beginning, you will not have intentional familiarity to stop later on. A girl must always be on her guard to see that in no way is she responsible personally for the arousing of the sexual desire in the opposite sex. She is the better balanced of the two sexes in this regard, and the one to suffer most when the moral laws are transgressed.

The question of how a girl dresses is also an important matter. The male sex has always been trained to regard the female form as something sacred, to be concealed from public gaze, and several years ago no one but an immoral female would wear anything that would in any way display her womanly charms, or make her figure conspicuous. Such things formed part of her stock in trade to attract the attention of men and arouse in them animal passion, to be satisfied by sexual relations with the tempter, who of course collected money for gratifying the passion she had aroused. In former days, we had no difficulty in recognizing on the street the immoral class—they dressed in a way so totally different from the respectable women that we might have almost spoken truthfully of them being dressed in a uniform which was an advertisement of their despicable calling. To-day it is quite different. I regret to say that if we were to judge the morals of every woman by the flashiness of her dress, many would be misjudged. I shall not argue with you whether it is right or wrong for the female form to be properly draped—by which I mean that her figure will not be unduly conspicuous. Our present custom of modesty says it should, and if we are to change it, the change must be a gradual one, going through several easy stages so that the male sex have a chance to readjust themselves to the change. Let us go into a little more detail. Low neck dresses, which are cut so low in the front that they reveal to the public gaze the breasts, in whole or in part, depending on whether the female is standing, sitting, or bending forward, can hardly meet with the approval of a modest person, and yet such dresses are only too common at many dances or parties. They are calculated to put the thoughts of the men who are present into one of two grooves—disgust at the lack of decency, or sexual desire. Those guilty of this immodesty are not only young girls, but many women old enough to know better.

None of you, dressed only in an underskirt and a corset cover, would receive a man. The mere thought of such a thing sounds foolish to you. Your modesty would prevent you from even mentioning petticoats and corset covers to the opposite sex. You

do not want them even to imagine you in such a costume, and yet that is virtually how you often receive them. You have on a waist of the thinnest possible material so that it is easily seen through and in it you have insertions of lace or other material. And then, for fear the attention of the observers is not sufficiently called to the corset cover and the breasts back of it, you put various colored ribbons in the corset covers you wear still further to call attention in this direction. Likewise you buy very handsome corset covers if your means allow it, not for your own sense of gratification, but because in the style of your dressing they are going to be seen by others. By this time many of you are thinking how old fashioned I am—and you are right. I am still old fashioned enough to admire a modest, ladylike girl. But let us travel on with our talk.

Formerly a woman who for some reason was compelled to raise her skirts, carefully raised them just to the smallest extent of the necessity, but now with her transparent stockings of lisle thread, or silk, such modesty has flown. She must show off her finery and with it her lower limbs. Do you not think that some men look for such things? Prove it for yourself by observing the crowd of them standing at some exposed place on a windy day. They are liable to misjudge you also. Do you like to be classed among the fallen women? How many of you would be willing to walk through the street in a pair of glove fitting tights? Not many I venture to say—and yet that is what many of you do with the present day styles that you wear. Not a line of your figure is concealed, and in fact the lines are rather thrown out in bold relief. On a windy day the effect is exaggerated to a most marked degree. You may be in style, but you are neither preaching nor practising modesty and you are exciting thoughts of immorality in your male acquaintances. If you could hear some of the remarks they make about you under the circumstances, you would not feel at all complimented.

Another article of dress which has become somewhat changed is the bathing suit. I need not go into details, for you are as familiar with the present day style as I am and just a little more so. Suffice to say that in the past the bathing suit of the female was designed to be so neat, inconspicuous, and modest as possible. Can as much be said for the present stylish ones? And while we are speaking of bathing suits, I might remark on bathing conduct. The rules of good breeding and refined behavior are as much to be regarded at this time as any other. With the shedding of your street clothes for the healthful recreation of bathing, you must not shed refinement. Familiarity here is just as much to be resented as at any other time. Personally I have been somewhat amazed by the carelessness, to give it a mild name, of speech and action of many young women under these circumstances, who at any other time are entirely different. I might add to this, while on the subject, a remark on general conduct at these outing places. Be a ladylike, well bred woman no matter where you are. Coarseness, familiarity of speech or action, vulgarity, lack of good breeding or refinement are always the same glaring

faults, no matter what the circumstances or where the place. To allow them or practise them is at your peril—your good name is liable to be lost.

Paint and powder; it certainly seems queer to have to discuss the use of such things by supposedly civilized human beings. Why a woman wants to decorate her face like a savage or an Indian I never could understand. It certainly does not add to one's self respect to go masquerading around like an Indian in his war paint. In fact, you laugh at them and talk about how ridiculous they look. I say, therefore, to those of you who use these so called beautifiers that it would be a good thing if after smearing yourself with them you would sit down in front of your mirrors and just see how ridiculous you look, and then think it over a little bit. These things do not give you a good complexion, but they will ruin the best. Almost every one of you can have a good complexion normally if you really want it and obey the laws of health. But paint and powder give only an artificial effect, and were formerly practically used only by the women who used their sexual organs as a means of livelihood. They had to use something in an endeavor to hide the ravages that dissipation had brought upon them.

Dancing is to be condemned only when improper dances are considered. Otherwise it is a harmless and not unhealthful pastime and exercise. Of course we cannot indorse the public dance hall with its lack of proper supervision as to who one will meet there. Dances where the poses or steps are suggestive are naturally to be condemned in unmeasured terms. There are several such dances now in vogue, but the fact that some of the so called best society people allow them to be danced at their homes does not make them less objectionable. You know as well as I do that some of our so called best society is such from the view of financial worth only, not from the standard of true worth based on achievement, refinement, education, morality, etc.

Drinking must be mentioned to be absolutely condemned in the strongest terms imaginable. Indulgence in it has cost many girls their womanly honor and has kept them degraded. I advise you not to drink at all. You will be better in every way if you do not indulge. Your judgment in everything will be your own and you will make decisions according to your own reasoning, and not allow the alcohol to decide things for you. Alcohol in any form arouses sexual desire and at the same time blunts your good moral desires. Avoid it always is the best thing to do, but if you will drink some kind of it at times, do so only at home, never outside.

There are several other things I could talk about at length, and much more could be said about the things I have already spoken of, but already the talk this evening has been longer than usual, so I will stop here with just one more piece of advice which I will condense in a few words: Do not flirt. Fast women use such tactics to get acquainted with men. If you indulge in them, you must not feel offended if you are afterward insulted by the man you got acquainted with through such tactics. Late hours, automobile rides with strangers, street meetings, parks at night, and talking with strangers at moving picture shows are all to be condemned.

MITRAL STENOSIS AND PULMONARY TUBERCULOSIS.

BY WILLIAM NARINS, M. D.,
New York

Assistant Attending Physician, Gonorrhea-Tuberculosis Clinic

The coincidence of pulmonary tuberculosis and heart disease, formerly regarded as rare, is now known to occur not infrequently. Of the various forms of valvular heart disease, that of mitral stenosis has been regarded as the rarest complication of pulmonary tuberculosis. It was Rokitansky, who, in 1855, was the first to advance the theory "that tuberculosis of the lung and heart disease do not occur together." He maintained that "persons laboring under enlargement of the heart, whether primary or superinduced by mechanical obstruction at its orifices, do not contract pulmonary tuberculosis." He also maintained that any other condition producing cyanosis had the same influence, and that cyanosis was a complete protection against tuberculosis.

This hypothesis was supported by many eminent observers as a result of the great infrequency of tuberculosis in mitral disease. However, Frommhold, in 1875, in a study of 277 cases of heart disease, found twenty-two (eight per cent.) with pulmonary tuberculosis, the left side of the heart being affected in all but one instance. Lawrason Brown states that about one per cent. of all patients with pulmonary tuberculosis have heart disease. In a series of sixty-eight cases of mitral disease and pulmonary tuberculosis there were forty-four cases of mitral insufficiency, thirteen of mitral stenosis, three of stenosis and insufficiency, and eight unclassified.

Anders reports six cases, four of mitral insufficiency and two of mitral stenosis with pulmonary tuberculosis. He holds the law of Rokitansky to be untenable and concludes that "the association of phthisis with primary valvular heart disease is probably more common than the usual clinical findings have thus far indicated." It is still the belief of many, however, that tuberculosis develops less often in left sided heart disease, more particularly in stenosis than in others.

Graham attributes this relative immunity to, 1, an increased amount of blood in the lungs, especially the bases; 2, greater expansion at the apices, thus rendering them less favorable soil for tubercle development; 3, increase of involuntary muscle fibres of the bronchi. Bond Stow maintains "that those organic heart lesions accompanied by well marked pulmonary stasis, thus concentrating in the lungs the immunizing agents of the blood, whatever they may be, are rarely followed by phthisis pulmonalis, or if this previously existed, they exert a salutary effect upon it, and either retard its advancement or effect its extinction." This author suggests "in the treatment of our cases of at least incipient pulmonary tuberculosis physical exercise in the open air, several times a day, sufficient to produce severe congestion of the lungs, not mere gentle walking or driving, but running until the induced congestion of the lesser circulation interferes with the free action of the right ventricle and forces temporary rest." He agrees in the main with Rokitansky that "cyanosis is incompatible with tubercle formation:

that it offers an extraordinary immunity from tuberculosis."

Abrams denies the value of congestion, and contends that whatever protection there is comes from cardiac compensation, and when this failed, the tuberculous process became fulminating. Opposed to the view also that pulmonary congestion *per se* is the all important factor in preventing the development of pulmonary tuberculosis, is the fact that hemoptysis, which diminishes the hyperemia, often affords considerable relief from symptoms and even arrests temporarily the progress of the disease.

We see, therefore, in this brief résumé of the subject, authorities somewhat divided as to the value of congestion and cyanosis in pulmonary tuberculosis. That mitral stenosis and pulmonary tuberculosis do occur in the same individual is now admitted by all authorities. Franke's statement that he never saw a case of tuberculosis following a mitral stenosis with well marked hypertrophy of the right ventricle is clearly only personal experience. In a series of positive cases of pulmonary tuberculosis treated at the Gouverneur tuberculosis clinic, there were sixty-two with cardiac complications of all sorts. There were twenty-five cases of mitral insufficiency. There were seven cases of mitral stenosis and one of mitral stenosis and insufficiency. To these should be added one case in which the tuberculous condition was positive as shown by a positive sputum, but the cardiac, *i. e.*, the mitral stenosis, was not certain, and one in which the mitral stenosis was definite but the pulmonary condition was not. This patient was considered probably tuberculous, but was not under observation long enough for a positive diagnosis to be made. Of the seven undoubted cases of mitral stenosis and pulmonary tuberculosis, one had a positive sputum. The other diagnoses depended on the physical signs in the chest, and observations of the temperature, pulse, respiration, and weight, and on the general course of the disease.

Even though we recognize the fallibility of the human ear and remember the limitations of the stethoscope still we cannot agree with the observation of Doctor Anders that "the diagnosis of cases of combined cardiac disease and tuberculosis of the lung demands either the presence of tubercle bacilli in the sputum or a positive tuberculin test." It seems to us that we can now correctly diagnose tuberculous of the lung on the physical signs in the chest, plus observation of the course of the disease, even though the sputum prove negative on repeated examination. The tuberculin reaction has not proved in our hands to be always reliable, as is shown in another part of our report. It is there noted that positive cases, *i. e.*, with positive sputum, have given negative results, and negative cases positive results.

As to the effect of the mitral stenosis on the pulmonary condition, our own experience is not very conclusive, owing to the fact that we have had so few cases under observation, and of these only two or three have been under observation long enough to suggest the actual effect of the cardiac condition on the pulmonary. Whatever evidence we have points to the conclusion that the passive congestion of the lung due to the mitral stenosis acts in a fa-

vorable way on the tuberculous process in the lungs.

Below is appended a brief history of the cases mentioned in this report:

CASE I. Second stage (under observation one week); male, forty-five years old, presser. Present illness began one year before admission to clinic, with pain in the chest and cough, which became worse in last three months. No hemoptysis, scanty expectoration. No dyspnea or night sweats. Had been unable to work in previous month.

Physical examination. Chest expansion poor. Increased fremitus and dull to flat percussion all over both sides, especially at apices, crackling pleuritic râles at right base. Bronchial breathing at apices.

Heart. Thrill at apex, presystolic murmur, not transmitted, accentuated second pulmonic.

CASE II. Second stage (under observation one month, slight improvement). Male, twenty-six years old. Had pleurisy three years ago, with hemoptysis. Present illness began nine months ago with severe cold and cough, the latter of which continued in severe form day and night. No hemoptysis since his pleuritic attack three years ago. Had no pain or fever at examination. Profuse yellow expectoration. Dyspnea increased on exertion, frequent night sweats, nausea, and loss of appetite, and ability to work impaired.

Physical examination. Cyanotic. Poor expansion on ordinary breathing, but forced expansion was good. Diminished resonance all over, especially marked at right apex posteriorly. Bronchovesicular breathing over right side anteriorly and posteriorly and over left upper lobe behind. Fine crepitant râles at fifth and sixth rib on right side posteriorly. Sputum showed the presence of a few tubercle bacilli.

Heart. Roughened first sound at apex, second pulmonic markedly accentuated. Presystolic murmur at apex.

CASE III. Doubtful case of tuberculosis (under observation one week). Male, sixteen years old, jeweller's assistant. Present illness began one month ago, with weakness and cough especially at night. Scanty yellowish expectoration, some dyspnea. No hemoptysis. Had night sweats, impaired appetite, loss of flesh and strength, and inability to work.

Physical examination. Anemic. Fair expansion. Impaired resonance all over, dull at apices and right side posteriorly. Fremitus increased at both apices and all over right side, especially over upper lobe. Occasional sibilant and sonorous râles all over lung. Bronchitis, possibly tuberculous.

Heart, somewhat enlarged. Heaving apex beat in fifth interspace, nipple line. Presystolic murmur, thrill, and accentuated second sound.

CASE IV. Second stage (under observation eight months, slight gain in weight). Lumberman, aged thirty-eight years. Had a severe attack of rheumatism one year before admission. Had a hemorrhage ten months before, and four more since. His sputum now was profuse and bloody. Had fever, night sweats, marked loss of flesh and strength, dyspnea, poor appetite, and was not able to work for previous two months.

Physical examination. Chest expansion fair. Tactile fremitus somewhat increased. Diminished resonance at apices. Breath sounds very distant, high pitched both apices posteriorly. Occasional rhonchi at both bases.

Heart. Mitral stenosis murmur, second pulmonic accentuated.

Had been at Riverside, St. Vincent's, and Bedford for three months one year ago. The lung condition had possibly been improved by the mitral stenosis. The slight signs at apex probably represented a healed lesion.

CASE V. Second stage (under observation one week. Mitral?). Male, twenty-four years old, tailor. Present illness began three years before with cough and hemoptysis. He now complained of severe cough, occasional hemoptysis, profuse yellow mucopurulent expectoration, pain in the chest, dyspnea, night sweats, loss of flesh and strength, and impaired ability to work.

Physical examination. Poor chest expansion. Tactile and auditory fremitus increased at apices and anteriorly both sides, left base and right side posteriorly. Marked impairment of resonance at apices. Breath sounds roughened and prolonged at right apex anteriorly and posteriorly and all over right side posteriorly. Same condition at left apex. Moist râles on right side. Percus-

sion dull on right side. A few tubercle bacilli present in sputum.

Heart. Apex in sixth space, nipple line. Roughened first sound at apex. Slight thrill, accentuated second pulmonic. Possibly mitral stenosis.

CASE VI. Second stage (under observation two and one half years. Condition improved). Female, thirty-one years old, houseworker, four children. Present illness began two years before with pain in the chest and expectoration. Had had hemoptysis, fever, poor appetite, dyspnea on exertion, felt weak and had lost about twenty pounds.

Physical examination. Impairment of resonance of both apices anteriorly. Râles heard at both apices and near sternum. Breathing rough at apices. Râles also heard between scapulae posteriorly.

Heart. Presystolic murmur at apex.

CASE VII. Second stage (under observation one year. Condition unchanged). Female, thirty-four years old, houseworker. Present illness began four months before with morning cough. She had pain in the chest, poor appetite, a moderate amount of bloody expectoration, dyspnea, and insomnia.

Physical examination. Marked impairment of resonance both apices, more so on left, with roughened breathing. Clicking râles heard at right apex posteriorly. Temperature 100° F., pulse 92.

Heart. Systolic murmur heard all over the precordium, loudest at apex and transmitted to left. Presystolic murmur at apex, not transmitted. Accentuation and reduction of second sounds. Slight increase of cardiac dullness to left, but none to right.

CASE VIII. First stage (examined once only. Sent to Otisville). Male, thirty-three years old, baker. Had acute articular rheumatism ten years ago.

Present illness. Had coughed at intervals for many years. Present attack began two weeks ago with cough, chiefly at night. Scanty expectoration. Had lost flesh and strength.

Physical examination. Expansion good. Fair resonance except at apices, where it was somewhat higher pitched. Right apex resonance impaired and roughened. Breathing with occasional sticky râles heard after coughing.

Heart. Apex beat in sixth interspace. Cardiac dullness extended from one inch to left of sternum to nipple line. Loud presystolic rumble, followed by sharp first sound, accentuated second pulmonic. Pulse small and irregular.

CASE IX. Second stage (under observation three weeks. Slight improvement; gain, two pounds). Male, aged twenty-three years, tailor.

Present illness. For about four years. Moderate amount of expectoration, with dyspnea on exertion. Temperature range 99.4° F. to 100.2° F., pulse 112 to 116.

Physical examination. Dullness over left apex, with distant breathing. No râles. Slight impairment in resonance over right apex, with rather harsh breathing; no râles. Left side restricted in motion.

Heart. Hypertrophy. Mitral stenosis murmur.

CASE X. Second stage (under observation six months. Gain twelve pounds; improvement in all symptoms). Male, thirty-four years old, plumber. Present illness began four months ago with difficult breathing. He now complained of cough, variable pain in chest, dyspnea, loss of flesh and strength, night sweats, inability to work, hard heart beat, especially on ascending stairs.

Physical examination. Impaired resonance of right apex in front to third rib and behind to about the level of third dorsal vertebra. Bronchovesicular breathing in same area, with subcrepitant râles. Occasional click at left apex. Some (pleuritic) râles on left side below axilla.

Heart. Presystolic thrill and murmur in region of heart apex. Accentuated second pulmonic.

We see, therefore, that most of these patients have done well, and we are inclined to the opinion that passive pulmonary congestion is a great aid in the treatment of pulmonary tuberculosis, and that instead of active pulmonary congestion, as suggested by Doctor Stow, passive congestion obtained by the patient assuming the recumbent posture, thus hav-

ing the blood practically gravitate into the lungs, is probably much more efficacious, inasmuch as it conserves the vitality of the patient, produces a passive congestion of the lungs more permanent and more nearly akin to the pulmonary congestion of mitral stenosis than that of active congestion as suggested by Doctor Stow.

The possibility of a pulmonary hemorrhage is also avoided in susceptible patients.

In conclusion I wish to thank Dr. N. G. Seymour for many valuable suggestions in preparing this paper.

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309 HENRY STREET, NEW YORK.

CARDIAC DISEASE AND PULMONARY TUBERCULOSIS.

A Report on 126 Cases of Cardiac Disease Occurring in a Series of 2,151 Admissions to Gouverneur Hospital Tuberculosis Clinic.

N. GILBERT SEYMOUR, A. B., M. D.,

New York,

Attending Physician, Gouverneur Tuberculosis Clinic and St. George's Church Tuberculosis Class.

The frequency, or infrequency, with which cardiac disease complicates pulmonary tuberculosis, has been the subject of so much study and discussion, that a review of the cardiac cases occurring in our series was deemed of sufficient interest for a separate section in the medical report recently submitted by the staff of Gouverneur Clinic. The results of that review, and the conclusions which may be drawn from it form the subject of this report.

Among the total number of charts studied, 2,151, there were 126 cases of cardiac disease noted. Sixty-two of these occurred among the positive tuberculous cases; sixty-one among the nontuberculous, and only three from among those whose pulmonary condition was never diagnosed. These groups were studied separately, since it is apparent that a very different significance attaches to the cardiac cases mistaken for pulmonary tuberculosis and those which were coincident with it.

It is evident that in this report the only interest attaching to those cardiac cases which occur in the negative, nontuberculous group, lies in the fact that they were referred to the clinic as actual or suspected cases of pulmonary tuberculosis. That is to say, the cardiac symptoms either simulated a pulmonary condition, or complicated some pulmonary condition other than tuberculosis.

It is a point of great importance in differential diagnosis that certain cardiac lesions may very closely resemble pulmonary tuberculosis, not only in history and symptoms but even in physical signs. This is notably the case in uncomplicated mitral stenosis, which may have symptoms of cough, hemoptysis, and dyspnea, and on examination may give moist râles in the chest—not always symmetrically distributed and not always limited to the bases—which, with an inconstant cardiac murmur

and marked accentuation of the second pulmonary sound, are signs and symptoms often associated with tuberculosis. Fortunately, the combination of the two conditions is infrequent, though by no means so rare as is sometimes stated, and the passive congestion created by the cardiac condition is believed by some observers to exert a favorable influence upon the pulmonary lesion. Eight of our cases of mitral stenosis were uncomplicated by pulmonary tuberculosis; but there were seven instances in which the two conditions occurred together, and these are discussed in a paper herewith contributed by Dr. William Narins. (See this JOURNAL, page 538.)

Among the 519 nontuberculous cases in our series, there were sixty-one with cardiac diseases; that is, in 11.7 per cent. of the negative cases, mistaken for pulmonary tuberculosis, the misleading signs or symptoms were due to cardiac disease. These cardiac conditions were as follows: Chronic endocarditis, forty-six; mitral regurgitation, twenty-seven; mitral stenosis, eight; double mitral, nine; aortic regurgitation, one; double aortic, one; there was one case of myocarditis, one of secondary cardiac dilatation, nine of murmurs diagnosed as functional, and four in which the murmurs were not identified.

Of 1,232 cases of pulmonary tuberculosis studied, sixty-two (five per cent.) were complicated by cardiac disease. There were thirty-three cases of chronic endocarditis, as follows: Mitral regurgitation, twenty-five; mitral stenosis, seven; aortic stenosis, one. There was one case of pericarditis; eleven cases in which heart murmurs were detected, but their origin undecided; and seventeen in which the murmurs were diagnosed as functional.

The three cardiac cases occurring among the undiagnosed pulmonary cases, were one mitral regurgitation, one functional murmur, and one murmur of uncertain significance.

The distribution of cases is shown in the following table:

CARDIAC CASES—TABLE I.

	Sixty-two Tuberculous cases.	Sixty-one Nontuberculous.	Three Undiag.
Mitral regurgitation.....	25—40.3%	27—44.2%	1
Mitral stenosis.....	7—11.2	8—13.1	..
Double mitral.....	..	9—14.7	..
Double aortic.....	..	1—1.6	..
Aortic regurgitation.....	..	1—1.6	..
Aortic stenosis.....	1	..	..
Hemic (functional).....	17—27.4	9—14.7	1
Questionable murmurs.....	11—17.7	4—6.5	1
Pericarditis.....	1—1.6	..	..
Myocarditis.....	..	1—1.6	..
Cardiac dilatation.....	..	1—1.6	..

A comparison of these groups, showing their relative similarity in sex, age, history, and symptoms, is made in:

CARDIAC CASES—TABLE II.

Comparison in Tuberculous and Nontuberculous Groups.

	Tuberculous.	Nontuberculous.
Sex—		
Male.....	40	34
Female.....	22	27
Age—		
Under ten years.....	5	7
Ten to twenty years.....	14	22
Twenty to thirty years.....	13	13
Thirty to forty years.....	20	10
Forty to fifty years.....	9	7
Fifty to sixty years.....	..	1
Sixty to seventy years.....	..	1
Not given.....	..	1

History (family or personal)—		
Negative.....	31	34
Positive—		
Cardiac.....	18	15
Pulmonary.....	11	11
Not given.....	..	2
Complaint on admission—		
Cough.....	24	20
Cough and pain.....	1	5
Cough and hemoptysis.....	3	1
Cough and weakness.....	1	2
Cough and dyspnea.....	2	7
Pain.....	7	5
Pain and weakness.....	1	1
Weakness.....	1	2
Weakness and hemoptysis.....	1	2
Hemoptysis.....	3	2
Dyspnea.....	1	1
Loss of weight.....	2	..
Grippe.....	2	1
Digestive disturbances.....	1	..
Chills or fever.....	2	..
Hoarseness.....	1	..
None.....	3	5

*Previous rheumatism or acute infectious disease.

†Positive family history of tuberculosis, direct exposure, or previous pleurisy, "winter cough," "chronic malaria," etc.

It is apparent, from the foregoing figures, that in almost every particular the two groups closely correspond. The age, sex, history, and symptoms are so similar that no assistance could be gained from them in determining whether a given cardiac case was, or was not, complicated by pulmonary tuberculosis. The sole exception seems to be hemoptysis, whether alone or in combination with other symptoms, for it apparently occurs more frequently in cardiac disease complicated with tuberculosis than in the cardiac cases not so complicated.

The final point studied in our series of heart cases was the type of complication other than tuberculosis which occurred. This is tabulated as follows:

CARDIAC CASES—TABLE III—COMPLICATIONS.

Total number of cardiac cases.....	126	5.8% of total series
Cardiac uncomplicated.....	48	
Cardiac complicated with—		
Pulmonary tuberculosis.....	62	
Bronchitis.....	5	
Emphysema.....	3	
Chronic bronchitis and emphysema.....	1	
Pleurisy.....	1	
Unresolved pneumonia.....	1	
Arteriosclerosis.....	1	
Gout.....	1	
With undiag. pulm. condition.....	3	

It will be noted in this table that the cardiac cases occurred chiefly with complicating pulmonary conditions, or without complications of any kind. This was to be expected under the circumstances, since only those heart cases with actual, or supposed, pulmonary tuberculosis would be sent to our clinic.

The entire series of cardiac cases here reported is so small to permit positive conclusions, but in summing up our general study of these cases two facts seem significant: First, that one of the most frequent errors encountered in diagnosis is that of pulmonary tuberculosis in cases of uncomplicated chronic endocarditis; and, second, that the combination of these two conditions is not very unusual, and therefore the recognition of an undoubted heart lesion does not preclude the possibility of a co-existent tuberculosis of the lung.

In the preparation of the figures which accompany this report I am indebted to the assistance of Dr. Isaac P. Starr.

120 EAST SEVENTEENTH STREET.

THE CHILD AND CONSTIPATION.

By N. J. WEILL, M. D.,
Pittsburgh.

The appointment of the school physician is a step in the right direction. The parents, or guardian, of the child with faulty vision, hearing, breathing, teeth, etc., are advised by the school physician or the State, to seek assistance toward the remedying of these defects. An inquisition, perhaps as important, is *not* made. I refer to the daily "stool," to the getting rid of waste, to the primary cause of many ills.

The teacher cannot always grasp the reason the child wishes to be excused from the school room during the session. If the child wishes to answer a call of Nature, she will grant the permission, but she does not wish to be imposed upon, and thus occasionally refuses a request which should be granted. How can much of this uncertainty be overcome on her part? Every child should have a regular time daily for moving the bowels. With this, the teacher may acquaint herself, and thus misunderstandings will become less frequent. Is this daily stool not fully as important as to regularity as is eating, playing, sleeping, etc.?

The regular daily evacuation of the intestinal canal is fully as necessary to the future well being of the child as is the study of any branch taught so earnestly in the school. In some homes, on account of ignorance, this lesson is not taught and impressed upon the receptive child's mind as it should be; in other homes, false modesty is the root of the evil. Economically, then, it becomes the duty of the State to furnish this enlightenment to the child, the future citizen. Is it not as important as teaching the child properly to free the nostrils, expelling air through each nostril separately, or the wiping of the eyelids toward the nose, or sex hygiene, etc.?

Much toward keeping the child's mind receptive and retentive for school instruction can be gained by preventing intoxication from the intestinal canal. The child's regular attendance at school is often interfered with, due to failure of recognition of the importance of this daily evacuation. It is to be hoped, that ere long it will be the duty of the school to take cognizance of this phase of the child's life, as well as of the compulsory teaching of other branches now considered so necessary for the child's and the State's future.

The foregoing is submitted as a suggestion to the proper authorities. In my opinion, it cannot be impressed upon the school child too early in the curriculum.

8116 JENKINS ARCADE BUILDING.

Correspondence.

LETTER FROM LONDON.

"*Willing Feeding of Suffragist Prisoners—King Edward Hospital Fund and Hospital Expenditure—Deaths of Three Eminent Medical Men*

LONDON, September 12, 1912

A paper has appeared in the *British Medical Journal* and *Lancet* entitled, A Preliminary Report on the Forcible Feeding of Suffrage Prisoners, by

Agnes Savill, M. D., C. Mansell Moullin, F. R. C. S., and Sir Victor Horsley, F. R. C. S., who base their essay on an examination of ninety suffrage prisoners who have been subjected to forcible feeding, and assert that this method of feeding is dangerous and painful and should no longer be carried out in the prisons of the twentieth century. The authors state that forcible feeding by the esophageal or nasal tube cannot be performed without risk of mechanical injury to the nose and throat. Injuries to the nose were especially common. The prisoners were usually flung down, or tied and held, while the tube was pushed into the nostrils. The intense pain so produced often forced uncontrollable screams from the prisoners. In many cases local frontal headache, earache, and trigeminal neuralgia supervened, beside severe gastric pain. In one case an abscess followed, with intense pain over the frontal region which lasted for weeks after release. The authors make a general charge of malpractice against prison medical officers. They say: "Injuries to the nose were especially common, owing chiefly to the lack of previous examination and skill in operating; though the medical officers were informed in several cases that the nasal passage was known to be blocked and narrowed by previous injury, no examination was made."

This charge is made on the mere statements of the suffragist prisoners, who are admittedly persons of mental instability, and whose statements should be greatly discounted. One correspondent in the *Lancet* has shown the falseness and absurdity of some of the charges. It was stated, for example, that prisoners were prevented for three or four hours access to the lavatory. This correspondent points out that the proper utensils are present in every cell. A paper has appeared in the *Medical Chronicle*, dealing with the forcible feeding of the insane, by Dr. Martin Hanley Wood, who states that from personal experience he has found that the passage of a soft tube into the stomach caused no real pain, and he has never met with a case in which any injury was caused to the tissues of the patient. A careful series of investigations as to the occurrence of occult hemorrhage after this treatment failed to reveal this symptom in a single instance. These are the results in cases of acute delirious mania, and other acute forms of insanity, in which conditions the patients are extremely violent. We must conclude that the suffragettes are either far more violent in their resistance than the acutely maniacal, or that their statements are unfounded. The suggestion that prison medical officers who have probably a large experience in the use of the nasal tube from using it on recalcitrant prisoners, are incompetent and unskillful is too absurd to be credible, and it is a pity that the authors in their zeal for the suffragist cause have been led into making such statements.

The authorities who control the charitable fund known as King Edward's Hospital Fund, issue every year a statistical analysis, showing the ordinary expenditure of 107 metropolitan hospitals. The report for 1911 shows that the average cost for a bed was £70-6-2. In 1910 the average cost for a bed was £78-14-11. Thus the expenditure for a bed has slightly increased. Since 1903 every annual

report has shown a diminution in the cost. This is the first time that an increase has to be recorded, and it probably shows that no further economies are possible, the extra cost being probably due to the increased cost of provisions, etc. As special and costly methods of treatment are constantly being introduced into practice, the increase in expenditure will also be due to this factor. The average cost of provisions is eight shillings and ninepence a week per capita.

Three well known British medical men have died during the last few days. Sir William Japp Sinclair, professor of obstetrics at the University of Manchester, died on August 21st at the age of sixty-six years. Mr. Clinton Dent, surgeon to St. George's Hospital and vice-president of the Royal College of Surgeons, died, aged sixty-two years, and Mr. Leonard Bidwell, surgeon to the West London Hospital, died on September 2nd at the early age of forty-seven years.

Therapeutical Notes.

Nasal Treatment of Asthma.—Pierre Bonnier, in *Archives générales de médecine*, March, 1912, reports seventy-five cases of bronchial asthma in which excellent results were obtained by light cauterization of the nasal mucous membrane. The procedure he advocates consists in first ascertaining, by contact of the cautery point, with the current turned off, the location of a small sensitive area of the mucosa which, when lightly touched, causes the patient to draw the eyelids together, or a sudden flow of tears. The situation of this area varies in different individuals, and it is to be sought in the anterior portion of the nasal cavities, on its outer wall or on the upper part of the septum, in front of the turbinates, sometimes just above the nasal ala, and often in front of the anterior extremity of the middle turbinate. As soon as this sensitive area is found, the current is turned on and the point touched with the cautery *as lightly as possible*. The cautery point used should be the smallest available, and the cauterization done so lightly as to render previous application of cocaine unnecessary.

The immediate result of the cauterization is generally a sudden fit of sneezing or coughing, followed, often within a few hours, by complete and permanent relief from asthmatic attacks, even in the most severe and long standing cases. Occasionally, if the sensitive area is not exactly ascertained, or the respiratory centres have been too harshly impressed, an asthmatic paroxysm may be induced on the evening of the same day. But this is merely temporary, and where the method has not proved immediately successful another sitting should be given two days later.

The object of the treatment is so to influence reflexly the centres in the medulla having to do with respiration and other functions pertaining to the respiratory tract—the "pneumostatic" centres, the author designates them—as to wean these centres from their "enervated" condition and thus put an end to any functional irregularities, including asthmatic paroxysms, secretory phenomena, etc., for which they have been responsible. Seventy-five out of 100 cases treated were either cured or greatly

improved; of the remaining twenty-five, some may also have been benefited, as among them were a number of patients who passed out of the author's observation. In many cases symptoms coexistent with the asthma, such as those of hay fever, gastrointestinal disorders, migraine, menstrual disturbances, vertigo, neurasthenia, etc., also disappeared as a result of the treatment.

Treatment of Angina Pectoris.—Oppenheim, in *Progrès médical* for February 3, 1912, states that where there is a tendency to frequent return of the anginal paroxysms, the patient should be kept at absolute rest in bed, and the diet limited to 1.5 or 2 litres of milk a day, a small cupful every two hours. Hot, moist compresses should be applied to the precordium or, if they prove inefficient, an icebag. Nitrites should be administered in either of the following forms:

- R Spiritus glycerilis nitratis,gtt. xx;
Syrupi aurantii, 30 grammes;
Aque aurantii florum, 10 grammes;
Aque destillate, q. s. ad150 grammes.
M. Sig.: One tablespoonful three times a day.
R Sodii nitritis, 1 gramme;
Syrupi aurantii, 25 grammes;
Aque destillate, q. s. ad150 grammes.
M. Sig.: One desertspoonful three times a day.

Where the nitrites fail to be of service, or where the blood pressure is low and a tendency to cardiac dilatation is suspected, digitalis should be prescribed, as, for example, a mixture of 3 c. c. of a one to 1,000 solution of French digitalin with 50 grammes of water; dose, one teaspoonful daily. This may be continued for a week, then intermitted for ten days, then resumed, etc., the periods of intermission being gradually lengthened.

Simultaneously with nitrites or digitalis, some sedative preparation should be administered, e. g.:

- R Heroinæ hydrochloridi, 0.02 gramme;
Syrupi aurantii florum, 30.00 grammes;
Aque destillate, q. s. ad150.00 grammes.
M. Sig.: Three to four tablespoonfuls daily.

The treatment during periods of freedom from paroxysms should include such measures as milk diet in alternation with a diet of milk and vegetables poor in salt; avoidance of physical and mental stress, and of stimulants; the securing of regular bowel movements, and the administration of potassium iodide for two weeks in every month. Along with the iodide there should be given twice daily one of the following cachets:

- R Theobromine,0.5 gramme;
Sodium benzoate,0.25 gramme.
M. Fiat in cachetam No. i.

One cachet may be taken in the morning on arising and the other at 4 p. m. During the two weeks in each month when the iodide and theobromine are not being taken, nitrites should be exhibited, as already described.

Treatment of Laryngitis.—Moure, in *Paris médical* for February 24, 1912, is credited with the following solution, to be used as a spray two or three times daily in cases of laryngitis associated with unpleasant dryness of the mucous membranes:

- R Sodii benzoatis, 8 grammes;
Sodii bromidi vel iodidi, 4 grammes;
Glycerini, 10 grammes;
Tincture encalypti, 10 grammes;
Aque destillate,450 grammes.
M. Fiat solutio.

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THE FIFTEENTH INTERNATIONAL CON-
GRESS ON HYGIENE AND
DEMOGRAPHY.

In consequence of an invitation issued by the United States and accepted by the Fourteenth International Congress, in session at Berlin, in September, 1907, the fifteenth congress will be held at Washington, D. C., from September 23d to 28th; of this congress the President of the United States will be honorary president. As acceptances have been received from thirty-two foreign countries and all the forty-eight States of the Union, its thoroughly representative character is manifest. The president is Dr. Henry P. Walcott, of Massachusetts, and the secretary general, Dr. John S. Fulton, of Maryland.

An exhibition, lasting from September 16th to October 4th, is one of the features of the congress and contains twelve groups, covering vital statistics, food, the hygiene of infancy and childhood and of exercise, industrial and occupational, State and municipal, traffic and transportation, military, naval, and tropical, and sex hygiene, as well as communicable diseases. Although any person who is interested in the study or practice of hygiene or demography may become a member of the congress, it is obviously of greatest interest to members of the medical profession, who, in the future, are most likely to be charged with the formulating and also with the execution of the projects of the congress

when enacted into laws. Realizing this fact, the NEW YORK MEDICAL JOURNAL will present in early issues a carefully compiled report of the work of those sections which more particularly concern our profession.

It is fitting that the fifteenth congress should meet in the National Capital, but it is to be regretted that, unlike the great countries of Europe, the metropolis of the United States is not also the capital. New York seems to be the ideal American city for an important gathering of this character, as it is the real centre of art, literature, and, it is fair to say, medicine, in this country. Notwithstanding its importance, however, and the pride with which it properly inspires Americans, it is not to them what, for example, London is to England, Paris to France, or Berlin to Germany, as it lacks unfortunately the superb National buildings of those capitals, as well as the National character possessed by Washington, a character essential to a place where our Government is to act as host.

The foreign delegations will doubtless visit New York on their way to or from the congress, and will find much to interest them in our hospitals, schools, factories, museums, etc.; they will particularly enjoy the characteristically American atmosphere after their experience of the qualities of Washington. Our capital is unique, not only among American cities, but among those of the modern world, and is comparable perhaps only to the Versailles of past generations.

A PROMISING TREATMENT OF CANCER.

The year 1912 has brought forward two important reports on the treatment of artificial malignant tumors in rodents based upon Ehrlich's theory of chemotherapeutics. We spoke of these articles editorially in our issues for January 20, 1912, and September 14, 1912. The authors of the articles upon which our remarks were based warned against false hopes; for it is a long step from curing an artificially produced cancer in an animal to successfully treating malignant tumor in man. It is therefore with great reserve that we give to-day a short synopsis of a report which is contained in the last two numbers of the *Münchener medizinische Wochenschrift*, in which the author, Dr. Adolf Zeller, states that he is able to report on fifty-seven patients whom he has treated for malignant cancer from 1895 to 1912. The article is introduced with brief comment by Professor Czerny, the well known cancer authority in Heidelberg. Doctor Czerny says that Doctor Zeller had presented about forty patients, of whom about two thirds showed smooth, healthy looking scars, and who, at present, could be designated as cured; one third of the patients

remained still under treatment. Of seventeen cases there were microscopical preparations. Some of the patients had been repeatedly operated upon by experienced surgeons. The majority of the cancers were superficial, malignant tumors of the skin, while a few of them presented the picture of deeply seated, infiltrated, malignant tumors, showing large loss of tissue on the ear, upper maxilla, lip, mamma, and vaginal region. There were no cases of a malignant growth of the mucous membrane, esophagus, stomach, intestines, or internal organs. Doctor Zeller remarks that his technique has been developed during seventeen years; there is nothing new about it, as he states. He used Batty's proposed "acidum silicicum," 0.06, given in powder form internally, several times daily, and the external use of an arsenic and red mercury sulphite paste proposed by Astley Cooper, Hutchinson, and Dupuytren. The author describes the small German town where he practises, as a quiet, undeveloped country place without modern improvements. His clientèle consists of farmers of adult age who are treated either at home or at the office, as no hospital exists. His technique is as follows: The tumor and the surrounding tissues are cleaned with benzine and the paste is then quickly applied, to be covered after it has become dry with collodion; should the tumors be large a careful bandage covers the field. The paste acts intensively upon the tumor, while normal tissue is very little if at all attacked. Internally the silicon salts are given in powder as mentioned above, and even after the tumor is healed, it is continued for a year. The author reported forty-four cures, ten cases still under treatment, and three deaths.

We give this report without comment, but wish to remind our readers of the hopes which followed Koch's invention of tuberculin, Ehrlich's production of salvarsan and neosalvarsan, expectations which soon were followed by disappointment. It took years to place tuberculin treatment upon a sane basis; it will take years before Ehrlich's method has been thoroughly tried and a conclusion reached; and the same must be said of Zeller's cancer treatment. Only careful, objective observation by many physicians, carried out over a number of years, will allow us to give judgment.

ABORTIVE TREATMENT OF TUBERCULOSIS.

Most of us, those at least whose span of life has been sufficiently prolonged, have once upon a time suffered from one or more infections and passed through periods of danger, characterized by symptoms corresponding in their form and intensity

with the location and seriousness of the morbid process, while exposing life in proportion as the resisting power of the body to infection was deficient. In so far as tuberculosis is concerned, Cruveilhier, Cornil, and Ranvier, and others among the older writers held that few persons escaped tuberculous infection; Naegeli found calcareous or fibrous masses indicative of healed tuberculous lesions in ninety-seven per cent. of five hundred random autopsies; Aupinel found them in every instance in a series of sixty autopsies in aged subjects, regardless also of the cause of death. Other observers have called attention to the same phenomenon. The temporary illness may be characterized as a "cold," or if of long duration as "chronic bronchitis"—the term usually employed by consumptives when they apply for treatment—or as a persistent lassitude and emaciation without a sign of pulmonary involvement and other conditions in which anemia and pallor are the predominant signs.

The suggestion this affords, were it carried into effect, is one which, as experience has shown, would result in the saving of a multitude of lives. We should not await the classic manifestations of tuberculosis to treat any condition which to any degree suggests the possible presence of this disease; we should, without mentioning the fact, consider the case as one in which its presence had already been verified. Examination of the sputum and the tuberculin tests are not to be depended on under these conditions any more than are the physical signs, which, indeed, may prove actually misleading by revealing simple catarrhal phenomena, though a tuberculous process, too incipient or too restricted to be detected by physical or even the tuberculin tests, lurk in the parenchyma. Nor do these methods of diagnosis avail in the pretuberculous stage, the opportunity of all opportunities for successful abortive measures. In so far as chronic bronchial disorders are concerned, this course is all the more warranted in that the treatment indicated—creosote or guaiacol carbonate (given during meals to prevent gastric disturbances), the iodides, the hypophosphites, nutritious food, out of door life, etc.—would prove effective should the actual condition present be not tuberculous.

Still more capable of concealing effectively a tuberculous infection are those conditions in which even cough is absent. The emaciated, weak, and pale girls so often met with in schools, factories, sweatshops, etc., and regarded as anemics—a diagnosis fully sustained by blood examinations—supply many victims to the white plague. Indeed, Grawitz, Rachford, Appelbaum, and other prominent clinicians have emphasized the fact that anemia and tuberculosis are often allied, the latter dis-

ease sometimes revealing its presence at first in no other way. Subnormal morning temperature, muscular denutrition, subsidence of body prominences in other than obese people, loss of muscular tonicity, relative smallness of the heart with deficient general nutrition, hypothermia, and low blood pressure have all been associated with incipient tuberculosis or the pretuberculous stage by authorities of the first order, including Potain, Leyden, Cornet, and Loomis. Even these cases, though showing no classic sign of tuberculosis, should be treated with this disease as the theoretical guide; regeneration of the blood elements, improvement of the general nutrition, and increase of the efficiency of the defensive mechanism being the main objects to be attained.

On the whole, tuberculosis readily yields to active measures which tend to enhance the efforts of Nature before the morbid process has been allowed to gain a foothold sufficient to elicit the classic symptoms. Were it possible to reach all cases at this stage, it would not take long to do away with man's greatest foe.

A MARINE HOSPITAL AT PANAMA.

The legislation referred to editorially in our issue for August 24th, increasing the salaries of Public Health Service officers, in no way changed the status of the marine hospitals operated by the service for the benefit of seamen of the American merchant marine. These hospitals are situated in the larger ports and inland waterway cities of the United States. They furnish medical relief to sailors on the great lakes, and such large rivers of the country as the Mississippi and its tributaries, as well as to sailors on ocean going vessels. Not only is hospital care given free, but a large outpatient service is maintained.

Relief stations of the Public Health Service are of four classes. First come the hospitals, among which is the marine hospital at Stapleton, Staten Island, for the port of New York, with its outpatient and receiving office at the Battery. Second class stations are under the command of a commissioned officer of the Public Health Service, but patients are provided for by contract with local hospitals, although they are under the professional care of the service officer. Third class stations are under the charge of contract surgeons, and the sick are cared for in local hospitals. In the fourth class are stations where arrangements are made with the local customs official to provide for sick and disabled seamen.

In addition to American merchant sailors, medical relief is furnished by the Public Health Service to

officers and crews of the Lighthouse Establishment, and of the Revenue Cutter Service, and United States Life Saving Service, also to seamen of the Mississippi River Commission and the engineering corps of the army. Other beneficiaries are the Coast and Geodetic Survey, and, on the payment of a certain small fixed fee, foreign sailors. In the fiscal year 1911, 52,209 sailors received treatment, of whom 15,444 received hospital care. The public health of Alaska and the Philippine Islands is under the control of this service. The Canal Zone quarantine is also administered by it.

This brief summary of the marine hospital system and of certain phases of the public health work of the service, suggests at once that the Public Health Service is peculiarly adapted to establish and operate a marine hospital at the Canal Zone. Such a hospital at the isthmus can be located either at Colon or at Panama or at a suitable altitude at some place in the interior, with receiving and outpatient stations at Colon and Panama.

The list of beneficiaries of United States marine hospitals, in addition to merchant seamen, shows how important such a relief station on the isthmus would be after the opening of the canal. Innumerable sound arguments favor such a procedure. At the canal will centre lines of traffic from all parts of the earth, as well as an ever increasing domestic merchant marine and American coastwise traffic. It is a strategic point for a marine hospital. Moreover, there will be urgent necessity for such an institution. The Public Health Service is fully equipped to undertake this enterprise, and is the logical and most desirable choice.

PERCUSSION OF THE LIVER.

Percussion of this organ is generally unsatisfactory on account of the interference from the intestines which may contain either solid fecal matter or gas. On the other hand palpation, which is the only trustworthy method, may also prove misleading when the organ is too painful to the touch, the abdominal muscles are unusually tense, or the walls covered with an excess of fat. In these cases, Orlovsky, of Kazan (*Roussky Vrach*, No. 20, 1912; *NEW YORK MEDICAL JOURNAL*, August 31, 1912), adopted Goldscheider's method of orthopercussion. This consists in the very lightest tapping, audible only when the ear is kept close to the field of percussion and the room is perfectly quiet. The percussion is carried out by using the proximal end of the left second digital phalanx as pleximeter and the end of the right index finger as plexor. The direction is from resonant to nonresonant areas, the examiner thus perceiving the disappearance of the slightest resonance. In an examination of 500 persons, the author found this method to yield exceptionally accurate results. He discovered further that, contrary to the accepted views, the percussion

note is affected by solid organs lying much deeper than six or seven centimetres. Thus, a prolapsed kidney will affect the accuracy of orthopercussion. Similarly a full colon or a prolapsed stomach will interfere with orthopercussion, and the interferences should be removed by appropriate measures, such as preliminary evacuation of the bowels, or changing the position of the patient.

THE INSTANTANEOUS STERILIZATION OF SMALL INSTRUMENTS.

Trétróp, of Antwerp, reported recently to the Société belge d'otologie, de rhinologie, et de laryngologie, according to *Presse médicale* for September 4, 1912, that he had found upon bacteriological research that a boiling mixture of opodeldoc with an equal quantity of water, sterilized almost instantly the small instruments used by laryngologists and specialists along similar lines, without attacking the edge. *Staphylococci*, *streptococci*, *pneumococci*, and *Bacilli pyocyaneus et coli* are unable to resist the solution. Opodeldoc, we need scarcely say, is the linimentum saponotocamphoratum of the National Formulary.

Medical Law.

V. RIGHTS AND LIABILITIES OF THIRD PARTIES.

In the case of Taylor vs. C. M. Robertson Co., 83 Atl. Rep. 534, the Supreme Court of Connecticut determined the question of liability of a corporation for services of a physician rendered to an injured employee upon somewhat different reasoning than that applied in similar cases heretofore referred to in the JOURNAL.

In this case the physician was summoned by a fellow workman of the victim. Within a few days after the accident, and while the plaintiff was attending the injured boy, a bookkeeper of defendant came to plaintiff to obtain information in regard to the extent of the boy's injuries, in order to make report to an insurance company, and during the interview told plaintiff that the defendant would be responsible for the payment of his services. The president of the defendant company knew of the injuries to the boy and that plaintiff was attending him professionally, and on several occasions during the time of the attendance talked with plaintiff about the boy's condition and the prospect of his recovery.

After plaintiff had completed his services for the boy he rendered his bill to the defendant company. The bill was sent by mail addressed to the company. After a few days plaintiff received in reply a communication written on defendant's letterhead which was as follows:

It would oblige us very much if you would render a detailed bill for medical attendance to Earl McDiarmid (the injured boy). If you can modify this bill in any way, it would be much appreciated, as it looks now as though we would be forced to stand the full charge ourselves. Thanking you in advance for the favor, we remain,

Yours truly,

THE C. M. ROBERTSON CO.,
J. E. Church

J. E. Church was the bookkeeper already referred to; he does not appear to have possessed any authority to bind the corporation for medical services to its employees. The trial court, however, finds that Church represented to plaintiff that defendant would be responsible for his services; that this representation was known to the officers of defendant company; that the bill mailed by plaintiff addressed to defendant, was received by the officer in charge of the company; that the reply letter was written by Church by direction and authority of such officer, and that it appeared from the evidence that the plaintiff rendered the services in question under circumstances which justified him in believing that the defendant would pay for the same, and that the officers of the defendant had knowledge of those circumstances. Judgment, accordingly, was rendered for the plaintiff.

Mr. Justice Princtice, of the Supreme Court, in commenting on the corrections of the findings of the trial court, said:

The foundation of defendant's liability is not to be found in any express promise, or direct assumption of obligation. The court has found none, and has carefully avoided resting its judgment upon one. What the court has found, and what it made the basis of its judgment, is certain knowledge and conduct on the part of the defendant leading to the ultimate conclusion that it had assumed as its own the assurance of its responsibility for the care of its servant given by its bookkeeper to the plaintiff, and upon the faith of which he acted.

The cases heretofore reported in the JOURNAL appear in the issues for May 4, 1912, and June 8, 1912, in which cases the test applied was whether or not there was authority in the agent who originally employed the physician. In these cases it was held that the defendant was not liable, excepting for a part of one of the claims, consisting of emergency work.

News Items.

The Rockefeller Institute for Medical Research.—The Board of Scientific directors of this institute announces the following appointments: Michael Heidelberger, fellow in chemistry, Linda Bartels Lange, fellow in pathology, Florentin Medigreceanu, assistant resident physician.

A Merger of Medical Colleges Planned.—An effort is being made to amalgamate the School of Medicine of the University of Maryland, the Baltimore Medical College, and the College of Physicians and Surgeons, of Baltimore, under the name of the University of Maryland. While it is not expected that a combination of these schools will be effected to be operative during the present session, it is hoped that the consent of the boards of trustees of the three institutions will be obtained to a consolidation to go into effect at the end of the academic year.

Reception Given to German Physicians.—A reception was held on the evening of September 18th, at the German Liederkranz, New York, in honor of the German physicians at present visiting New York, some of whom are delegates to the Congress of Hygiene and Demography at Washington, others being members of the German Society for Travel Study. Dr. Wolff Freudenthal, of New York, acted as toastmaster, introducing Doctor Pfister, president of the German Medical Society of New York, Mayor Gaynor, Dr. John A. Wyeth, Professor W. His, of Berlin, who made a lengthy address describing the development of medicine here and abroad, Professor Garner, of Jena, who spoke happily of the "rabbit doctor," and Professor Schattenfroth, of Vienna, who described the development of State hygiene in Austria. About 500 physicians with their wives were present.

The Outbreak of Poliomyelitis in Buffalo.—During the week ending August 24, 1912, there were reported by the city health authorities 34 cases of poliomyelitis, with 3 deaths, and the following week, 26 cases with 2 deaths. The total number of deaths up to August 31st numbered 23. The slight decrease in the number of cases reported gives some ground for the expectation that the epidemic will soon be under control, but it is the opinion of those who are investigating the outbreak that no prediction to this effect is warranted as yet. The commissioner of health of the State of New York reported, August 29th, 9 additional cases in the vicinity of Buffalo, and 6 cases have been reported in the neighboring city of Jamestown.

A Woman Honored.—N. O. Ziber-Shumova, who was assistant to the late Professor Nentsky, and for twenty years assistant in the chemical department of the Institute of Experimental Medicine in St. Petersburg, was recently appointed directress of the chemical department of the institute with a full position on the staff. This was brought about only by special permission of the Czar, as the rules of the institution do not admit women to the staff. It is noteworthy that two of the greatest women scientists in Europe are Russian—Madame Curie, of radium fame, and Ziber-Shumova, the great chemist. Both not only achieved distinction, but opened to women the doors of university faculties.

Trachoma.—Officers of the United States Public Health Service have found that trachoma is prevalent in certain localities in Kentucky and on Indian reservations in Minnesota. The disease is common in southern Europe and in parts of Asia, and recent reports indicate that it is also present in Chile, where it appears to be spreading. Many cases have been noted in Valparaiso, but as the disease is most prevalent in localities where the population in general is of the poorer class and hygienic conditions are defective, the disease has undoubtedly been imported into Chile by immigrants coming from localities where it is endemic, as there is no inspection of immigrants at Chilean ports. Immigrants suffering from trachoma are not allowed to enter the United States.

Medical Society of the Missouri Valley.—This society held its twenty-fifth annual meeting in Council Bluffs, Iowa, on September 5th and 6th, under the presidency of Dr. J. M. Bell, of St. Joseph, Mo., over one hundred physicians being present. An interesting feature of the excellent programme was a symposium on anesthesia, in which surgical, obstetrical, spinal, and local anesthesia and the psychoses of anesthesia were discussed. The Oration in Surgery was delivered by Dr. Henry T. Byford, of Chicago, and the Oration in Medicine by Dr. W. O. Bridges, of Omaha. At the close of Friday's session, Dr. Daniel Morton, of St. Joseph, Mo., made a plea for the establishment of research laboratories in the cities of the Missouri Valley, and a committee of five was appointed to investigate the feasibility of such a project. Kansas City, Mo., was selected as the next meeting place, and officers for the ensuing year were elected as follows: President, Dr. H. B. Jennings, of Council Bluffs; first vice-president, Dr. M. L. Hildreth, of Lyons, Neb.; second vice-president, Dr. B. T. Quigley, of Mound City, Mo.; secretary, Dr. Charles Wood Fasset, of St. Joseph, Mo. (re-elected); treasurer, Dr. Oliver C. Gebhart, of St. Joseph, Mo. (re-elected).

A Reunion of the Medical Alumni of Dartmouth College, upon the occasion of the 115th anniversary of the foundation of the medical school, was held in Hanover, N. H., September 11th to 13th. Over 125 graduates returned to their alma mater. There were few set exercises, a dance, alumni meeting, and banquet being the most formal affairs. At the banquet, presided over by Dean John M. Gile, '91, speeches were made by President Nichols, Professor Emeritus Granville P. Conn, '56, Professor E. J. Bartlett, '72, Professor C. E. de Nancrède, of the University of Michigan, Dr. H. Sheridan Baketei, '95, of New York, Dr. A. P. Voislowsky, '98, of New York, and Dr. F. W. Brown, '98, of Providence. At the inspection of Mary Hitchcock Memorial Hospital, erected through the munificence of the late Hiram Hitchcock, of New York, it was announced that a wing to contain forty-eight beds would be erected at once, giving the institution a capacity of over 100 beds. Dartmouth already demands two years of college work of the matriculates to its medical school, and plans are now afoot to make the requirements even more rigid. The school is the fourth oldest in the United States.

Changes in the Medical Faculty of the Lincoln Memorial University.—A few changes are noted in the faculty of the medical department of Lincoln Memorial University, Knoxville, Tenn., for the coming term. Dr. W. T. De Sautele, of the University of Wisconsin, will be professor of histology, bacteriology, and pathology, succeeding Dr. Carroll G. Bull. Dr. O. W. Hill, of Knoxville, has accepted the chair of physiology, while Dr. P. E. McNabb will have charge of the laboratories of that department. Judge H. H. Ingersoll was offered the chair of medical jurisprudence, but his acceptance has not yet been announced.

Meetings of State Medical Societies to be Held in October.—The following State medical societies will meet in annual session next month: Delaware State Medical Society, at Wilmington, on October 8th, Dr. Frank L. Springer, of Newport, president; Kentucky State Medical Association, at Louisville, on October 12th, Dr. J. G. Carpenter, of Stanford, president; Utah State Medical Association, at Ogden, on October 1st and 2d, Dr. Robert W. Fisher, of Salt Lake City, president; Vermont State Medical Society, at Montpelier, on October 10th and 11th, Dr. F. T. Kidder, of Woodstock, president; Medical Society of Virginia, at Norfolk, October 22d to 25th, Dr. Hugh M. Taylor, of Richmond, president; State Medical Society of Wisconsin, at Milwaukee, Dr. A. J. Pater, of Milwaukee, president.

Open Air Schools Are Increasing in Number.—With the opening of the fall school term, over 200 open air schools and fresh air classes for tuberculous and anemic children, and also for all children in certain rooms and grades, will be in operation in various parts of the United States, according to a statement by the National Association for the Study and Prevention of Tuberculosis. All these schools have been established since January, 1907, when the first institution was opened in Providence, R. I. January 1, 1910, there were only 13 open air schools in this country, and a year later the number had increased only to 29. Thus, the real growth in this movement has been with the last two years.

Massachusetts now leads the States with 86 fresh air schools and classes for tuberculous, anemic, and other school children, Boston alone having over 80. New York comes next with 29, and Ohio is third with 21. Open air schools have now been established in nearly 50 cities in 19 different States.

Based on figures of population and mortality furnished by the United States Bureau of the Census, it is estimated that not less than 100,000 children now in school in the United States will die of tuberculosis before they are eighteen years of age, or that about 7,000 of these children die annually from this one disease.

Personal.—Dr. Harvey Cushing, of Baltimore, officially severed his connection with Johns Hopkins University on September 5th, and on the same date went to Boston where he will assume his new duties as professor of surgery at the Harvard Medical School at the opening of the term. He will also be chief surgeon of the new Peter Bent Brigham Hospital. Doctor Cushing was associate professor of surgery at Johns Hopkins University for ten years, and no announcement has yet been made of his successor.

Dr. George E. Teehan, formerly of Worcester, Mass., has been appointed medical inspector of the public schools of Providence, R. I.

Dr. James Edward Newcomb, who died on August 27th, left to Dr. Henry L. Swain, of New Haven, president of the Connecticut Medical Association, all his books on rhinology and laryngology, and the rest of his medical library to the New York Academy of Medicine.

Dr. E. A. Peterson was recently appointed medical director of the schools of Cleveland, Ohio, to succeed Dr. Harris G. Sherman.

Dr. J. M. Baldy, of Philadelphia, has been reappointed head of the State Board of Medical Education and Licensure, to serve for three years, and Dr. D. P. Maddux, of Chester, a homeopath, has also been reappointed a member of the board. Dr. William Alvah Stewart, of Pittsburgh, has been appointed a member to succeed the late Dr. C. P. Seip.

Dr. Frederick J. Birchard, formerly assistant in chemistry at the Rockefeller Institute, has been appointed a research chemist in the Dairy Division of the Bureau of Animal Industry, Washington, D. C.

Pith of Progressive Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL

September 5, 1912.

1. P. C. BARTLETT and C. V. MURPHY: Use of Lactic Acid Source: Milk and Lactic Acid Bacilli in Pulmonary Tuberculosis.
2. ARTHUR L. CRUTE: Diverticulum of Bladder Treated by Operation.
3. ABNER POST: Present Status of Salvarsan.
4. GEORGE G. SMITH: Orchitis Due to Mumps Treated by Operation.

1. **Lactic Acid Soured Milk and Lactic Acid Bacilli in Pulmonary Tuberculosis.**—Bartlett and Murphy, after several years of observation and experience, feel that somewhere between the extreme assertion of Metchnikoff and his followers and the flat denial of the ultrascientific there is a definite and well established field of usefulness for this remedy. Hence they do not support the extravagant assertions that have led to its exploitation by the milk dealer and the soda water fountain, but give a simple presentation of certain types of cases in which it has proved of value. This includes the method of use, the means of preparing it in hospital practice, a brief consideration of the particular ferment employed, and remarks on other lactic acid cultures. The factors that render impracticable the preparation of large quantities of buttermilk under home conditions are given as: 1. The difficulty in obtaining a reliable strain to be used as a starter; 2, the fact that certain undesirable organisms, even lactic acid producers, which give rise to an unsightly buttermilk of unpleasant taste, may, under favorable conditions, multiply at the expense of the bacteria introduced; 3, the difficulty of maintaining a constant temperature of about 70° F.; 4, the fact that when the Bulgarian bacillus is used, a temperature close to 98.6° is necessary, and that even when the milk is thus successfully soured the resulting excessive acidity and the almost syrupy, sticky consistency of the milk is obnoxious to most patients; 5, the danger of infection of the milk with pathogenic bacteria, though slight, is by no means inconsiderable.

3. **Salvarsan.**—Post summarizes the present status of salvarsan in the following words: It is the most rapid and powerful antisyphilitic known. It is not without its dangers, which are sufficient to induce caution in its use, but not its abandonment. It is not yet possible to promise absolutely a cure. One should not urge its use upon those who are impressed by its possible ill effects. It should be used in conjunction with mercury in all cases in which a diagnosis can be made before general symptoms appear. It should be used in all cases in which patients are not progressing well under ordinary treatment in any stage. It should be used in all cases in which patients are an especial danger to the community. It should not be used in maximum doses, but rather in repeated medium doses and in exceptional cases in repeated minimum doses.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

September 7, 1912.

1. PHILIP MARVELL: Scientific Employment of Physical Therapeutics.
2. JOSEPH M. FLINT: Physiological Basis of Thoracic Surgery.
3. A. L. SROOG: Acute Polio-myelitis, Transverse Myelitis, and Robert N. Wiltson: Spinal Cord in Pernicious Anemia. Lettering Case of Family Involvement.
5. HAROLD A. MILLER: Difficult and Dangerous Labors, Select Method of Delivery.
6. C. A. STEINWAGEN: Cesarean Section.

7. ALICE HAMILTON: Industrial Lead Poisoning in Light of Recent Studies.
8. FRANCIS HARRITZ: Epidemic Polio-myelitis in Norway; Etiology and Possibilities of Prevention.
9. M. NEUDORFER: Etiology of Polio-myelitis.
10. OTTO P. GEIER: Medical Sociology in Civic Betterment.
11. MORRIS FISHER: Method of Selection of Donor for Blood Transfusion.
12. HENRY HORN: Palliative Treatment of Terminal Laryngeal Tuberculosis.
13. E. C. ROSENOW: Immunization in Pneumococcus Infections.
14. J. N. FORCE: Home-Made Antiseptic Thermometer.

2. **Physiological Basis of Thoracic Surgery.**—Flint concludes that the reactions of the medullary centres to operative traumatism should make us cautious in the treatment of the parietal pleura, particularly in tearing it at the angles of the intercostal wound by the injudicious application of the rib spreader. Free handling of the lungs is well tolerated, but any manipulation that exerts traction on the great vessels and bronchi at the root of the lung should be reduced to a minimum. The Sauerbruch method of temporary hemostasis in heart suture produces too serious a fall in blood pressure to be safe, except where other means have failed. Mechanical stimulation of the heart, either directly, or indirectly through the pericardium during suture, should be avoided if possible. Avoid also unnecessary trauma which might tend to excessive reduction of the blood pressure, in packing off the lungs to obtain a view of the other thoracic viscera. These are the stimuli which have produced the most serious reactions.

4. **The Spinal Cord in Pernicious Anemia.**—Willson reports an interesting case of this disease with family involvement. In true pernicious anemia changes exist in the spinal cord and perhaps in the brain. Many cases that fail to be promptly recognized, owing to nervous symptoms, would clear up at once if this fact was remembered. Many investigators have thrown out the hint that both the clinical picture and the cord degeneration are secondary to and the direct result of a definite toxemia, but the toxine and its method of action are unknown, and its avenue of approach and of attack are unsolved problems. In the case reported, the lumbar portion of the cord suffered most. The pathological process consists of a degenerative vacuolization of the nerve cells, accompanied, or rather succeeded by a replacement gliosis. The history of the case, and the microscopic findings thereof, seem to indicate the strong probability of the intestinal origin of not only pernicious anemia, but of the combined spinal pseudosclerosis. While the relation of true tabes dorsalis to syphilis is well understood, the effect of syphilis through the gastrointestinal tract, and its influence on the blood and on the spinal cord through a gastrointestinal auto-toxemia, have not been thoroughly considered, and this theory is offered by reason of deductions drawn from a study of the case, in which from childhood signs of gastrointestinal disability were present, and which was almost certainly one of pernicious anemia perhaps due to hereditary syphilis. The somewhat similar cases in two of the patient's maternal aunts were closely related and probably had the same etiology.

9. **A Contribution to the Etiology of Polio-myelitis.**—See this JOURNAL for June 8th, page 1224.

10. **Medical Sociology in Civic Betterment.**—See this JOURNAL for June 15th, page 1205.

11. Method of Selection of Donor for Blood Transfusion.—Fishbein calls attention to the fact that the possibility of isoagglutination makes the choice of a donor for blood transfusion an important affair. Individuals fall into definite groups as regards this phenomenon. Only one belonging to the same group as the patient who is to be transfused should be selected as donor. Transfusion with the blood of a donor whose serum will agglutinate the patient's corpuscles, or whose corpuscles are agglutinated by the patient's serum, is obviously unsafe, still more so when both reactions occur. The writer gives the technique for carrying out such tests. In practically all instances isoagglutination, when present, becomes visible microscopically after half an hour at ordinary temperature; microscopical examination is also easily made. The writer's method is of great advantage in testing for isoagglutination in large groups (20). The technique is simple and easily carried out.

12. Palliative Treatment of Terminal Laryngeal Tuberculosis.—Horn considers this mode of treatment a thankful one. The continuous and severe pains in the larynx, not only during deglutition, but when the larynx is at rest, may be relieved by local applications of cocaine, frequent insufflations of propæsin, anæsthesin, or orthoform, or local canterization with lactic acid. The writer proposes to produce a form of permanent anæsthesia by injecting the superior laryngeal nerve with alcohol, approaching it in the region of the ramus internus. Failures are mostly due to faulty technique. The patient should complain of a sharp pain, due to the rubbing of the point of the needle against the nerve. Even if the nerve is not located, the alcohol injection should be used, as some anæsthesia will be caused by the perineural infiltration.

13. Immunization in Pneumococcus Infections.—See this JOURNAL for June 8th, page 1227.

MEDICAL RECORD

September 7, 1912.

1. WALTER W. GRIFFIN: False Gigantism, Complicated by Traumatic Ostoses.
2. FRIEDRICH L. HOFFMANN: Research Work in Life Insurance Medicine.
3. C. L. GIBSON: Accessory Pancreas in Gastrointestinal Tract.
4. MARTIN E. RUEFFEL: Treatment of Hyperacidity, French Viewpoint.
5. GUSTAV F. BOEHME, JR.: Enlargement of Mediastinal Glands.
6. BENJ. F. OCHS: Plea for More Careful Examination in Dermatology.

1. False Gigantism, Complicated by Traumatic Ostoses.—Griffin explains that true gigantism consists of a local overgrowth in the limbs, in which a hypertrophy of all the tissues takes place. The hypertrophy may, however, affect but one form of tissue (adipose tissue, bloodvessels, lymphatics, or the bone producing) what is called false gigantism. The more extensive types where the overgrowth reaches to the knee or hip (elbow or shoulder) occur less frequently than the types involving one or more toes, or fingers, or the foot or hand. In the case reported the hypertrophy involved the bones rather than the soft parts, and x ray plates of the skull showed that the pituitary fossa was not enlarged. Two bony tumors of the tibia were evidently subperiosteal effusions of blood which had become organized and formed veritable traumatic ostoses.

2. Research Work in Life Insurance Medicine.

—Hoffmann concludes that the true cause of premature death is largely erroneous habit of life; that the proportionate mortality from nervous and urinary diseases is so markedly excessive among persons of heavy weight is decidedly suggestive. The same may be said of rheumatism and diabetes. Few persons take the diet best suited to their requirements. Sir Hermann Weber's rule advises "moderation in food, drink, and all other physical pleasures. Fresh air at all times, regular daily exercise in all weathers, and a daily bath with a good rubbing down are enjoined. Regular work and the cultivation of an optimistic disposition should be joined with an avoidance of alcohol, other stimulant, and narcotic drugs, and a resolute effort of will to preserve health and life." Life insurance medicine of to-day includes, not only risk selection, but also the conservation of life in the individual and the masses, and the companies now find it to their advantage to publish pertinent suggestions touching the preservation of life and health of their policy holders. Some fraternal societies have established institutions for treating those of their members who are suffering from wasting diseases. The writer concludes that the function of general or even experimental research in the field of life insurance medicine has become a duty, the importance of which he has tried to emphasize.

3. Accessory Pancreas in the Gastrointestinal Tract.—Gibson, in reporting a case of aberrant pancreas, and quoting one reported by Reynier and Masson, and a third by Alexis Thomson, concludes that from an embryonic standpoint diverticula due to accessory pancreatic islets should be limited to the small intestine. In the writer's case it was situated in the stomach wall, and was reported by one pathologist as an adenocarcinoma. In Reynier and Masson's case an aberrant pancreatic lobule was found within the pylorus, blocking its lumen, while in Thomson's case it was situated in the lower ileum, about eighteen inches from the ileocecal valve, where it caused symptoms simulating those of acute appendicitis.

5. Enlargement of Mediastinal Glands.—Boehme reports a case which, beside the chronic conditions, presented the following symptom complex: A history of lues, a positive Noguchi test, hoarse voice, dyspnea, paralysis of vocal cords, area of dullness just above the cardiac area, unequal pupils, and reaction to antisiphilic treatment. These symptoms naturally suggest the presence of a mass pressing upon the recurrent laryngeal nerves and producing the pressure symptoms observed. Ruling out aneurysm of the aorta from a lack of its pathognomonic symptoms, the writer diagnoses the condition as one of syphilitic hypertrophy of the middle and anterior groups of the mediastinal glands.

6. Plea for a More Careful Examination in Dermatology.—Ochs emphasizes the importance of entirely exposing every patient that presents himself for the first time, for the purpose of thorough examination, and such examination should be "from head to foot." In this way only may serious dermatological lesions be discovered when superficial examination would reveal a very trifling lesion and the major affection would be missed.

BRITISH MEDICAL JOURNAL

August 31, 1912.

- 1 OTTO MAY: Functional and Histological Effects of Endoneural and Endoganglionic Injections of Alcohol.
- 2 G. L. CHEATLE: Gray Hair Associated with Nerve Lesions.
- 3 I. G. GASSER: Treatment of Tabetic Ataxia.
- 4 W. YORKE and B. BLACKLOCK: Morphology of *Trypanosoma equiperdum*.

1. **Endoneural Injections of Alcohol.**—May has conducted a series of experiments on cats to determine the effects of the injection of alcohol in different strengths into nerves and ganglia. Three cats were successfully injected in one infraorbital nerve, the other being used as a control. Nineteen, twenty, and twenty-one days after the injections the animals were killed, and in each case there was found to be more or less extensive destruction of the fibres of the injected nerves. In one, in which the injection was made by the open method, that is, after exposure of the nerve, the degeneration was complete. In the other two, in which the injection was made into the infraorbital foramen through the intact skin, the destruction, though not complete, was very considerable. In all the cases there had been a very extensive production of new fibrous tissue. In all three cats the Gasserian ganglion showed chromatolysis in some groups of cells, but no sign of actual cell death. There was no change in the proximal roots of the trigeminal nerve, either extracerebral or intracerebral. There is, therefore, no ascending degeneration or nerve cell necrosis as the result of endoneural injections of alcohol. The resulting conditions are comparatively favorable to regeneration, and this chemical section of the nerve is probably followed more quickly by regeneration than is mechanical section, or resection of a part of a nerve. Injections into the Gasserian ganglia of three cats produced considerable degeneration of the middle division in two, and of the middle and inferior in the other. In each case a very large number of cells remained histologically normal. A striking feature in the results was the extensive degeneration found in the spinal root of the fifth nerve. From previous considerations the only conclusion is that the alcohol must have passed centrally and reached the proximal root without having actually infiltrated the whole ganglion. This was confirmed by the results of an experiment upon a goat, where the course of the alcohol could be more accurately traced. It is contended that fibres in the central nervous system do not undergo complete regeneration. If this is true of the central root of this nerve, then from the therapeutic point of view a complete chemical section of the trigeminal nerve proximal to its ganglion should be equivalent to resection of the ganglion. Injection of alcohol into mixed motor and sensory nerves produced results identical with those following mechanical section. It is important to note that recovery can ensue fairly rapidly, more so than after mechanical section. Such recovery was apparently complete in one cat at the end of eighty-eight days. There seems to be no danger of permanent paralysis from this treatment, though excessive production of fibrous tissue in response to the irritation of the alcohol may delay the progress of regeneration very considerably.

2. **Gray Hair and Nerve Lesions.**—Cheatle believes that there is a large group of cases in which gray hair is acquired in association with nerve le-

sions, and therefore probably is connected with these changes. He reports two cases to illustrate his contention. His endeavor is to show that in such cases there is an epithelial change which takes place *pari passu* with the change in the nervous system, and which is probably due to it. He remarks that although grayness of the hair is in itself an unimportant epithelial change, it appears at a time of life common to another, and important epithelial change—namely, cancer. The genesis and etiology of an unimportant change in a tissue may illuminate the genesis and etiology of an important change in the same tissue. Though grayness of hair may be said to be a degenerative change, and cancer a proliferative one, the proliferative change in cancer would hardly be considered an object lesson in regeneration; its products are nearer to degeneration products so far as size, shape, and function of the cells are concerned.

4. **Morphology of *Trypanosoma equiperdum*.**—Yorke and Blacklock have found a strain of these parasites which, in guineapigs and white rats, showed a small number of very short stumpy forms in which the nucleus was found posterior to the centre. Similar forms of parasite have been found by the authors in guineapigs infected with dourine parasites.

PROCEEDINGS OF THE ROYAL SOCIETY.

July 25, 1912.

1. MARIE C. STOKES: Petrifications of Earliest European Angiosperms.
2. T. GRAHAM BROWN and C. S. SHERINGTON: Instability of Cerebral Point.
3. T. GRAHAM BROWN: Factors in Rhythmic Activity of Nervous System.
4. ALEXANDER FORBES: Reflex Rhythm Induced by Concurrent Excitation and Inhibition.
5. H. L. DUKE: Antelope as Reservoir for *Trypanosoma gambiense*.
6. LEONARD HILL and MARTIN FLACK: Relation between Secretory and Capillary Pressure. I. Salivary Secretion.
7. E. K. MARTIN: Effects of Ultraviolet Rays upon Eye.

5. **Antelope as Reservoir for Trypanosomes.**—Duke, studying the problem of the prolonged infectivity of *Glossina palpalis* (tsetse fly) along the shore of the Victoria Nyanza, found that the antelope may remain capable of infecting the fly with *Trypanosoma gambiense* for at least twenty-two months after their original infection.

7. **Effects of Ultraviolet Rays upon the Eye.**—Martin investigated experimentally the etiological influence of the mercury vapor lamp in glass worker's cataract. Single, high intensity exposures of the eyes of rabbits to the light caused prompt swelling and nuclear changes in the cells of the anterior lens capsule, followed by marked inflammatory changes in the conjunctiva, cornea, and iris. Other rabbits exposed to the light for three hours every two weeks at a distance of four inches, for several months, showed chronic conjunctivitis with ectropion and dense corneal opacity; rabbits exposed for shorter periods or at greater distances showed merely chronic conjunctivitis, with or without slight corneal opacity.

LYON MÉDICAL

August 4, 1912.

- MICHEL GANOUPE: Prehistoric Bone Syphilis.
- August 11, 1912.
2. JABOULAY: Sarcosporidian Origin of Osteomalacia.
3. L. BÉZEL: Pathology of Certain Chronic Neuritis. Affections without Apparent Lesions (To be continued).

2. **Sarcosporidian Origin of Osteomalacia.**—Jaboulay found in the ribs of a man of forty-eight years, who had succumbed to osteomalacia, cells

closely resembling those of the epithelioid sheath of sarcosporidia which develop in the esophagus of the goat or sheep. He is disposed to class osteomalacia as an infectious disease due to sarcosporidia. These organisms, with their varying forms and groupings, produce the bony tumors and so called "spontaneous" fractures which precede diffuse osteomalacia. In the treatment the use of the same remedies as are employed in cancer and protozoal infections is indicated.

PRESSE MÉDICALE

August 21, 1912.

1. ALEXIS CARREL: Life of Tissues in *Vitro*.
2. CAMILLE LIAZ: So Called Physiological Jugular Pulse.
3. C. LEVADITI: Recent Work on Etiology of Scarletina.
4. RAOUL DUPUY: Backward Children.
5. ROBERT DANIS: Causes of Failure in Vascular Surgery.
6. R. BERNARD: Immediate Therapeutic Results of Artificial Pneumothorax.

3. Etiology of Scarletina.—Levaditi has found that inoculation with scarlatin virus of the lower monkeys, especially the anthropoids, gives rise to a morbid syndrome of remarkable similarity to human scarlatina. The lower monkeys are not so susceptible to the microbe, although the anthropoids are more so. The virus seems to exist in the tongue and tonsils, the blood, the lymphatic ganglions, and the pericardial fluid. Not only is its nature unknown, but also its portal of entry and elimination. Levaditi promises, however, early solution of these difficulties.

4. Backward Children.—Dupuy says the treatment of these children is not limited to thyroid substance and bromides; the latter, indeed, are dangerous to the young. The digestive system should be first put in order, adenoids removed, tuberculosis and syphilis eliminated. Then come bathing, tonics internally, massage, gymnastics, full diet without too much meat or game. Barley water is advised as a drink. Calcium, potassium, sodium, magnesium, iron, in the form of phosphates are indicated. Finally comes opotherapy, in the form of thyroid extract, "the sun of the organism." Hypophysis, suprarenal, and testicle extract may also be given; the two former are hypertensive, the last hypotensive. These are best given hypodermically, while beef marrow is administered at the same time internally.

SEMAINE MÉDICALE

August 28, 1912.

F. FULD: New Medicinal Treatment of Diarrhea.

Diarrhea.—Fuld reviews the classical treatment of diarrhea, viz., speedy emptying of the bowel, with subsequent low diet. As patients often do not consult the physician till they have exhausted the popular remedies at hand, they are weak and demand "something strengthening"; if the physician ignores this request, the patient will secure some patent tonic on his own responsibility. Opium, fortunately, does not long control diarrhea, so a habit is not likely to be acquired by the victim. Cocaine and codeine have solved the diarrhea problem for Fuld in many cases; before each meal he administers ten drops of cocaine hydrochloride in a three per cent. solution, along with codeine phosphate in equal strength dissolved in peppermint water. For a child a one per cent. solution of these

drugs is enough, and as many drops at a dose as the child is years of age. Diet, according to Fuld, does not cause relapses after this treatment. Where the rectal mucosa is inflamed suppositories containing minute doses of morphine or opium are serviceable, but Fuld recommends a trial of cocaine here also. Fuld is doubtful if the codeine is essential to the treatment, but he continues to exhibit it along with the cocaine.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT

July 2, 1912.

1. BURROWS: Rhythmic Contraction of Isolated Muscles of Heart outside Organism.
2. INGEBRIGTSEN: Importance of Isoagglutinin for Homoplastically Transplanted Artery.
3. BIERME: Influence of the Tenth Nerve upon Large Intestine.
4. UMBRO: Pathology of Banti's Disease of Spleen.
5. PRUSSIAN: Case of Anemia splenica of Adults Treated with Salvarsan.
6. VALERIE: Splenemic Syndrome and Salvarsan Treatment.
7. HANSEN: Serodiagnosis of Leptospirosis Infection.
8. BOINSTEIN: Clinical Method for Estimation of Percol of Circulation.
9. HACKENBROTH: Ambulatory Treatment of Fractures with Traction Pins.
10. VIEHLE: Tendon and Nerve Operations in Spastic Paralysis.
11. MYERS: Benedict's Test for Sugar.
12. SOLEJENSKY: History and Etiology of Multiple Symmetrical Lipomatosis.
13. BILAL-HASSAN and HARTTZ: Sarcoma of Humerus Treated with Röntgen Ray.
14. GERMAN: Interesting Case of Tetanus.
15. STESS: New Pocket Case for Hematological Examinations.
16. OTTELL: Treatment of Anomalies of Carriage.
17. EVERSHUCH: Ludwig Bach.
18. SCHULTZ: Iron Content in Human and Cow Milk.
19. KIDDER: Early Operation in Baselow's Disease.
20. KÄMMERER: Diagnostic Intracutaneous Reactions with Extract of Spirochetes.
21. SEIBER: Anaphylactic Reaction of Lung.
22. BAEDLERER: Relation between Lung and Genitals of Tuberculous Women.
23. STRAUB: Narcophine, Rational Opium Preparation.
24. ZIEBER: Narcophine, New Substitute for Morphine.
25. SCHUMPER: Use of Narcophine in Gynecology.
26. SCHMIDT: Effect of Opium.
27. MÜLLER: Therapeutical Experience from One Hundred Malignant New Formations Treated with Combination of Röntgen Rays and High Frequency Current Respectively, Diathermy.
28. PEST: Some Remarkable Cases from Dissecting Room.
29. BOJERMANN: Unaffected by Effects of Injections with Hormonal and Pruthin.
30. HANSEL: Elastic Bandage in Treatment of Mobile Scoliosis.
31. KROMAYER: Indication of Quartz Lamp for Treatment of Skin Disease.
32. WEIL: Ergotin and Caffeine in Treatment of Myocarditis, Arteriosclerosis, and Neurosis of Heart.
33. LIEPMANN: Eclampsia Poison in Placenta.

July 16, 1912.

34. GOENEL: Reversal of Blood Circulation.
35. FORSELL: Relation of Shapes of Human Stomach in Röntgen Pictures to Muscular Architecture of Stomach Wall.
36. ALBRECHT: Antiperistalsis in Large Intestine in Severe Obstruction.
37. WEIL: Estimation of Stomach Contents through Expression Method and Radiological Control.
38. RUGER: Treatment of Gynecological Diseases of Skin with Röntgen Rays.
39. BRANDS: Permanent Results of Treatment of Fistula with Beck's Bismuth Salve and Experiments by Substituting Bismuth Subnitrate.
40. HAMMERL: Use of Heat Produced by Dissolving Lime for Room Disinfection with Formaldehyde.
41. SICK: Surgical Prophylaxis of Acute Coryza with Salvarsan.
42. IVERSEN and FISHBEIN: Neosalvarsan in Tertiary Malaria.
43. GREENBERG: Eight Cases Treated with Neosalvarsan (1911).
44. ENERSEK: Technique of Clinical Estimation of Blood Pressure.
45. POEL: Etiology of Scabies.
46. ERNST: Percussion Hammer (with Meter) and Gauge of Sensibility.
47. KATZ: Apparatus for Making Sterile Distilled Water for Salvarsan Solution.
48. KLEINBERGER: Incurable by Effects after Intramuscular Injection of Hormonal.
49. KURSCHMANN: Anemia splenica of Adults Treated with Salvarsan.
50. WOLFF: Investigations into Wassermann Reaction in Cadavers.
51. ZIEGLER: Idiocynergasy to Salvarsan: Are Vaccinations with Salvarsan Solutions Useful to Diagnosticate Existing Idiocynergasy?
52. DRIVFUS: Importance of Modern Methods for Examination and Treatment for Decision of Isolated Disturbances of the Pupils Resulting from Syphilis.
53. COSARICI and TROCH: Method of Demonstrating Diptheria Bacilli.
54. ZARN: Further Experiences with Compilation Method of Calcium Chloride for Tubercle Bacilli.

55. SCHARFF: Urethrothermic Therapeutics.
56. KOBELT: Treatment of Stricture of Urethra with Bougies Producing Hyperemia.
57. JOSEPH: Palliative Treatment of Prostatic Hypertrophy.
58. HOLST: Röntgen Ray Inspection of Apices of Lungs.
59. JASCHKE: Pituitrin as Postoperative Tonic with Special Reference to Function of Bladder.
60. THORNER: Comparative Microscope (*Vergleichsmikroskop*).
61. SILBERSTEIN: Acetonemia in Children.
62. WYSTENBERG: Remission after Salvarsan Treatment.
63. HIRSCH: Two Deaths after Salvarsan.
64. HAMMER: Death after Salvarsan.
65. ZIEGENSPECK: Acute Traumatic Origin of Retroflexion of Uterus.
66. GOEBEL: Finglandol (Roche) as Labor Remedy.
67. KOLLAPE: Rectum Perforation through Rectoscope.
July 30, 1912.
68. VON LUHR: Fight against Tuberculosis in Adolescence (*To be concluded*).
69. WÜRST: Epilepsy as Clinical Unity (*To be concluded*).
70. FRANZ: Importance of Toxicosis of Albumin Disintegration in Birth and Eclampsia.
71. WOLFF and MÜLZER: Treatment of Syphilis with Neosalvarsan.
72. KALL: Experiences with Neosalvarsan.
73. SPIDEL: First Trials with New Combination Treatment of Carcinoma (Electromagnetic Irritation Treatment Combined with Arsenic).
74. RICH and STRAUSS: Treatment with Atophan.
75. HUBERT: Two Peculiar Cases of Fracture of the Femur in Infant during Birth.
76. GOEBEL: Plastic Compensation of Forward Part of Rectum through Rear Wall of Vagina.
77. LANGSTEIN and EDELSTEIN: Iron Content of Human and Cow Milk.
78. GRUBER: Examinations with Wassermann Reaction on Cadaver.
79. PAVELLE: Bath for Syphilides in Japan.

1. **Rhythmic Contraction of Isolated Muscles of the Heart outside the Organism.**—Burrows gives an interesting review of the literature on the subject and of his own researches which directly prove that the theory of the heartbeat is correct. The cells of the heart muscle of embryonal chicken, after division and differentiation outside the organism, are able to take up their specific function as isolated cells as well as a conglomeration of cells. The rhythm of such cells coincides with the rhythm of the heart of the live fowl, and this rhythmic motion was observed, not only in the cells of the heart muscles of young embryos, but of embryos fourteen days old. But pieces taken from the ventricles of older embryos do not beat, although the cells taken from such pieces contract.

3. **Influence of the Tenth Nerve upon the Large Intestine.**—Boehm found that stimulation of the tenth nerve produces in the cat and the rabbit increase of the antiperistaltic, in the rabbit increase of the slower motion of the colon, in the cat and rabbit appearance of tonic contractions, especially at the proximal end of the colon. He thus proved that spastic obstipation is a result of an increase of the tone of the tenth nerve which produces a raising of the mobility in the large intestine.

5, 6, and 49. **Anæmia splenica and Salvarsan.**—Perussia reports a case of splenic anemia in an adult which was cured by three intravenous injections of 0.3 gramme salvarsan for one dose—Vallardi reports a similar case in a man, twenty-two years of age, who suffered from splenic anemia together with tuberculosis and malaria infection; this patient received two injections of salvarsan intravenously, 0.15 and 0.4 gramme; the patient has progressed favorably, and the author expects a cure, having only very recently given a third injection of 0.4 gramme—Curschmann also reports a case of splenic anemia in an adult treated with salvarsan. His result was good, and he thinks that every patient whose case has been diagnosed as Banti's disease should receive an antiluetic, especially sal-

varsan treatment, even if the Wassermann reaction remained negative.

22. **Relation between Lung and Genitals of Tuberculous Women.**—Bardleben observes that genital tuberculosis is usually based upon phthisis, and the prognosis of lung tuberculosis will become worse if genital tuberculosis appears. When genital tuberculosis is found upon autopsy a severe case of phthisis is to be expected. An early operation for extirpation of genital tuberculosis may produce a cure, even of a case of lung tuberculosis. During pregnancy the placenta will very often become the intermediate station for the tuberculosis, where the bacilli, while not circulating in the blood itself, find a resting place, and whence they can be thrown back into the system, when the placenta will be expelled, and start up a severe new attack of phthisis. An artificial interruption of gestation in the tuberculous will, therefore, have good results only if no bacilli are found in the placenta.

9. **Ambulatory Treatment of Fractures with Traction Pins.**—Hackenbroth describes his technique of ambulatory treatment of fractures based upon an idea of von Eiselberg and Kafer. The treatment is based theoretically upon the use of traction pins connected with each other through a ball joint. He states that his patients with fractures in the lower extremities are able to walk around with such an attachment, with the help of a stick or crutches, two weeks after the accident. The author thinks that his method would be well adapted for military surgery.

18 and 77. **Iron Content in Human and Cow's Milk.**—Soxhlet remarks that cow's milk contains on the average about one third of the proportion of iron found in human milk, often only one fifth, and very seldom more than one half. If cow's milk is used in the feeding of infants in diluted form the proportion of iron will be reduced to one sixth or one tenth. It will, therefore, become necessary, to avoid the danger of iron hunger in nurslings, to add a certain amount of iron to artificial food which is made up of cow's milk. The pale appearance of artificially fed infants may possibly be explained through such deficiency of iron. The question of adding iron to artificial food is an open one and needs a good deal more of explanation and investigation before a decided stand can be taken.—Langstein and Edelstein approve the observation of Soxhlet, that human milk contains in one litre about 1.6 milligramme iron oxide, while cow's milk has only 0.6 milligramme. The two authors have reported their observations previously, and repeat their statements that the question should be investigated: What is the lowest amount of iron oxide upon which an artificially fed infant can thrive? These authors also emphasize the importance of researches and studies referring to the iron oxide content in milk.

23, 24, and 25. **Narcophine.**—Straub has made experiments for a number of years with opium and its products. He observes that all preparations made from genuine opium are only extracts of the raw material produced by the plant, and must, therefore, be unstable in their effect, qualitatively and quantitatively. He, therefore, has tried to make a preparation which will be stable and uniform in

its effect. After a pharmacological review of the alkaloids of opium, he asserts that in narcophine he has found a salt which answers all these requirements; narcophine is a double salt for which he gives the chemical formula as follows: $C_7H_4O_7$, $C_{17}H_{19}NO_3$, $C_{22}H_{23}NO_3 + 4H_2O$, that is, morphine narcotine meconate. It is a white, crystallizing salt, slightly soluble in water and alcohol, and contains one third of its weight of morphine.—Zehbe reports his results with narcophine which was given in fifteen, twenty, or thirty drops of a three per cent. solution internally; subcutaneously, one c. c. was used. The patients upon whom it was tried had formerly received pantopon, codeine, morphine, or opium; narcophine was substituted, and later on the former drug again given. He found that the results were very satisfactory. Sleep was quiet, long, and refreshing; by effects were not observed, but the effect upon digestion was very evident and consisted in diminution of peristalsis. No action upon the pupils or upon breathing was observed.—Schlimpert coincides with the statements of Zehbe and especially emphasizes the harmlessness of narcophine.

42. Neosalvarsan in Tertiary Malaria.—Iversen and Tuschinsky were among the first to advocate the use of salvarsan in the treatment of tertiary malaria. They have now tried neosalvarsan in five cases and speak highly in its favor. The plasmodia disappear quickly, but it is a question whether their disappearance is permanent. To avoid a recurrence they advise giving a second injection ten days after the disappearance; even a third injection may become necessary.

43, 71, and 72. Neosalvarsan.—Grünberg reports his observation on eight cases treated with neosalvarsan. He remarks that 914 is only an improved preparation of 606 it will, therefore, have the same indications and the same contraindications, although these are somewhat modified.—Wolff and Mulzer report on thirty cases treated with neosalvarsan and their observations do not agree with those given by other physicians. They have used all the precautions, small doses, only freshly prepared solutions, and only in a certain class of cases, but still they come to the conclusion that severe toxic by effects will be found with neosalvarsan in a much larger amount than with salvarsan, while the specific effect of the new chemical is less evident than that of the old. They think that the total dose of 3.3 grammes for eight days' treatment is too large, and they warn against the ambulatory use of 914.—Kall has thirty-nine cases, with 141 intravenous infusions and ten intramuscular injections. This author has made the same observations as the two previously mentioned, and demands great care in the use of neosalvarsan.

51. Idiosyncrasy to Salvarsan: Are Vaccinations with Salvarsan Solutions Useful to Diagnostics? Existing Idiosyncrasy?—Zieler takes up the question of testing the sensibility of the skin to salvarsan before an injection is made. He himself made twenty-one experiments, eleven of these patients had received salvarsan previously; he used three solutions: 0.0001 salvarsan in 0.1 c. c. distilled water; 0.001 salvarsan in 0.1 c. c. distilled water; and 0.005 neosalvarsan in 1.1 c. c. dis-

tilled water. He found that the results received from the cutaneous vaccination did not absolutely correspond to the reaction produced by subcutaneous injection. He believes that the exanthemata observed after salvarsan injections are cases of idiosyncrasy, produced through accumulation of arsenic; that is, an artificial idiosyncrasy, while in-born idiosyncrasy was not observed. He thinks, therefore, that cutaneous vaccination as a test before salvarsan or neosalvarsan treatment commences, is useless.

53. Method for Demonstrating Diphtheria Bacilli.—Conradi and Troch have tried to improve Löffler's serum for the demonstration of diphtheria bacilli. They give an explicit description of their technique of repairing the new plate and make the statement that their new serum is twice as strong in the demonstration of the bacilli as Löffler's serum.

60. Comparative Microscope.—Thörner describes his new instrument with which two objects can be examined at the same time, making an immediate comparison possible. The illustration which accompanies the article and the description are very plain, but would be too long for our review. An advantage of this combination microscope is that it can also be used as a single instrument.

63 and 64. Death after Salvarsan.—Hirsch reports two deaths after salvarsan. Both occurred after intravenous infusion of salvarsan in a second dose—Hammer has had one death after salvarsan. Both authors avoid giving an explanation, if indeed such is possible, of the cause of death.

ZENTRALBLATT FÜR CHIRURGIE.

August 27, 1912.

1. GELINSKY: Hyperemia or Lymph Engorgement.
2. A. WAGNER: Experience in Treatment with Mastisol.
3. W. ROEPKE: Question of Covering Defects in the Skull.

1. Hyperemia or Lymph Engorgement.

Gelinsky discusses Bier's stasis under the captions when is the stasis too great, when too slight, and how is the optimum to be obtained. He believes the benefit to be derived from the engorgement of lymph, rather than the hyperemia, and advocates a very carefully applied rubber bandage. If this is properly applied, insensitiveness sets in very soon, with no paresthesias, or great engorgement, so that it can be used in ambulant cases without danger. The inflammatory symptoms subside without too great edema, and it can be used for prophylactic purposes.

ZENTRALBLATT FÜR INNERE MEDIZIN

August 10, 1912.

ADOLF SCHNÉE: Ferment Therapy of Diabetes Mellitus.

Ferment Therapy of Diabetes Mellitus.

Schnée asserts that deficiency in one or more ferment actions plays an important rôle in the causation of diabetes. He has used tablets containing various ferments, including those of the pancreatic secretion, in a series of cases, with the result that glycosuria was almost or quite removed, and muscular and nerve pains, paresthesias, anesthetics, and thirst were relieved.

ROUSSKY VRATCH.

June 16, 1912.

1. S. M. RUBASHOFF: Effect on Diaphragm of Severing Both Pneumogastric Nerves.
2. D. A. KAMENSKY: Increased Demand for Determining Quantity of Ether: Conditions under Which it May Be Preserved.

3. A. D. TIMOPHEEVSKY: Application of Method of Determining Formative Elements of Bone Marrow.
4. A. S. GOLDBERG: Radium Emanation as Therapeutic Agent in Rheumatism and Gout.
5. I. O. GALPERN: Brief Review of 516 Cases of Salvarsan Treatment.
6. K. D. SARKISOFF: Summary of Use of Salvarsan in Ambulatory Patients.
7. B. P. BABKIN and HIDETSURUMARU ISCHIKAWA: Mechanism of Action of Fats as Excitants of Pancreatic Secretion.

1. **The Pneumogastric Nerve.**—Rubasheff concludes from his experiments on animals that the severance of the pneumogastric nerves above the diaphragm produces no ill effects with the exception of temporary atony of the stomach. On that account the diet at first should be very light.

2. **Tests for Ether.**—Kamensky states that ether for anesthesia should not be affected by a solution of potassium iodide, for six hours; should not change or discolor pieces of potassium hydrate, for six hours; and when shaken with Nessler's reagent, should produce a milk white turbidity without a yellowish brown, dark gray, or black precipitate. When guarded from light, ether may be kept for years regardless of the size or color of the container.

3. **The Composition of Bone Marrow.**—Timopheevsky found that normal bone marrow of dogs contains in one c. c., erythrocytes 1,184,000, erythroblasts 674,000, and leucocytes 1,113,000. In acute anemia, following bleeding or poisoning with phenyl hydrazin, the erythroblasts increase very rapidly, reaching the maximum on the tenth or eleventh days; the leucocytes, on the other hand, are diminished. During starvation, there is a diminution in the number of erythroblasts and an increase of the erythrocytes, while the leucocytes remain unchanged.

4. **Radium Treatment of Chronic Rheumatism.**—Goldberg administered water charged with radium emanation (1,000 Mache units to one pint of water daily) in thirty cases of chronic rheumatic and gouty affections of varying degrees of severity. The results have been uniformly satisfactory; in fact, superior to any of the methods hitherto employed.

5. **Salvarsan.**—Galpern made 516 injections of salvarsan in 395 patients of whom 382 were syphilitic. The majority of the injections (396) were made intravenously, a method which was finally adopted as the only satisfactory one. With the exception of thirty-seven recurrences, the results were very satisfactory. In two cases of syphilis complicated, one by a grave nephritis and the other by diabetes, repeated injections of fractional doses of salvarsan were not followed by any reaction. Neither the nephritis nor the diabetes was benefited. Two patients with relapsing fever recovered, the spirochetes disappearing eight hours after the injection. In one case of tuberculosis of the throat and in two cases of cerebral tumors the results were negative.

6. **Salvarsan in Ambulatory Practice.**—Sarkisoff concludes from his observations in thirty-four cases that while salvarsan is beneficial in the majority of cases, a single injection frequently fails. He also found that a preliminary or conjoint treatment with iodine and mercury renders the treatment with salvarsan more satisfactory.

7. **The Action of Fats on Pancreatic Secretion.**—Babkin and Hidetsurumaru Ischikawa conclude from a very extensive series of experiments on animals, that neutral fat is decomposed in the duode-

num into soap and fatty acids, and these excite pancreatic secretion. The fatty acids act in all probability through the nerves, while the soaps act through the nerves as well as the blood.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES

July, 1912.

1. DELANCEY ROCHESTER: Constipation.
2. JOSEPH L. MILLER: Drug Treatment of Edema.
3. SOLOMON SOLIS-COHEN: Nonsurgical Treatment of Exophthalmic Goiter.
4. HENRY KOPLIK: Infections Following Tonsillotomy: Forms and Such Infections.
5. GEORGE FETTEROLF: Anatomy and Relations of Tonsil in Human Body. Proper Conception of Plica triangularis. Tonsil Enucleation as Based Thereon.
6. MURRAY H. BASS: Chvostek's Sign and Significance in Older Children.
7. RICHARD L. SUTTON: Verrucae plantarum.
8. DANIEL M. HOYE: Therapeutic Application of P-Hydroxyphenyl ethylamin (Tyramine); Active Principle of Ergot.
9. FRANK SMITHIES: Occurrence of Trichomonas hominis in Gastric Contents.
10. JAMES K. YOUNG: Sacroiliac Displacement.
11. L. W. GORHAM and HANS LISSER: Hemolysis in Vivo and in Vitro Diagnostic of Cancer.

4. **Infections Following Tonsillotomy.**—Koplik calls attention to three distinct forms of sepsis following surgical removal of the tonsils. One form has an obscure fever for a week or more without giving rise to any endocarditic or other lesion. A second form is marked by a febrile action and a mild infectious endocarditis, or as in the case of chorea, the endocarditis takes on a more severe infectious or malignant type with subsequent death. In a third form the infection is severely hematogenous and causes destructive blood changes with signs of sepsis (profuse hemorrhagic ecchymotic areas on the cutaneous surface, petechiae, severe hemorrhages from the bowel, and areas of bronchopneumonia).

6. **Chvostek's Sign and Its Significance in Older Children.**—Bass recalls the discovery by Chvostek of a sign which he believed to be characteristic of tetany, and which consists in a mechanical excitability of the peripheral nerves. By tapping on the skin over the facial nerve, or at a point about midway between the zygoma and the angle of the mouth, there is, when the sign is present, a lightninglike contraction of the muscles supplied by the facial nerve, the angle of the mouth, the side of the nose, and in marked cases the inner canthus of the eye and eyebrow. The writer has found this sign present in 3.2 per cent. of the poor applying for treatment. The sign is more frequently observed as the age increases, up to 19.6 per cent., at ten to fourteen years of age. This frequent appearance in older children in America, where tetany is an uncommon disease, would seem to lessen its diagnostic value in them. The positive Chvostek reaction in older children means, as a rule, a neuropathic constitution, and is especially common in children showing vasomotor irritability, particularly in those suffering from orthostatic albuminuria. As this sign is easily elicited, it should be used as an aid in diagnosis of neuropathic children.

11. **Hemolysis in Vivo and in Vitro as Diagnostic of Cancer.**—Gorham and Lisser, after an examination of 192 cases of various types of carcinoma, conclude that this test is not specific for carcinoma, although useful as an aid to diagnosis. No connection exists, apparently, between a positive skin reaction and hemolysis in the test tube, which

latter method is of questionable value. The grouping to which the corpuscles employed for injection belong is of considerable importance. The writers offer no estimate of the special value of the reaction in differentiating early carcinoma and borderline tumors, or to its absence in advanced cases. A positive reaction is more significant than a negative one, and very probably indicates the presence of cancer; a negative reaction does not exclude cancer.

INTERSTATE MEDICAL JOURNAL.

July, 1912.

1. ADOLPH SCHMIDT: Injection of Oxygen and Other Disinfectants into Intestines through Duodenal Tube.
2. ISAAC A. ABE: Fallacies in Treatment of Gastrointestinal Diseases.
3. JAMES M. BRADY: Infant Feeding as Taught by German School.
4. R. B. H. GRADWOHL: Technique of Wassermann Reaction for Syphilis.
5. DUDLEY FULTON: Diagnosis of Renal Insufficiency.
6. C. E. RUHL: Some Peculiarities of Medical Practice in Porto Rico.
7. ARTHUR A. HOWARD: Better Utilization of City Health Resources in Summer.

August, 1912.

8. F. MORRIS CLASS: Precautions in Use of Tuberculin Therapy.
9. ALBERT E. TAUBSICK: When and How to Use Digitalis.
10. WILLIAM F. CHENEY: Variations in Clinical Picture of Gastric Ulcer.
11. FRED W. BILEY: Use and Abuse of Ligamentum teres uteri.
12. REYNOLD W. WILCOX: Chronic Universal Perihepatitis.
13. JOSEPH M. PATTON: Interpretation of Precoordial Pain.

3. **Infant Feeding as Taught by the German School.**—Brady sums up his observations by stating that for a healthy infant, throughout the first year, the proteid percentage may range from 1.5 to three. The fat must be increased only when the infant is thriving; it should range from one to 3.5 per cent. As the use of maltose is less liable to induce an intoxication and as it has a favorable influence upon the weight, it is to be preferred to lactose.

4. **Technique of the Wassermann Reaction for Syphilis.**—Gradwohl concludes that this reaction placed where it belongs—secondary to the clinical manifestations—is of value in making up the diagnosis of syphilis. As it is only a symptom, it should not be given greater consideration. The writer attaches more value to a group of well marked clinical manifestations than to this or any other laboratory test. When positive it is an important aid in diagnosis. When negative it does not in any sense eliminate the possibility of syphilis. In supposed tertiary cases, a negative Wassermann reaction leaves at times a wide gap. In these cases Noguchi's luetin test may add another important symptom where the Wassermann test has failed.

10. **Variations in the Picture of Gastric Ulcer.**—Cheney states that there is no absolutely certain clinical history of ulcer. Nocturnal pain, arousing from sleep, does not always mean duodenal ulcer. It may occur as well in gastric ulcer. Hematemesis may be entirely absent in the course of a chronic gastric ulcer, and its absence does not bar the diagnosis. Vomiting of any kind may never take place. While pain is the most unailing symptom, it varies greatly in severity in different cases and at different times, also as regard the site at which felt and the time after eating when it occurs. The symptoms of ulcer may be simulated by the reflex gastric symptoms of chronic appendicitis, chronic cholecystitis, or intestinal parasites (tapeworm), or by the gastric crises of locomotor ataxia.

JOURNAL OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

July, 1912.

1. FRANK R. SPENCER: Recent Observations in Eye, Ear, Nose, and Throat Clinics of Vienna and Berlin.
2. K. L. STOLL: Proctostomium in Diseases of Eye.
3. JOHN H. FOSTER: Sinus Thrombosis as Complication of Mastoiditis.
3. **Sinus Thrombosis Complicating Mastoiditis.**—Foster states that the chances for recovery are very slight in cases of sinus thrombosis if clot disintegration and general pyemic symptoms, or purulent meningitis have developed before operation is resorted to, but that the prognosis is very good if the sinus is exposed, the clot and infected vessel wall removed, and the jugular vein resected as soon as the symptoms are indicative of the condition.

INDIAN MEDICAL GAZETTE.

August, 1912.

1. L. B. SCOTT: Nasal Treatment of Leprosy.
2. LAWRENCE G. FINK: Mongolian Birth Marks; Anthropological Study.
3. J. WOOLLEY: Insanity in Andamans.
4. THOMAS JACKSON: Hydatid Cyst.
5. T. S. THIRUMURTHY: Multiple Hydatidose Echinococcal Infarction of Abdominal Viscera.
6. JAMES HUSBAND and H. V. HODGE: Peculiar Fever Met with on Northwest Frontier.
7. P. K. CHITALE: Three Hundred Cases of Guinea Worm.
8. H. B. STEEN: Large Renal Calculus.

7. **Guinea Worm Infection.**—Chitale describes the guinea worm as a long, white cylindrical worm from one twelfth to one tenth of an inch thick, varying in length from thirteen to thirty-eight inches. The head end is thicker and oval. It has a triangular orifice opening in the alimentary canal which runs along the whole length of the animal and terminates near the tail. Close to the triangular orifice there are two raised papillae, one on the dorsal, the other on the ventral surface, with smaller raised dots round about, four or five in number. As found in human beings the worm is generally a female. The embryos appear under the microscope to be flattened, tapering toward the head end, and to have a sharply defined tail. They are active and remain alive in water for four or five days. They enter human beings in the drinking water. The symptoms produced are fever for a day or two between 100° and 101° F., and the formation of a small blister somewhere, on the third or fourth day, generally on the foot or ankle, often on the legs, thighs, arms, or shoulders. This blister breaks in a day or two, leaving an ulcer with a tiny hole in its centre, from which flows a minute quantity of clear, white fluid full of embryos. Sometimes the head of the worm can be seen. Poultices are applied, and as the worm comes out it is rolled upon a sticking plaster, so that it is extracted little by little, day after day. If it is subcutaneous, the extraction takes a day or two; if deep, about a week. The hole is washed out with bichloride to kill the embryos.

REVUE DE MÉDECINE.

July, 1912.

1. J. J. MANOUKHINE, J. NOEL FIESSINGER, and G. A. KROLUNTZKY: Action of Metallic Ferments on Quantitative Variations in Leucocytes and on Leucocytolysis in Blood.
2. E. JEUSSELME and PAUL CHREVELLIER: Latent Meningeal Involvements Secondary to Syphilis (*To be continued*).
3. G. BARBÉZIEUX: Fever and Manifestations of Preleprosis.

1. **Action of Metallic Ferments on Leucocytes and Leucocytolysis.**—Manoukhine, Fiessinger, and Kroluntzky refer to the researches of Robin, Bardet, Weil, and Laire, which showed that the favorable influence exerted by metallic ferments on

the course of certain infectious diseases was due to the production of a leucocytolysis in the blood. This question was studied by the authors, employing intravenous injections of colloidal silver, in eight subjects. It was found that in the normal individual metallic ferments caused a slight leucopenia followed by a slight leucocytosis, without the production of any leucocytolysis. In cases of pneumonia and acute articular rheumatism, the injections caused a much more pronounced leucopenia and produced small amounts of leucocytolysis, followed, either in a few hours or on the next day, according to whether the case was progressing slowly or rapidly to recovery, by a leucocytosis.

3. Fever and Preleprosis.—Barbèzieux believes that, just as in tuberculosis the existence of a pretuberculous stage is sometimes recognized, there is in leprosy a stage of latency or preleprosis preceding the development of the more characteristic symptoms. Fever, intermittent, continuous, or irregular, and refractory to quinine, may be present years before the typical signs appear. Other early manifestations are weakness, lassitude, backache, dizziness, drowsiness, disturbances of the sweat function, precordial oppression, dryness of the nasal mucous membranes, and epistaxis. Barbèzieux pleads for a closer study, particularly by clinical laboratory methods, of the phenomena of preleprosis, in order that, through earlier diagnosis, prophylactic measures may be rendered more effective.

REVUE MEDICALE DE LA SUISSE ROMANDE.

July, 1912.

1. BEITZKE: Fat Embolism.
2. BEUTNER: Role of Tampon, Drainage, and Peritonization in Combating Infection in Abdominal Operation for Cancer of the Cervix (Operation of Freud-Wertheim).
3. E. MAIRGAC: Diagnosis of Rabies through Search for Negri Bodies.
4. A. C. MATTHEY: Congenital Vesical Diverticula. Diverticulitis Cured by Conservative Method of Treatment.
5. D. PACHANTONI: Cenobitic Isolation in Psychoneuroses.
6. P. SANDOZ: Pathological Reflex in Upper Extremities.

1. Fat Embolism.—Beitzke recalls the fact that recent observations have shown simple fat embolism to produce death more frequently than had been suspected, especially after fractures or other traumatic lesions. After describing in detail the features of the two possible modes of death from fat embolism, viz., the respiratory and cerebral modes, the author reports a case, ending fatally, which was remarkable in that at autopsy no fracture or noteworthy crushing of adipose tissue was found to account for the presence of fat in the blood. Death by fat embolism must, in this patient, have been produced through a concussion of the bone marrow occurring as the result of a fall upon the stump of an amputated limb. Since it is already generally conceded that violent commotion of a broken bone may be attended with danger from fat embolism, Beitzke warns against lengthy journeys or premature massage in all cases of fracture or crushing of adipose tissue. Fat embolism in the lungs may be the starting point of emphysema, and cerebral embolism probably of traumatic neurosis. From the medicolegal standpoint, Beitzke considers that in the absence, at autopsy, of fat embolism in a case of fracture, fracture must have occurred either simultaneously with, or after death. On the other hand, the finding of fat embolism should lead, in general, to the diagnosis of fracture *intra vitam*,

except under the following conditions: 1. In cases of lipemia (often in advanced diabetes), agglomerations of fat droplets may be found in the lungs and suggest fat embolism; examination of the liver, however, will reveal in lipemia an excess of fat in the hepatic over that found in the pulmonary vessels. 2. In the putrefaction of cadavers, with liberation of gas, fat may enter the peripheral veins, and even the pulmonary vessels (Westenhoeffer). 3. Burns after death have been known to cause the appearance of fat in the right ventricle, whence it might penetrate further into the lungs. It should also be kept in mind in legal medicine that cerebral fat embolism in a light form may render an individual incapable of appreciating the consequences and morality of his acts.

2. Avoidance of Infection in Operation for Cancer of Cervix.—Beutner refers to the high mortality from infection which has attended the Freud-Wertheim operation, and enumerates the expedients which have been adopted by various operators to overcome this drawback. He advises the following procedures: Fixation of the vesical peritoneum to the anterior vaginal segment and of the peritoneum of Douglas's cul-de-sac to the posterior segment; drainage of each parametrium with antiseptic gauze through the vagina; closure of the two broad ligaments, a small opening for the gauze drain being left on either side of the vagina; additional drainage through a free abdominal incision by means of a Mikulicz gauze bag, each parametric sac being completely filled with antiseptic gauze.

3. Diagnosis of Rabies.—Marignac, from observation and histological study of forty-one dogs and cats known to have, or suspected of having rabies, concludes that the finding of Negri bodies warrants a positive diagnosis. When these bodies are detected by him he dispenses with the more time consuming procedure of inoculating rabbits and waiting for the disease to develop. A negative result of the search for Negri bodies does not, however, prove the absence of rabies, though it is to be remembered that the inoculation test itself may likewise occasionally fail.

4. Congenital Diverticula of the Urinary Bladder.—Matthey thinks it out of the question to diagnosticate a healthy diverticulum of a healthy bladder, the symptoms being so slight, if indeed any are present, as not to bring the subject to a physician. If any portion of the urinary tract becomes diseased, however—e. g., if nephritis, lithiasis, cystitis, or gonorrhea develops—symptoms betraying the presence of the diverticulum will appear. Barring cystoscopy, which alone can yield a positive diagnosis, the only sign that may be termed pathognomonic is the sudden appearance, after the bladder has been irrigated and the fluid has returned clear, of a stream of turbid, sometimes fetid, urine; this represents a discharge of the contents of the diverticulum. Matthey reports a case of vesical diverticulitis, diagnosticated with the cystoscope, in which bladder irrigations with one to 2,000 oxy-cyanide of mercury, one to 1,000 silver nitrate, and later with three per cent. boric acid solutions, led to a permanent cure. He advises persistent conservative treatment in these cases before resort is made to radical operation. Wherever possible, a

Nélaton catheter of large calibre should be introduced into the diverticulum, which generally opens near the neck of the bladder, and allowed to remain, antiseptic irrigations being practised three or four times daily until the nature and amount of the residual urine have shown improvement. The catheter should then be removed and irrigations given once or twice daily until the condition is cured or the necessity of operating becomes apparent.

ARCHIV FÜR OPHTHALMOLOGIE

August, 1912.

1. W. GILBERT: Glaucoma. I. Pathology, Pathogenesis, and Treatment.
2. M. TAKAYASU: Primary Fatty Degeneration of Cornea.
3. E. KUGEL: Binocular Vision of and Glasses for Anisometropes.
4. P. ROEMER and H. GEBB: Another Contribution to Anaphylaxis by Means of Lens Albumin.
5. C. L. BEHR: Lesions and Injuries of Eye Produced by Light.
6. RUDOLF BERGMANN: Multiple Nevus Tumors of Conjunctiva.

1. **Glaucoma.**—Gilbert finds simple glaucoma to be more frequent in myopic and emmetropic eyes than in hypermetropic, while more than seventy-five per cent. of the cases of inflammatory glaucoma occur in hypermetropic eyes. The author deals with the tonometric relations of the different forms of glaucoma to each other, the tonometric findings in congenital hydropthalmos and the differential and early diagnosis of the disease under the heading pathology. Under pathogenesis he considers its relations to general disease, to diseases of the blood-vessels, discusses various theories, and the height of the blood pressure in simple and inflammatory glaucoma. He considers the cause of the increase of intraocular tension to be a general circulatory disturbance associated with increase of the blood pressure, which, under certain circumstances in connection with local vascular sclerosis, increase of capillary pressure, and venous engorgement due to vasomotor influences, induces increased transudation. The form and course of the glaucoma depend upon the combination of the refractive condition and the height and duration of the fluctuations in the increase of blood pressure. Under treatment he deals particularly with venesection as a means of general treatment to reduce the blood pressure, and so the intraocular tension, and compares the effects obtained with those from local treatment with miotics and operations. He finds that venesection reduces intraocular tension, and may be of use in the prodromal stage of the disease, in glaucoma simplex, and before operations. He has proved the reduction of the intraocular tension after venesection by systematic measurements on thirty-seven patients, and also that inflammatory symptoms are apt to reappear when the blood pressure rises again. Other general treatment recommended is such as will tend to prevent the extension of arteriosclerosis, among which are mentioned care not to overload the stomach, abstention from such stimulants as coffee and alcohol, as well as avoidance of both hot and cold baths. The suitable temperature for baths for such patients is from 34° to 39° C. (93.2° to 102.2° F.). Local treatment with miotics, or operation when indicated, is to be added to the general treatment.

5. **Injuries to the Eye by Light.**—Behr says that the increased sensitiveness of the retina in the dusk may be greatly compromised by the chronic effect of the short wave rays of light, but, aside

from a slight conjunctival injection, especially in the interpalpebral space, nothing pathological can be detected in the eye. The patients complain of flickering and bad vision, particularly when they look from the dark into the light. All these troubles pass away without treatment if the patients return to work in daylight. He suggests that this disturbance may properly be called *ophthalmia electrica chronica*.

Proceedings of Societies.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

*Special Meeting in the Borough of the Bronx,
March 4, 1912.*

Dr. N. B. VAN ETLEN in the Chair.

Nephrectomy for Hypernephroma.—Dr. HENRY ROTH reported two cases of interest. The first was one of hypernephroma, in which he had removed the affected kidney, and the patient, a married woman, forty-four years of age, was presented. She had been in good health up to the day of her admission to the hospital, June 7, 1911, when she began to pass bloody urine. She also had difficulty in urinating, and had to be catheterized several times. Physical examination revealed in the left iliac fossa a round, movable mass the size of a large orange, and a specimen of voided urine was found to contain a very large number of red and white blood cells. She was operated upon on June 7th, celiotomy being done through the left rectus muscle. The intestine having been pushed aside, incision of the posterior peritoneal wall was made, and the kidney separated from its fatty capsule: after which the ureter and renal vessels were clamped, ligated, and divided, and the kidney removed. A small cigarette drain was inserted in the perineal space, and the posterior layer was sutured up to the drain. Then the anterior abdominal wall was sutured in layers, and the drain pulled through a stab wound. The pathological report was, large irregular kidney; hypernephroma in upper half of the organ. Convalescence was uneventful, and the patient was discharged July 1st. She stated now that she had remained perfectly well and had gained thirty-five or forty pounds in weight since the operation.

Doctor Roth also presented the specimen from another very similar case, in which he had operated in July, 1908; no symptoms appearing until five days previously. This patient died late in the year 1911, but during the three years showed no evidence of any return of this disease. Up to a very recent date it was generally believed that this variety of tumor was a neoplasm of the adrenal tissue. From a study of fifty so called hypernephromata, however, Wilson, of Rochester, Minn., had now arrived at the conclusion that it consisted of nephrogenic tissue, which developed from the blastema and was similar in character to the true kidney structure. He therefore assigned to the tumor the designation, *mesothelioma of the kidney*. By some these tumors were classed with malignant growths, from the fact that sometimes there were metastases, particularly

in the bones. Such metastases occurred, not through the lymphatics, but the bloodvessels. The growths frequently existed a long time without giving rise to any symptoms, painless hematuria being usually the first thing to attract attention to them.

Dr. L. M. KAHN said that the transperitoneal route was now generally recognized as the best for operations upon the kidneys, even when we had to deal with sarcoma, and the procedure was practically bloodless. As to the diagnosis of hypernephroma, the first symptom, as had been mentioned, was the bleeding; a long period usually elapsing without any symptoms at all. Kidney tumors, if they could be felt, were apt to be very deceptive, as it was difficult to tell their consistence. From an operative standpoint, therefore, it was necessary to decide whether there was present a neoplasm or a cystic condition of the kidney, due to pus or other fluid; and here cystoscopy was of great assistance. By ureteral instillation, dilatation of the renal pelvis could be effected, and by means of the x ray it could be ascertained whether or not the pelvis was implicated. Hypernephroma was characterized by periods of quiescence. No operation should be undertaken for this condition if disease in any of the long bones was present, and hence, as these growths had periods of quiescence, it was important that a very careful examination be made before proceeding to operate.

Dr. A. ERNEST GALLANT, having suggested that if the pathology of these tumors was such as had been described, it might be possible to shell out the growth without removing the kidney, Dr. HARLOW BROOKS said that from his examinations of specimens he was convinced that this could not be done. It was a homogeneous growth, and the whole organ, therefore, had to be removed. As to the pathology, he believed that Wilson was right in his conclusion. As to these tumors existing a long time without symptoms, in one case that he knew of, this was the fact for thirteen years, when the patient died from a metastasis into the liver. They were, however, liable to give trouble at any time, and it was therefore desirable that they should be removed before this occurred, if their presence could be detected.

In reply to a question by Dr. R. E. VAN GIESON as to the age of patients with hypernephroma, Doctor Roth stated this most commonly occurred between the ages of thirty-five and forty-five years. Dr. Van Gieson then said that the oldest patient he had been able to find on record was sixty-five years, but a year ago he had had one in which the patient was sixty-eight. This case illustrated strikingly the periods of quiescence which had been referred to. The patient, a female, had repeated hemorrhages, with intervals of varying duration, when the urine was entirely free from blood. His own diagnosis was hypernephroma, and this was also the opinion of Dr. Henry Morton, a genitourinary specialist, who made a cystoscopic examination. As the patient had been for years an invalid from other troubles, and on account of her advanced age, Dr. Van Gieson believed that an operation would prove fatal, and therefore did not advise it. She passed out of his hands when he went on his summer vaca-

tion, and he learned afterward that she had died from what appeared to be uremic coma.

Acute Abdominal Abscess Caused by a Foreign Body.—The second case reported by Doctor Roth was that of a married woman, twenty-six years old, who was admitted to Lebanon Hospital on June 5, 1911, complaining of pain in the abdomen. The pulse was 120, the temperature 103.2° F., and the blood examination showed white blood cells, 18,400 and eighty-four per cent. polymorphonuclears. There was tenderness all over the abdomen. The liver edge was not palpable, but a mass was found which seemed to occupy the greater part of the right side of the abdomen, which extended from the hypochondriac region to Poupart's ligament, and which did not move with respiration. The diagnosis made was abdominal abscess. The patient stated that two months previously she had been suddenly seized with pain in the right iliac fossa. There was no vomiting, but she felt very ill and had to go to bed, where she remained for a month; during which time she had chills and fever. After an interval of two weeks, in which she felt better, she had a recurrence of the pain and fever, and had to return to bed; where she remained until her admission to the hospital. On June 12th a vertical incision was made through the right rectus muscle, and this exposed a very large mass, covered with thickened omentum, in the upper part of the abdomen. It was opened carefully, and a large quantity of very foul smelling pus escaped. On exploring the abscess cavity a body was felt which proved to be a bougie 11.5 inches long. The cavity, which extended into the iliac fossa, was drained by means of a large tube and two cigarette drains. Later the patient gave the additional information that two months before admission, having passed her menstrual period and believing herself to be pregnant, she had gone to a midwife, who inserted something in her vagina. This was followed by severe pain in the abdomen, which became very much distended, and she was obliged to take to bed. She was discharged cured on July 2d.

Doctor GALLANT expressed the opinion that perforation of the uterine wall was by no means uncommon, and said that in some cases he had seen he had had to perform hysterectomy. He had also met with foreign bodies in the abdominal cavity, though these had not been forced through the uterus. In one instance he had found a forceps which had been left there by a gynecologist in doing a laparotomy. In spite of the greatest care, such accidents would sometimes happen, and he himself had once left a yard of gauze in the abdominal cavity. In another case a needle which he had inadvertently left, came out through the anus two weeks after the operation.

Dr. EDWARD WALLACE LEE said that the peritoneal cavity was the surgeon's best friend. A foreign body in it might, or might not, cause a great deal of disturbance, but the chances were that it would not; and, personally, he would rather be shot through the peritoneum, provided there were not too many perforations of the intestines, than through the knee. Cr  de once left a large sponge intentionally in the abdomen after a laparotomy, to see what

would be the result, and six months afterward, in Doctor Lee's presence, he reopened the abdomen. Finding the condition entirely aseptic, he decided to allow the sponge to remain where it was, and sewed up the wound again. During the three months Doctor Lee remained in Dresden the patient had no trouble whatever. While such things might be done in Germany, it would hardly be safe to try them in America. There was, then, no occasion to be alarmed if one accidentally left something foreign in the abdominal cavity, for the immunizing influence of the peritoneum would cover a good many defects in technique.

The Anemic Habit, with Special Consideration of Its Treatment.—This paper, by Dr. HARLOW BROOKS, was published in the *JOURNAL* for July 20, 1912.

Dr. J. HERMAN BRANTH said that static electricity was a great promoter of metabolism, and he had found that when employed in conjunction with the administration of iron it greatly assisted in the absorption of the latter. This was shown by the fact that stools which were much blackened under the use of iron alone, became free from such discoloration when the electricity was given in conjunction with it. Static electricity was thus a very useful agent in the treatment of anemia. In this condition tissue change was what was needed, and electricity was one of the remedies which would give results. He was accustomed to using both forms, though the high frequency current was undoubtedly the more valuable. As to the form of iron to be used, he had found the arsenate, in doses of one tenth to one eighth grain, one of the most serviceable.

Dr. THOMAS DARLINGTON said he agreed with Doctor Brooks that sunlight was one of the most valuable agents at our command in the treatment of anemia. He had first become impressed with its great usefulness when serving as interne at the Woman's Hospital under Doctor Emmet, who had great faith in his sun baths.

Dr. S. V. HAAS said that in infants there was a better opportunity to judge of faults in metabolism than in adults. In older children he thought one of the most prolific sources of anemia was dental caries.

The Treatment of Diphtheria.—Dr. THOMAS DARLINGTON, having referred briefly to the etiology and pathology of the disease, said that diphtheria was, then, a true toxemia, and our treatment was based principally upon the idea of neutralizing the toxine resulting from the Klebs-Loeffler bacillus, and also of employing such additional means as might keep the patient from succumbing to heart failure, and assist Nature to repair the damaged organs. In speaking of the matter of prophylaxis, he said that enlarged tonsils and adenoids predisposed to inflammatory diseases of the throat, and children having such ailments should be treated; though, during epidemics, much caution should be used in removing tonsils and adenoids. Medical school inspection should be established in all communities, and the attention of parents called to physical defects. All cases of diphtheria should be quarantined, preferably in a hospital, and for this reason hospitals for diphtheria should be established in every built up com-

munity. He then gave various other directions for precautions to be employed in the sick room.

When a case of diphtheria developed, all other members of the family should receive an immunizing dose of antitoxine as soon as the diagnosis had been made. For all persons over one year the dose should be at least 1,000 units, and where the exposure had lasted five or six days, 1,500 units. Infants between six months and a year old should receive 500 to 1,000 units, depending on the duration of their exposure, while the dose for those under six months should be graduated, according to age, down to about 100 units for those only a few days old. These doses might be given with an ordinary hypodermic syringe. Constitutional symptoms could, as a rule, be disregarded, for at most, with the antitoxine at present employed, they amounted only to a transient rash, with a slight rise in temperature. In but one case, out of 15,000 treated, had serious symptoms been noted. The advantages of immunization were well illustrated in the record of the New York city health department, which showed that out of over 80,000 immunized, only in 182, or 0.2 per cent., diphtheria developed, while of these 182, only one died.

It was frequently necessary to repeat the dose, and the indications for this were: 1. If after twenty-four hours the membrane was spreading, or did not show signs of curling at the edges; 2, if the general symptoms were not improved; 3, the mental apathy being the same or more marked. The latter was an extremely valuable guide, and in cases where sufficient antitoxine had been given the improvement in this was more rapid than that of any other symptom. In croup cases the dose should be repeated if the evidences of obstruction were not less marked. In all instances the second dose should be as large as the first. The indications for the third and fourth doses were the same as for the second, though the intervals between the second and third, and between the third and fourth, could be reduced to twelve hours. The injection should be done with the strictest aseptic precautions, and in selecting the site for it two factors were to be taken into consideration, viz., sufficient loose areolar tissue to reduce the tension to a minimum, and as little interference as possible with the patient's obtaining a comfortable position in bed. A region meeting these indications was the midaxillary line, at or about the level of the nipple line. The injection should be made well under the skin, and after it an alcohol dressing should be applied and continued for twenty-four to thirty-six hours. Anaphylaxis sometimes occurred. The symptoms as a rule were not very severe, but in exceptional instances death might result. Injections repeated at short intervals never caused serious symptoms, but if an interval of ten days or more elapsed between the injections, grave results might ensue.

Local treatment was sometimes called for, and the best agent for this purpose was normal salt solution at a temperature of 110° F. Cases where the larynx was involved, however, should never be irrigated, as the coughing caused by this might bring on spasm of the glottis; necessitating intubation or tracheotomy. In these cases intubation should be delayed as long as it could be with safety. As to the time when the procedure should be undertaken, no posi-

five rules could be set down. The condition of the heart, as well as the amount of dyspnea, should be carefully watched. All patients with severe croup which had not been intubated should be seen six and twelve hours after the injection of antitoxine, and the parents told of the danger signs. Efficient poulticing or the use of hot cloths would sometimes relieve the dyspnea for an hour. The operation of intubation should never be attempted by any one until he had had considerable practice on the cadaver and trained his finger to recognize the landmarks of the throat.

The diet should consist of milk alone until the throat was clear of membrane and the pulse below 100, and the milk diet should be continued longer if albumin was found in the urine. The mildest cases should be kept in bed for at least ten days, and at first the patient might be allowed to sit up but for a short time. In the severer cases sudden death from acute heart failure could be guarded against only by keeping the patient quiet for a considerable period, and with the pulse rate of a child over 100, it was extremely dangerous to allow it out of bed. Intubated patients should be fed very slowly at first, and with infants a good plan was to use a minim graduate and feed through the angle of the mouth.

The chief complication of diphtheria was myocarditis, a condition much more marked when the pharynx was involved than in pure croup cases. Strychnine and caffeine were of the most value, and in cases of sudden collapse a hypodermic injection of, nitroglycerin, repeated if necessary and followed by strychnine, gave the best results. Having spoken of cervical adenitis, otitis media, and bronchopneumonia, he took up the matter of postdiphtheritic paralysis, stating that with the more general use of antitoxine, this sequel was becoming less frequent. Here strychnine should be pushed to the limit of tolerance, and iron was also of service. With injection of diphtheria antitoxine, as suggested by Roux, he had had no personal experience. Kidney involvement was seen very frequently in diphtheria, but the condition seldom became permanent. Diuretics were not indicated, and their free use might result in setting up a true nephritis.

Dr. C. A. CLINTON said he could only corroborate the views expressed by Doctor Darlington. The dose of antitoxine used was often far too small. He believed that 10,000 units should be the initial dose in ordinary cases, and that the immunizing dose should be from 500 to 1,500 units. As to the matter of repetition, if a dose of proper size were given on the first or second day of the disease, a second dose was rarely necessary. If a second dose seemed called for, it should not be given until at least twenty-four hours after the first; but between the second and third dose (when this was necessary) there should not be so long an interval. After the fifth or sixth day, when the system had become profoundly infected, it was rare to get any effect from the antitoxine, and the large doses of it might then prove harmful instead of beneficial.

Dr. CHARLES HERMANN said that in the use of antitoxine the tendency had been toward much larger doses than at first. As shown by Doctor Darlington,

the dangers from this agent had been greatly exaggerated. The immunization caused by it was not absolute, especially if those to whom the immunizing dose had been given remained in direct contact with the diphtheria patient. Isolation, as well as immunization, was therefore required.

Dr. I. M. HELLER said that the good effect from irrigation was only mechanical. In young children who were rebellious it was better, therefore, to get along without it, on account of the disturbance and exhaustion it produced, and depend upon the use of antitoxine alone. For keeping the mouth sweet and clean he was accustomed to use orange juice, or lemonade and sodium bicarbonate. In intubated cases great caution should be used in the giving of food after removal of the tube, and at first only very small amounts should be allowed at a time. In a case of his some years ago the child, as soon as the tube had been taken out, seized a glass of milk which was within reach, drank it off at a draught, and fell back dead.

Doctor DARLINGTON, in closing, said that the general mortality from diphtheria had been reduced seventy-four per cent, since antitoxine had come into use, and he was convinced that it could be reduced ninety per cent.

Letters to the Editor.

MENSTRUATION AFTER SALPINGO-OOPHORECTOMY.

WILDWOOD, FLA., September 8, 1912.

To the Editor:

I see on page 450 of the NEW YORK MEDICAL JOURNAL for August 31, 1912, a case reported by Findley in which menstruation occurred after both ovaries were removed, and it recalled a similar case of mine, which I report herewith. In July, 1908, I carried a patient of mine to Baltimore and Dr. Howard Kelly removed both ovaries and tubes, also the appendix. After she came home she began to menstruate. It was a surprise to me, and although I was present at the operation, I was afraid I had been mistaken, so I wrote for the record of the case to Doctor Kelly's sanatorium and got a reply that the record of the case showed complete removal of both tubes and ovaries. This patient menstruated regularly for quite a while that I know of, and when I last heard from her, she still menstruated and I was unable to convince her that both tubes and ovaries had been removed. I simply call your attention to this case on account of its similarity to Findley's.

C. L. CARTER, M. D.

"AUTOTHERAPY."

NEW YORK, September 12, 1912

To the Editor:

Permit me to state in reply to the letter of Doctor Browning regarding the use of the word "autotherapy" in your issue of August 24, 1912, that during the past four years the writer has been developing a method of treating disease by means of

substances produced by the infected animal organism. The writer called this method of therapy autotherapy. The word autotherapy has long been used with a very different meaning, viz., "the spontaneous cure of disease" or "the cure of disease by self limitation." The meaning of the word in the sense the writer uses it is, "a special method or system of curing disease with the products resulting from the action of the infecting agent upon the human body by the physician." The old definition is, "the self limitation or cure of disease without the aid of the physician." There is no need of confounding these two definitions; they are widely different. Doctor Browning and Doctor Lintz have without credit used the method previously developed by me, and in addition have employed the descriptive term "autotherapy" with the exact special meaning I gave it; they apparently also claim originality for work previously done by the writer. When, months after several published descriptions appeared in reputable medical journals, their attention was courteously called to this omission, Doctor Browning says, in defense of his position, "autotherapy, a convenient general designation, rather than a name for any single or special method." That is just the point, he uses the word, autotherapy, to designate a "single or special" treatment by the physician. That there may be no misunderstanding regarding this controversy, I would offer the following definitions from the various dictionaries: *Gould's Dictionary*, 1910: The spontaneous cure of disease; *Dorland's Dictionary*: The spontaneous cure of disease; *Gattel's Dictionary*, 1911: The cure of disease by self limitation or the spontaneous cure of disease; *Stedman's Dictionary*, 1911: 1. Self treatment, 2. Spontaneous cure; *Foster's Dictionary*, 1888: The spontaneous cure of disease; *New Sydenham Society Lexicon*, Vol. I: The self cure of disease.

The foregoing definitions are all that are given in these standard works on the subject. They show conclusively that the accepted definition of the word, autotherapy, does not convey the meaning advanced by me in all my articles, and Doctor Browning's letter shows he also knew the word did not have this special meaning.

CHARLES H. DUNCAN, M. D.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

1 Textbook of Pathology. For Students of Medicine. By J. GEORGE ADAMI, M. A., M. D., F. R. S., Strathcona Professor of Pathology, McGill University, and Advisory Pathologist to the Montreal General and the Royal Victoria Hospitals, etc., and JOHN McCRAE, M. D., M. R. C. P. (Lond.), Lecturer in Pathology and Clinical Medicine, McGill University, Senior Assistant Physician, Royal Victoria Hospital, etc. Illustrated with 304 Engravings and 11 Colored Plates. Philadelphia and New York: Lea & Febiger, 1912. Pp. x-759. (Price, \$5.)

When *The Principles of Pathology* was published some four years ago, it was felt that while the practitioner with ample time and some knowledge of the subject was at last provided with a work on pathology, the medical student was still without a suitable textbook. The publication of

the present volume, of medium size, supplies this want. As a textbook, this work is probably unequalled; it is authoritative and scholarly, and is marked by a distinct originality of plan, following in its general arrangement the larger work. The first half of the book deals with general pathology, and the last half with special and systemic pathology. We are pleased to note that the authors devote as much space to the general as to the special pathology; this, though somewhat unusual, is as it should be. The general plan is thus outlined in the preface: "We have endeavored first and foremost to make clear and intelligent what is known concerning the deeper meaning of morbid states, and have not hesitated to sacrifice lists of data and their names. . . . The all important matter is to provide and familiarize the student with the working drawings of our science; once he has these in his head it is a comparatively simple matter for him to pigeonhole mentally new facts into their proper places as they come pouring in upon him in the wards and dead house, in his reading and lectures." We have read the first part of the book with most unusual interest; and students who make this work their textbook are indeed to be congratulated. It is somewhat of a novelty to find a textbook, particularly one on pathology, that is at once scientific in subject matter and attractive in style. The general practitioner who has been out of medical school for a few years will experience a most agreeable shock on reading this volume, and will obtain a fresh and vigorous grasp of the general principles on which scientific medicine is founded. This book is one of the most important medical publications of the year, and will take a leading place among the standard works on pathology.

Essays on Genitourinary Subjects. By J. BAYARD CLARK, M. D., Assistant Genitourinary Surgeon to Bellevue Hospital, Consulting Genitourinary Surgeon to the Elizabeth General Hospital, etc. New York: William Wood & Co., 1912. Pp. 174. (Price, \$1.25.)

This volume is a collection of essays relating chiefly to cystoscopy and to the medical and sociological aspects of gonorrhea. Most of them have been published in medical journals and some read before medical societies. The author's presentation of his subject is a pleasant one and sometimes exhibits a very delicate humor, as witness the following: "Next in frequency to the urethra as an exit for the pus, come the rectum and the perineum in the order given. In Segond's collection of 102 cases, perforation occurred sixty-four times into the urethra, forty-three times into the rectum, fifteen times into the perineum, eight times into the ischio-rectal space, three times in the inguinal region, twice through the obturator foramen, and once each through the navel, through the ischiatic foramen, at the border of a false rib, into the abdominal cavity, and into the space of Retzius. The after results of prostatic abscess may be chronic suppuration, neurasthenia, impotencia generandi, stricture of the rectum, etc. It is to be borne in mind that besides the complications which not infrequently attend suppurative prostatitis the mortality is considerable. In the 102 cases of Segond's referred to above, there was a thirty-four per cent. death rate. This is, however, considered very much too high according to other observers." Although no attempt is made to cover the subject thoroughly the author's touch is frequently illuminating, always sane and conservative. That the chapters are up to date is shown by the very titles: On What is New in Genitourinary Surgery; Gonococic Infections and the Physician's Responsibility; Is Genitourinary Surgery Justified as a Special Branch of Medicine? Some Necessary Principles in the Diagnosis of Surgical Conditions of the Upper Urinary Tract; Comparative Value of Some Urethral and Other Germicides; The By Ways of Prostatectomy.

The frequent appearance nowadays of selected essays of this sort is an encouragement to those of us who contribute to medical journals. We trust the medical public may realize the importance of such works and buy them in great numbers so that our turn may perhaps come soon.

Das Asthma. Von Dr. WOLFGANG SIEGEL, Bad Reichenhall, Jena: Gustav Fischer, 1912. Pp. vi-164.

In this volume the author gives a detailed and clear presentation of the subject. The first eighty-four pages are given over to a discussion of the experimental and theo-

retical side of the question and the predisposing causes; after reviewing the various theories the author gives his opinion. He states that the present idea is that the condition known as asthma rests upon abnormal processes in the nervous mechanism. The peripheral or psychic irritations are conveyed to the breathing centres. Some authors, indeed, speak cautiously of a central organ. The centres reply to the stimulation by impulses which pass to the lungs along the centrifugal (motor or secretory) branches of the vagus. In the lung they become manifest in the clinical picture of an asthmatic attack, this being characterized by its sudden appearance, dilatation of the lung with secondary downward displacement of the diaphragm, the expiratory dyspnea, and sibilant râles. Asthma is itself defined as a reflex neurosis, characterized by the typical asthmatic attack. The clinical part is dealt with fully, pathological anatomy, symptomatology, diagnosis, and prognosis. Then follow some fifty pages in which the treatment is given in detail, that of the attacks, as well as the prophylaxis and after treatment. This publication is distinctly valuable and gives a very up to date presentation of an important condition.

Outlines of Early Development. For Obstetric Students. By R. W. JOHNSTONE, M. A., M. D., F. R. C. S. E., M. R. C. P. E., Assistant to the Professor of Midwifery, University of Edinburgh; Obstetric Physician to the New Town Dispensary, etc. With a Preface by Sir J. HALLIDAY CROOM, Professor of Midwifery, University of Edinburgh. Edinburgh: John Currie, 1911. Pp. 23. (Price, 1s. 6d.)

This brief work, of only twenty-three pages, consists of a very concise and careful sketch of the early life history of the human ovum, with a preface by Sir J. Halliday Croom, professor of midwifery, University of Edinburgh, which in itself is sufficient evidence of the quality of the book. A simple and connected outline of the facts of embryology essential to a thorough understanding of the science of obstetrics, is given, together with clean cut illustrations corresponding with the various phases in the process of development, from fertilization to, and including, the development of the placenta. The last chapter concludes, with the state of development of the fetus at each period of four weeks. The excellent presentment of the subject should make the book especially valuable to medical students.

Die Erkrankungen des weiblichen Genitales in Beziehung zur inneren Medizin. Von Priv. Doz. Dr. A. BLAU, Dr. R. TH. JASCHKE, Priv. Doz. Dr. FR. KERMAUER, Prof. Dr. L. KNAPP, Dr. V. KROPH, et al. Redigiert von Prof. Dr. L. VON FRANKL-HOCHWART, Prof. Dr. C. VON NOORDEN, Geh. Medizinalrat Prof. Dr. A. VON STRÜMPF. I. Band: Die Erkrankungen des Herz-Gefässapparates, des Harn Apparates, des Respirations Apparates, der Knochen und Gelenke, des Blutes, des Stoffwechsels und der inneren Sekretion, des Intestinaltraktes. Mit 12 Abbildungen. Wien und Leipzig: Alfred Holder, 1912. Pp. XVI-604.

The book before us is volume one of a work which promises to be one of the greatest studies on this subject. It is dedicated to the memory of Alfons von Rosthorn, who died when professor of gynecology at the University of Vienna, after a career which would have been one of the most brilliant if it had not been cut short by a sudden death. The reason for dedicating the book to von Rosthorn was that it was really the latter's idea to publish such a work, and one of the last medical letters which he wrote was the programme for this scientific compendium. Von Rosthorn had always insisted, in his lectures and in his practice, that the gynecologist should examine not only the local disease of his patient, but also the patient herself, and this examination should take into consideration, not only the bodily condition, but also the mental attitude of the subject. Based upon this programme his friends L. von Frankl-Hochwart, C. von Noorden, and A. von Strümpf, have produced with the assistance of many noteworthy physicians a book which stands by itself. In the present volume we find nine chapters which deal with the relation of the heart and circulation apparatus to the female sexual organs, of the urinary and respiratory apparatus to these organs, diseases of the bones and joints and their effect upon woman, diseases of the blood and the

blood forming organs, the importance of the female genitals to the entire organism, and the relation between the inner secretory elements to the other blood glands, the mutual relation between anomalies of the constitution and the changes in the female genitals, the relation of the female genital organs to the liver, and an essay on the digestive canal, including the peritoneum. Each of these chapters has a full bibliography referring to the subject, while an index for the entire book is promised at the end of the second volume. To go into detail, and to point out interesting data would lead the reviewer too far. We can only say the book is worthy of the name of the authors. It is not only instructive but it is written throughout in such a style that a physician can read it not only for study, but also for recreation. As the price is not prohibitive, we hope that the book will find its way into many offices.

Das subaquale Innerebad. Von Privatdozent Dr. ANTON BOSCH, k. u. k. Stabsarzt, ordentliches Mitglied des Militär-sanitätskomitees, Lehrer an der militärärztlichen Applikationsschule und Prosektor am Militärleichenhof in Wien. Unter Mitwirkung von Dr. OTTO VON AUFSCHNAITER, Chefarzt der städtischen Kuranstalt in Baden bei Wien. Zweite, vermehrte Auflage. Mit 10 Abbildungen im Text. Leipzig und Wien: Franz Deuticke, 1912. Pp. IV-114.

Under *subaquale Innerebad* the authors understand direct flushing of the large intestine, including the appendix and the lower loops of the small intestine. Scientific reasons, anatomical and physiological, are given for such treatment, together with indication and application, and a description is added of the authors' bowel cleaner, an instrument specially devised for the intestinal bath.

Meetings of Local Medical Societies.

TUESDAY, September 25th.—New York Dermatological Society; Metropolitan Medical Society of New York city; Washington Heights Medical Society, New York; Alumni Association of Seney Hospital, Brooklyn; Buffalo Academy of Medicine (Section in Pathology); Rome Medical Society.

WEDNESDAY, September 25th.—Medical Union, Buffalo.

THURSDAY, September 26th.—Bronx Medical Association.

FRIDAY, September 27th.—New York Society of German Physicians; Manhattan Medical Society; Hospital Graduates' Club.

SATURDAY, September 28th.—Lenox Medical and Surgical Society.

Official News.

Public Health Service Health Reports:

The following cases of and deaths from cholera, yellow fever, plague, and smallpox were reported to the surgeon general of the United States Public Health Service during the two weeks ending September 13, 1912.

CHOLERA.—FOREIGN: Austria-Hungary, July 12-22, 1 case, 1 death; China, present; (Siam) July 20-23, 1 case, 1 death; (Canton) August 1-18, 1 case, 1 death; (Batavia) September 12, present; India, present; Italy, China, July 9-29, 100 cases, 157 deaths; Italy (Sardinia), August 14-27, 10 cases, 5 deaths; Japan (Formosa), July 7-26, 6 cases, 4 deaths; Russian Empire, July 7-27, 50 cases, 7 deaths; Siam, June 9-July 13, 3 deaths; Straits Settlements, July 14-26, 14 cases, 13 deaths; Turkey, June 15-26, 6, 151 cases, 104 deaths.

YELLOW FEVER.—FOREIGN: Brazil, May 31, 2 deaths; Mexico, August 18-September 15, 1 case, 1 death; Peru, July 1-31, 1 death; Venezuela, July 1-August 17, 2 cases, 2 deaths.

PLAGUE.—INDIA: Porto Rico, August 24-September 11, 7 cases, 1 death; Philippines (Iloilo), July 8, 3 cases, 1 death.

PLAGUE.—PORTUGAL: Austria-Hungary, July 1-25, 2 cases; China, July 1-10, present; Egypt, June 4-August 8, 22 cases, 9 deaths; India, present; Indo-China, July 9-26, 1 case, 9 deaths; Java (Formosa), July 7-13, 1 case; Mauritius, June 17-23, 1 case; death; Niam, June 14-July 13, 1 death; Straits Settlements, July 14-26, 1 case, 1 death.

SMALLPOX.—UNITED STATES: Colorado, July 1-11, 40 cases, 4 deaths; Colorado, August 1-31, 2 cases; Michigan, June 1-30, 6 cases; July 1-31, 13 cases; Minnesota, May 28-July 29, 10 cases; New Jersey, August 1-31, 1 case; Oklahoma, June 1-30, 4 cases; South Dakota, July 1-31, 1 case; Utah, July 1-31, 8 cases; Vermont, August 1-31, 4 cases.

SMALLPOX.—FOREIGN: Algeria, June 1-31, 23 cases; Austria-Hungary,

gory, July 14-August 10, 9 cases; *Brazil*, May 16-July 27, 5 cases, 21 deaths; *Canada*, August 18-23, 1 case; *Chile*, July 28-August 3, 8 cases; *China*, present, *France*, July 13-1, 1 death; *Germany*, August 2-10, 1 case; *India*, present; *Indo China*, July 9-22, 4 cases, 1 death; *Italy*, July 1-August 10, 2 cases, 2 deaths; *Jamaica*, July 14-20, 1 case, 2 deaths; *Mexico*, June 9-August 25, 40 cases, 15 deaths; *Portugal*, August 4-10, 1 case; *Russia*, May 26-August 10, 26 cases, 10 deaths; *Spain*, June 15-July 13, 10 deaths; *South Africa* (Durban), July 21-27, 1 death; *Spain*, June 1-August 6, 8 deaths; *Strait Settlements*, July 14-20, 2 cases.

Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending September 11, 1912.

Billings, Chester, Passed Assistant Surgeon. Directed to report to the chairman of the board convened to meet at San Juan, P. R., for examination to determine his fitness for promotion to the grade of surgeon.

Clark, T., Surgeon. Directed to report at the bureau for a conference relative to the investigation of contagious and infectious diseases among Indians.

De Valin, Hugh, Passed Assistant Surgeon. Relieved from duty on the revenue cutter *McCullough* and directed to take temporary charge of the Marine Hospital at Port Townsend, Wash.

Geddings, H. D., Surgeon. Relieved from duty at Naples, Italy, to take effect about September 15, 1912, and directed to return to the United States, reporting his arrival to the bureau.

Grubbs, Samuel B., Passed Assistant Surgeon. Directed to report to the chairman of the board convened to meet at San Francisco, Cal., for examination to determine his fitness for promotion to the grade of surgeon.

Heiser, Victor G., Passed Assistant Surgeon. Directed to report to the chairman of the board convened to meet at Manila, P. I., for examination to determine his fitness for promotion to the grade of surgeon.

Kempf, Grover A., Assistant Surgeon. Directed to proceed to Ellis Island, N. Y., and report to the chief medical officer for duty.

Loughran, J. J., Acting Assistant Surgeon. Granted six months' leave of absence, without pay, from September 1, 1912.

McGinnis, R. H., Acting Assistant Surgeon. Granted thirty days' leave of absence, without pay, from September 1, 1912.

McMullen, John, Passed Assistant Surgeon. Directed to proceed to Lexington, Ky., for a conference with Dr. J. A. Stucky relative to the control of trachoma and to accompany him to Knott, Perry, and such other counties as may be necessary in the inspection of schools and clinics.

Parker, Herman B., Passed Assistant Surgeon. Directed to appear before the American Consul General at Guayaquil, Ecuador, by whom questions prepared by the board convened to meet at the bureau September 3, 1912, will be submitted, to determine his fitness for promotion to the grade of surgeon.

Preble, Paul, Assistant Surgeon. Directed to proceed to Ellis Island, N. Y., and report to the chief medical officer for temporary duty.

Safford, Victor M., Acting Assistant Surgeon. Detailed to attend the Fifteenth International Congress on Hygiene and Demography, to be held in Washington, D. C., September 23 to 28, 1912.

The following passed assistant surgeons were directed to report at the bureau on Tuesday, September 3, 1912, at 10 o'clock a. m., to the chairman of the board of commissioned medical officers for examination to determine their fitness for promotion to the grade of surgeon: Claude H. Lavinder, John McMullen, Rudolph H. von Ezdorf, Milton H. Foster, Leslie T. Lumsden, John F. Anderson, Mark J. White, L. D. Fricks, and John W. Kerr.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending September 14, 1912:

Allen, William H., Lieutenant, Medical Corps. Reported for duty at Camp Marfa, Texas, on September 7th; left Fort Sam Houston, Texas, same date.

Blodgett, H. H., Lieutenant, Medical Corps. Ordered to Fort Robinson, Neb., to accompany troops to Chadron, Neb., and Hot Springs, S. D.

Bushnell, George E., Colonel, Medical Corps. Left Fort Bayard, N. M., on detached duty en route to Vancouver Barracks, Wash.

Carr, William B., Lieutenant, Medical Corps. Leave of absence extended five days.

Darnall, Moses

H., First Lieutenant, Medical Reserve Corps. Granted leave of absence for one month and ten days.

Fauntleroy, P. C., Major, Medical Corps. Granted ten days' leave of absence.

Geddings, Edward F., Major, Medical Corps. Left Fort Snelling, Minn., on September 5th on fourteen days' leave of absence.

Harris, Jesse R., Captain, Medical Corps. Leave of absence extended ten days.

Hill, Eben C., Captain, Medical Corps. Granted twenty-one days' leave of absence from September 12th.

Jackson, Thomas W., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Washington, Md., and ordered to his home; relieved from active duty in the medical reserve corps on October 12, 1912; granted leave of absence to and including October 12th.

Kellogg, Preston S., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Yellowstone, Wyo., and ordered to his home; granted leave of absence from September 17th to and including November 19th; resignation accepted, to take effect November 19, 1912.

Pulver, Arthur L., First Lieutenant, Medical Reserve Corps. Resignation accepted, to take effect September 6, 1912.

Wallace, George S., First Lieutenant, Medical Reserve Corps. Leave of absence extended thirty days.

Wood, Neal N., Lieutenant, Medical Corps. Ordered to Fort Huachuca, Ariz., for temporary duty.

Births, Marriages, and Deaths.

Married.

Baker-Pelkie.—In New York, on Tuesday, September 10th, Dr. Amos Trevalle Baker and Mrs. Edna Guerriere Pelkie.

Connor-Carmichael.—In Cambridge, Mass., on Wednesday, September 4th, Dr. John H. F. Connor, of Boston, and Miss Alice V. Carmichael.

Gookin-Scott.—In Boston, recently, Dr. Edward Richard Gookin and Miss Eileen H. Scott.

Maldies-Watkins.—In Baltimore, on Saturday, September 7th, Dr. Howard J. Maldies and Miss Louise Cecil Watkins.

Moon-Rhodes.—In Estherville, Iowa, on Wednesday, September 4th, Dr. Arnold Robert Moon and Miss Jennie Culver Rhodes.

Rahter-Mathewson.—In Atlantic City, N. J., on Monday, September 2d, Dr. John Howard Rahter, of Harrisburg, Pa., and Miss Helen Mathewson.

Rainey-Keefe.—In Poulton, Vt., on Tuesday, September 3d, Dr. John Joseph Rainey, of Troy, N. Y., and Miss Helen C. Keefe.

Reimer-Warner.—In Ellensburg, Wash., on Monday, September 2d, Dr. Hugo Bruno Carl Reimer, of Boston, Mass., and Miss Lucile Elizabeth Warner.

Stimson-Dresher.—In Philadelphia, on Monday, September 9th, Dr. Cheney Metcalfe Stimson and Miss Ellen Drexel Dresher.

Van Marter-MacDaniels.—In Newfield, N. Y., on Wednesday, September 18th, Dr. James Howard Van Marter, of Groton, and Miss Jane Barger MacDaniels.

Died.

Barbour.—In Falmouth, Ky., on Sunday, September 8th, Dr. James H. Barbour, aged eighty-eight years.

Butts.—In Chuckatuck, Va., on Friday, September 6th, Dr. George W. Butts, aged sixty-nine years.

Campbell.—In Martinsburg, Pa., on Sunday, September 1st, Dr. Tobias Campbell, aged fifty-five years.

Foertmeyer.—In Cincinnati, Ohio, on Friday, August 30th, Dr. Charles H. Foertmeyer, aged seventy-one years.

Grober.—In Wadena, Minn., on Monday, September 2d, Dr. George Buntin Grober, of Kellhiher.

Hebard.—In Asheville, N. C., on Saturday, September 7th, Dr. Ezra Armstrong Hebard, aged eighty-two years.

Ireland.—In Francisco, Ind., on Tuesday, September 3d, Dr. John Morrison Ireland, aged eighty-seven years.

Lewis.—In Albany, N. Y., on Tuesday, September 10th, Dr. Frank Edward Lewis, aged fifty-seven years.

Nugent.—In Milwaukee, Wis., on Saturday, September 7th, Dr. L. M. Nugent.

Quimby.—In Lynn, Mass., on Monday, September 9th, Dr. William Josiah Quimby, aged seventy-nine years.

Smith.—In Pottersburg, Ohio, on Saturday, August 31st, Dr. Alexander Smith, aged sixty years.

Smith.—In Minneapolis, on Sunday, September 1st, Dr. Charles A. Smith, aged forty-eight years.

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WHOLE No. 1765.

Original Communications.

DENTAL HYGIENE FOR THE PUPILS OF PUBLIC SCHOOLS.*

By S. ADOLPHUS KNOFF, M.D.,
New York.

Professor of Medicine, Department of Physiotherapy,
Post-Graduate Medical School and Hospital.

In the beginning of this year, Professor Dana, chairman of the Health Committee of the New York City Club, intrusted me with the task of making a report on the facilities which our public dispensaries offered for the care of school children, needing dental attention, but unable to pay for such care. Our venerable Professor Jacobi, who graces this congress by being chairman of the Section in Children's Diseases, and who is one of the most active members of the Health Committee of the New York City Club, after having heard my report, asked me to make it the basis of a paper on the subject before this section. I thank him for the honor which he has thus conferred upon me, although I very much fear that I can offer little, if anything, that is new. However, the results of our procedure in New York may perhaps stimulate other cities to make inquiries along the same line and thus help preserve the health of the children, and my modest effort may prove in the end not to have been entirely in vain.

To ascertain the status of facilities for dental care with as much accuracy as possible, I sent a letter of inquiry to the superintendents of the thirty-four important general and special dispensaries of New York city. The four questions were as follows:

1. Does your dispensary have a dental department?
2. If so, how many dental surgeons are in attendance, and for how many hours a week and at what time are they engaged in giving their services?
3. Do the patients have to pay for the material for filling teeth, etc., or is it given gratuitously?
4. If there is no dental service attached to your dispensary, would you be willing to establish one and arrange special hours for school children so that the time for visiting the dispensary may not conflict with school hours?

To the thirty-four letters of inquiry I received thirty-three answers, which appear in full in this

report. Many answers are highly instructive. The summary of them is as follows:

Have dental facilities	15
Have no dental facilities	18
Are willing to establish dental department	8
Are unwilling or unable to establish one	9
Have asked for suggestions with a view to establishing one	2
Do only extracting	5
Do also filling	7
Do work gratuitously, or charge those able to pay	8
Charge for material used	7
Have hours suitable for school children	7
Have hours unsuitable	6
Are willing to increase or change hours	2
Are unwilling or unable to change hours	2

Of the fifteen which have dental facilities, one has 2 hours weekly, with 1 dentist; one, 12 hours, with 20 dentists; one, 4 hours, with 2 dentists; one, 6 hours, with 5 dentists; one, 12 hours, with 1 dentist; one, 4 hours, with no regular dentist; one, 24 hours, with 1 dentist; one, —hours, with 1 dentist; one, 6 hours, with 2 dentists; one, 18 hours, with 16 dentists; one, 6 hours, with 1 dentist; one, 12 hours, with 2 dentists; one, 15 hours, with 2 dentists; one, 3 hours, with 3 dentists, and one, 2 hours, with no regular dentist.

A gratifying result of one of my letters of inquiry was an answer received, April 15th, from Dr. Thomas Howell, of the New York Hospital, to the effect that they had now established a dental clinic which is in operation daily from 9.30 a. m. to 12 m. Tuesdays, Thursdays, and Saturdays, one dental surgeon being in attendance. The patients are not required to pay for the materials for filling teeth, etc.

To the report comprising sixteen dispensaries independent or attached to hospitals, we must add that there exist three dental clinics maintained by the Children's Aid Society. These are kept fully employed with the care of the teeth of the children attending the society's schools. Last, but not least, there is one free dental clinic, being the health department's institution. On January 15, 1910, this first free dental clinic, exclusively for the school children of New York city, was opened at 449 East 121st Street, as a result of the efforts of the Honorable Peter T. Barlow and a number of his friends. The entire amount of money needed to equip and maintain this clinic was contributed with the understanding that the department of health should detail a nurse to have general supervision over the children, and that only those children should be treated who attended the public schools and whose parents were too poor to pay for the treatment. Applicants are visited at their homes by the nurse, who investigates the financial status of the family and determines whether or not free treatment is justifiable. The nurse also assists the dentists dur-

*Read before Section 3, Hygiene of Infancy and Childhood, School Hygiene, of the International Congress on Hygiene and Demography, Washington, D. C., September 25, 1912.

Name	Question I. Answers to	Question II.	Question III.	Question IV and Remarks.	
	Very fine dental department	One dental surgeon, Tuesdays, 3:5 p. m.	10 cents for extracting, 25 cents for filling	A desire to enlarge the clinic.	Remarks: "We have demonstrated the great need of dental care of the teeth of school children, some coming from Harlem to us for treatment, and we have been able to do so only by the aid of the public. Unless they are paid a salary or they will soon be in as bad a plight as the medical profession, who do so much in dispensaries and hospitals without compensation—saddling a burden which should be paid or by the public or by the school. We have been unable to get the public to contribute to the clinic, and we have been forced to report by George O'Hanlon, M. D., general medical superintendent."
Archie Dispensary and Parents Memorial Clinic, 308-312 West Fifty-ninth street	Has dental department	One dental surgeon, Tuesdays, 3:5 p. m.	10 cents for extracting, 25 cents for filling	No charges	H. Goldman, M. D., general medical superintendent.
Bellvue and Allied Hospitals, Outpatient Department, Twenty-sixth street and First avenue	No dental department	Two dental surgeons, Tuesdays, 3:5 p. m.	No charges	No charges	"Plans are being considered for the enlargement of our dispensary and when that is done, a dental department will undoubtedly be added to the service."—Louis J. Frank, superintendent.
Both Legal Hospital Dispensary, Monroe, Jefferson, and Cherry streets	No dental department	Two dental surgeons, Tuesdays, 3:5 p. m.	No charges	No charges	"For various reasons, we would prefer not to establish a dental department in our hospital, but we are afraid not as the dental department we had has been discontinued."—T. J. Kearns.
Central University Medical College Dispensary, First avenue and Twenty-seventh street	No dental department	Two dental surgeons, Tuesdays, 3:5 p. m.	No charges	No charges	"We have given consideration in reference to establishing a dental department, and we have been very anxious to receive any suggestions from the public, but we have been unable to do so."—J. E. Egan, superintendent.
The Hemet Dispensary, Twenty-third street, corner Flower Hospital Outpatient Department, 429 East Sixty-third street	No dental department	Two dental surgeons, Tuesdays, 3:5 p. m.	No charges	No charges	"The dental clinic is used only for patients in the hospital and for dispensary children who come for some other condition."—J. E. Egan, superintendent.
Fedham Hospital Dispensary, Corona avenue and Southern boulevard	Yes	Two dental surgeons, Tuesdays, 3:5 p. m.	No charges	No charges	"We have been very anxious to receive any suggestions from the public, but we have been unable to do so."—J. E. Egan, superintendent.
German Hospital and Dispensary, Seventy-seventh street and Park avenue	Yes	Two dental surgeons, Tuesdays, 3:5 p. m.	No charges	No charges	"We have been very anxious to receive any suggestions from the public, but we have been unable to do so."—J. E. Egan, superintendent.
Good Samaritan Dispensary, 77 Essex street	Yes	Two dental surgeons, Tuesdays, 3:5 p. m.	No charges	No charges	"We have been very anxious to receive any suggestions from the public, but we have been unable to do so."—J. E. Egan, superintendent.
Gouverneur Hospital Dispensary, Gouverneur slip	Yes	Two dental surgeons, Tuesdays, 3:5 p. m.	No charges	No charges	"We have been very anxious to receive any suggestions from the public, but we have been unable to do so."—J. E. Egan, superintendent.
Harlem Dispensary, 108 East 128th street	Yes	Two dental surgeons, Tuesdays, 3:5 p. m.	No charges	No charges	"We have been very anxious to receive any suggestions from the public, but we have been unable to do so."—J. E. Egan, superintendent.
J. H. Wright Hospital Dispensary, 131st street and Amsterdam avenue	Yes	Two dental surgeons, Tuesdays, 3:5 p. m.	No charges	No charges	"We have been very anxious to receive any suggestions from the public, but we have been unable to do so."—J. E. Egan, superintendent.
Lebanon Hospital Dispensary, Cauldwell and Westchester avenues, near East 150th street	Yes	Two dental surgeons, Tuesdays, 3:5 p. m.	No charges	No charges	"We have been very anxious to receive any suggestions from the public, but we have been unable to do so."—J. E. Egan, superintendent.
Mount Sinai Hospital Dispensary, Madison avenue and 100th street	Yes	Two dental surgeons, Tuesdays, 3:5 p. m.	No charges	No charges	"We have been very anxious to receive any suggestions from the public, but we have been unable to do so."—J. E. Egan, superintendent.
New York Dispensary, 145 Worth street	Yes	Two dental surgeons, Tuesdays, 3:5 p. m.	No charges	No charges	"We have been very anxious to receive any suggestions from the public, but we have been unable to do so."—J. E. Egan, superintendent.
New York Hospital Outpatient Department, 8 West Sixteenth street	No dental department	Two dental surgeons, Tuesdays, 3:5 p. m.	No charges	No charges	"We have been very anxious to receive any suggestions from the public, but we have been unable to do so."—J. E. Egan, superintendent.
New York Postgraduate Dispensary, Twentieth street and Second avenue	No dental department	Two dental surgeons, Tuesdays, 3:5 p. m.	No charges	No charges	"We have been very anxious to receive any suggestions from the public, but we have been unable to do so."—J. E. Egan, superintendent.
North-Eastern Dispensary, 222 East Fifty-ninth street	Yes	Two dental surgeons, Tuesdays, 3:5 p. m.	No charges	No charges	"We have been very anxious to receive any suggestions from the public, but we have been unable to do so."—J. E. Egan, superintendent.
New York Nose, Throat, and Lung Hospital and Dispensary, 229 East Fifty-seventh street	Yes	Two dental surgeons, Tuesdays, 3:5 p. m.	No charges	No charges	"We have been very anxious to receive any suggestions from the public, but we have been unable to do so."—J. E. Egan, superintendent.
Northwestern Dispensary, Ninth avenue and Thirtieth street	Yes	Two dental surgeons, Tuesdays, 3:5 p. m.	No charges	No charges	"We have been very anxious to receive any suggestions from the public, but we have been unable to do so."—J. E. Egan, superintendent.
German Poliklinik, 137 Second avenue	Yes	Two dental surgeons, Tuesdays, 3:5 p. m.	No charges	No charges	"We have been very anxious to receive any suggestions from the public, but we have been unable to do so."—J. E. Egan, superintendent.
New York Polytechnic Dispensary, 214 East Thirtieth street	No dental department	Two dental surgeons, Tuesdays, 3:5 p. m.	No charges	No charges	"We have been very anxious to receive any suggestions from the public, but we have been unable to do so."—J. E. Egan, superintendent.

Presbyterian Hospital Dispensary, Madison avenue and Seventieth street.....	No dental department.	Two surgeon dentists to 4 p. m. daily, Tuesday and Friday evenings 7 to 8:30	to ten, if they can afford to pay	"We could not under present dispensary conditions. Lack of space forbids."
Roosevelt Hospital Dispensary, Fifty-ninth street near St. Bartholomew's Clinic, 214 East Forty-second street.....	No dental department			Not answered.
St. Luke's Hospital Outpatient Department, Amsterdam avenue and 114th street.....	No dental department			Not answered.
St. Mark's Hospital Dispensary, 177-179 Second avenue.....	No dental department			"We should be glad to establish a dispensary for school children in the department, but unfortunately our dispensary service is already too large for our quarters. Later on, when we can secure more room for the purpose of establishing such a dispensary, we will give our earnest attention."—Benjamin J. Tilton, M. D., president.
St. Vincent's Hospital Outpatient Department, 153 West Eleventh street.....	No dental department			"We are not prepared to undertake the expense attached to the opening of a new clinic such as you suggest. Regretting that our present quarters are too small to meet this desirable charity, I am, etc."—Sister Maria Isidon.
Trinity Dispensary, 200 Fulton street.....	No dental department			"I am at a loss to see how suitable accommodation could be arranged for a dentist."—Bennett S. Beach, M. D., physician in charge.
New York University and Bellevue Hospital Dispensary, Twenty-sixth street and First avenue.....	No dental department			"I desire to say that we do not have such a department and that it is not our intention or desire to attach to the dispensary such a service."—Egbert Le Fevre, M. D., dean.
Vanderbilt Clinic, Sixtieth street and Amsterdam avenue.....	Yes	Three surgeon dentists, Wednesday, 9:30 to 10:30 a. m., Friday, 9:30 to 10:30 a. m., Extracting only, Monday and Friday, 4:30 to 5 p. m.	A small charge	Not answered. Charles B. Grimsdew, superintendent.
West Side German Dispensary, 358 West Forty-second street.....	Yes		Free; no accommodation for filing teeth	"Consult Dr. Homer Gibney."
Wilkes Dispensary (St. Mary's Free Hospital), 415 Ninth avenue.....	No dental department		Charges for material used	"We could not support for a dental service under present conditions."—Sister Superior.
Ninth Avenue Dispensary, 205 East Twenty-third street.....		9 to 12 daily		"We treat a large number of children every Saturday, as that day we have no patients for the day, and we have no means of doing everything possible for them."—E. B. Tripp, D. D. S., chief.

ing the treatment hours and keeps all cases under supervision to see that the children return regularly for treatment and that they are thoroughly instructed in the care of the mouth and teeth.

The clinic proper occupies two rooms, one being used for the patients who are waiting for examinations or treatment, and the other equipped with the necessary appliances, including two dental chairs. Two dentists are regularly employed, and are both on duty every afternoon from Monday to Friday inclusive, and on Saturday mornings.

During the first year of its existence this clinic treated 1,129 children. It gave 5,925 treatments, including 4,861 fillings, 1,499 extractions, and 469 cleanings. Each child treated had its teeth put in perfect condition before it was discharged. And what was the expenditure for rendering 1,129 children, at least as far as their dental condition is concerned, healthy, happy, and efficient? The total expenditure, including equipment, was \$4,631.31. Deducting the cost of installation (\$1,129.61) with slight depreciation of value, the average cost of complete dental treatment for each child was \$3.10; including equipment, the average cost per capita was \$4.10.

A little over two years ago I read upon invitation at the meeting of the Dental Hygienic Conference and Exhibit, in New York, a little paper entitled *The Relation of Modern Dentistry to the Tuberculosis Problem*. In it I ventured to state that if the condition in New York is typical of the school children in the whole United States, there must be in the schools of this country about 9,000,000 children with bad teeth. How many of these receive treatment? A very, very small percentage indeed. And what is the result of this neglect of civic obligation of the community toward its children of to-day, the men and women of to-morrow?

In the paper above referred to I expressed the conviction by which I am willing to stand to-day, that impaired digestion is often one of the first symptoms of tuberculosis, and that this impaired digestion is not infrequently due to a bad condition of the teeth. Ulcerated teeth may give entrance into the bones to tubercle bacilli accidentally inhaled or ingested, or as a result of secondary infection. Furthermore, it is almost impossible to cure tuberculous patients with no teeth, or with bad teeth.

But it is not only tuberculosis which is influenced unfavorably or favorably according to the condition of the teeth; a general malnutrition, anemia and chloroanemia, malformation of the maxillary bones resulting from the loss of teeth, enlarged and suppurating cervical glands, and many other ailments can be ascribed to the lack of dental care in childhood. To put it briefly, I would say that bad teeth, decayed teeth, or the loss of teeth during childhood, its concomitant discomfort, pain, depression of spirit, and lack of appetite produce that physiological poverty which renders the delicate system of the child, not only more prone to tuberculosis, to the invasion of the germs of serious, acute contagious diseases, such as measles, diphtheria, scarlet fever, etc., but also more susceptible to nervous afflictions, such as hysteria, chorea, and St. Vitus's dance. It must be evident that the mental and

physical efficiency of the future citizen is thus seriously impaired because of lack of proper dental hygiene and care in childhood.

To have good teeth in childhood and to care and preserve them means not only relative freedom from disease but doubtless also a prolongation of life. In recent years our life insurance companies have undertaken a very laudable campaign to educate not only their policy holders but also the public at large in the prevention of disease and the preservation of health. Realizing that the teaching of dental hygiene to their policy holders would prolong their lives and add to their health and happiness, these companies have included the care of the teeth in their health propaganda. Thus, one of our leading industrial life insurance companies has recently issued a pamphlet entitled *Teeth, Tonsils, and Adenoids*, which was written for the company by one of our greatest hygienists, the distinguished health officer of Rochester, N. Y., Dr. George W. Goler. In the introduction to Doctor Goler's work, the company makes the following statement: "To help in the work for better teeth, to instruct parents and others in the care of the children's teeth, as well as their own, to insure children against the diseases that frequently come to them because of adenoids and large tonsils, the company presents this booklet to its policy holders and to the public."

The pamphlet is a concise popular treatise, telling parents what they should do to preserve their children's and their own teeth, and in addition it calls attention to the serious consequences of adenoids and abnormally large tonsils. I will only mention a few of the very striking subjects treated in this admirable pamphlet: The baby's teeth; what makes teeth decay; what toothache means; keep all of the teeth in the jaw; what to do if the teeth are irregular and decayed; good teeth are jewels; a baby's toothbrush; chew food and have strong teeth; how to brush the teeth; tartar on the teeth; keep your own teeth until you are old; mouth breathers; breathing through the mouth not the right way; adenoids and earache; adenoids and large tonsils cause rheumatism and heart disease; easier for a child with large tonsils and adenoids to catch disease; how to tell when a child has adenoids and large tonsils; teeth, tonsils, and adenoids, and the growth of the face and body, etc.

To show the immediate results of the bad condition of the teeth in school children, I think I cannot do better than quote the following telling sentences from the very admirable report of the Division of Child Hygiene under the direction of that efficient sanitarian and lover of children, Dr. S. Josephine Baker, of the Health Department of the City of New York:

The practical results of this condition upon the school progress of the child are worth considering. There is a distinct loss of time in school, due to local pain and discomfort and to the many diseases which find their starting point in the neglect of the mouth and teeth.

Dr. Leonard Ayres, of the Russell Sage Foundation, has made a tabulation of the records of the physical examinations of 7,608 children who had been examined by the inspectors of the Division of Child Hygiene. He found that children with defective teeth progressed six per cent. more slowly in their school grades than normal children, and that whereas the average child with no defects completed eight grades in eight years, the average child with defective teeth took 8.5 years to complete the same course.

After a year's work Doctor Baker reports:

Owing to the very wide prevalence of defective teeth among school children and the utter lack of facilities in the city for free dental treatment, the department has never been able to obtain proper treatment for these children who so urgently need it. . . . At present the department lays stress upon the necessity of the so called tooth brush drills, which are given, especially to the younger children, by the nurses in the schools.

The following circular is given to the children:

DEPARTMENT OF HEALTH

THE CITY OF NEW YORK

INSTRUCTIONS TO PARENTS REGARDING THE CARE OF THE MOUTH AND TEETH

The physical examination of school children shows that in many instances the teeth are in a decayed and unhealthy condition.

Decayed teeth cause an unclean mouth. Toothache and disease of the gums may result.

Neglect of the first teeth is a frequent cause of decay of the second teeth.

If a child has decayed teeth, it cannot properly chew its food. Improperly chewed food and an unclean mouth cause bad digestion, and consequently poor general health.

If a child is not in good health, it cannot keep up with its studies in school. It is more likely to contract any contagious disease, and it has not the proper chance to grow into a robust, healthy adult.

If the child's teeth are decayed, it should be taken to a dentist at once.

The teeth should be brushed after each meal, using a tooth brush and tooth powder.

The following tooth powder is recommended: 2 oz. powdered precipitated chalk, $\frac{1}{2}$ oz. powdered castile soap, 1 drachm powdered orris root. Thoroughly mix.

This prescription can be filled by any druggist at a cost not to exceed fifteen cents.

The child should take the tooth brush and powder to the school and receive instructions from the nurse as to their proper use.

Issued by order of the Board of Health.

In this very good circular, as well as in the admirable works of Doctor Baker and Doctor Ayres. I see, however, no mention of another feature of dental pathology which should appeal more especially to parents. I refer to the irregular teeth which are neither decayed or otherwise defective, but merely cause a deformation or retarded development of the jaw, which are, however, as disastrous from a pathological point of view as they are deplorable from an esthetic point of view, particularly for young people. A poorly developed jaw may result in additional deformities of the nasal cavity and, obviously, also prevent proper mastication. Thus, a deformed jaw is sure to produce serious pathological conditions, involving the respiratory and digestive tracts.

Now, I know that the treatment of badly placed, deformed, or irregular teeth is a tedious and costly process. Orthodontia (the straightening of irregularities of the teeth) is a relatively new science, and because it takes from six months to a year, and often more, to correct dental deformities, it is at this time a matter which the health department could not undertake.

I would suggest that when the examining school physician or school dentist discovers a condition which can be corrected only by orthodontal treatment, he should make the report to the parents, emphasizing not only the pathological, but also the esthetic consequences of the noncorrection of irregular teeth. I believe there are but few parents who would not be willing to make all possible sacri-

fices to have such a condition corrected in time, particularly in young girls, and for that matter in boys as well. All parents are anxious to have good looking children.

What a large field of usefulness and practical philanthropy does this field not offer to rich or well to do lovers of children! Aside of the purely dental there should be, wherever needed, also special orthodontal clinics where the children of the poor and those of moderate means can receive gratuitously or very reasonably, the care which now can only be bestowed upon the children of well to do parents.

It is gratifying to be able to note here that, thanks to the devotion and activity of Miss Theora Carter, the president and founder of the Good Cheer Society, an orthodontal clinic for the correction of dental deformities of poor children was established in Chicago, last year. Miss Carter is at this time advocating a similar movement for "good teeth, clean teeth, and straight teeth," particularly intended for newsboys. Those interested in the work hope to see established ere long a general dental and orthodontal clinic in the Newsboys' Home of New York. Dr. George B. Palmer has already started the movement by giving talks to the newsboys on the hygiene of the teeth.

What can the members of this congress, particularly those devoted to the hygiene of children, do to ameliorate the present deplorable and almost universal lack of general dental, including orthodontal facilities for the care of children of the poor? They can make propaganda for this cause of childhood in governmental, medical, dental, and philanthropic circles. No science, no branch of medicine has made greater strides than dental surgery. While the supremacy of general medical education may not yet be claimed for the United States, and, in fact, according to recent reports by Mr. Abraham Flexner, of the Carnegie Institute for the Advancement of Teaching, does not compare at all favorably with Europe, American dental science has that singular distinction of being considered superior to European dental science. Every large European city has its American dentist, and he has, as a rule, the élite of the European clientele. I know that European dentists are all eager for a postgraduate course in one of the leading dental colleges of the United States, and one of their greatest ambitions is to add to their European degree that of an American Doctor of Dental Surgery. They very well know the prestige such a title confers upon them. Would that the time might come, and come before long, when our general medical and surgical teaching institutions in this country deserved the same prestige which our dental colleges now possess. However, our colleagues of dental surgery should also strive, as they have already done in some sections of this country, to make general dental hygiene a science familiar to the masses. Let them combine with philanthropists like Mr. Barlow and Miss Carter, and with schools and health departments such as we have in the city of New York, to prevent diseases and deformities in childhood by the multiplication of well equipped and well conducted dental dispensaries.

Bad and decayed teeth is a disease of the masses

as much as tuberculosis, and as such it must be combated, and particularly in our children at school age. Just as we have societies for the prevention of tuberculosis, for the prevention of venereal diseases, and of alcoholism, representing the three great diseases of the masses, so should we have a society for the treatment and care of children afflicted with dental diseases. This society should be composed of all classes, medical and lay people, just as are the above mentioned three societies. It would enable every one who has the children's welfare at heart to contribute according to his means. The funds thus collected would materially aid to defray the expenses of taking care of the school children's teeth. Such a National society, having for its object the care of the teeth of the school children, exists already in Austria (*Oesterreichische Gesellschaft für Zahnpflege in den Schulen*). This society is composed of high officials of the empire, statesmen, pedagogues, physicians, teachers, and people of all sorts of professions and trades. The minimum dues are two kronen (about fifty cents), and teachers have to pay only half in order to enjoy membership. Sustaining members pay fifty kronen, and founders 1,000 kronen. The Imperial Bank serves as treasurer.

In a recent appeal which this society issued, we read the following telling sentences which would show that our country is not the only one which suffers from this disease of the masses:

There are ninety-eight per cent. of children with decayed teeth in Austria; decayed teeth is a disease which might justly be called a disease of the masses; the seriousness of this affliction is alas! not sufficiently recognized; the consequences of decayed teeth are digestive disturbances, anemia, and general debility—all of which make the child, during its development, particularly susceptible to infectious diseases; urgent help is needed; the child's oral cavity needs particular care during school age.

Happy are those children whose parents are able to provide them with dental care, but unfortunate indeed are the thousands of children of the poor who are deprived of this privilege. To help these unfortunate children the Austrian Society for Dental Care for School Children has been founded and now makes a strong appeal for the establishment of dental school clinics.

I do not believe in pauperizing, and parents able to pay for dental care should be made to pay, but the poor should be treated gratuitously, and the money expended thus by the municipality or by private philanthropy will inevitably yield a return in efficiency and diminution of preventable diseases. And last, but not least, by such united efforts in improving deformities of the oral cavity, as well as pathological conditions, the esthetic sense will be awakened where it does not already exist. A good set of teeth is an ornament of which old and young are apt to be very proud. Let us have free and partially free dental clinics; let every child be examined and periodically reexamined for every possible physical and mental deficiency. Let no child pass through life with a pathological or esthetic defect which can be prevented by timely treatment and care. The result of such a provision will be better, healthier, and happier citizens. It is this care of the child of to-day, the man and woman of to-morrow, which must be forever our bugle call in the onward march of civilization.

16 WEST NINETY-FIFTH STREET.

THE PUTREFACTIVE PRODUCTS OF THE INTESTINAL TRACT AS AN ETIOLOGICAL FACTOR IN CHRONIC DISTURBANCES.

BY CHARLES CLYDE SUTTER, M. D.,
Rochester, N. Y.

The pages of the current medical literature afford abundant evidence of the interest now being taken in the various phases of autointoxication; its entity as an etiological factor in diseases of various forms is being recognized more and more every day. To me there has seemed a very close association between chronic disturbances and intestinal putrefactive toxemia. This is especially true with reference to the skin, the joints, the nervous system, and the cardiovascular system.

Bacteriologists and chemists have worked out the flora of the digestive tract and the products of putrefaction caused by it. We know that these products are absorbed and that some of them are responsible for many chronic lesions, but, so far, we have been unable to demonstrate which are responsible for each type of lesions produced. To review the fermentative and putrefactive processes in the digestive tract of man from the standpoint of their products, is interesting, but such a course somewhat tempers enthusiasm by revealing our ignorance in many important directions. Brieger (11), the distinguished chemist, said: "Our researches in the domain of physiological chemistry are as yet so incomplete, so insufficient, that a negative result proves nothing at all." Faulty metabolism manifests itself in one person through disturbances of the liver and its functions; in others, the skin, the joints, or the muscles suffer; in still others it is the nervous system that gives way under the accumulation of toxic products. In one patient there is frank evidence to be obtained by examination of the urine, and in others such evidences are entirely lacking.

There is a good reason for suspecting that the bacterial process in the digestive tract leads in one case mainly to digestive disorders and in others, owing to a lesser sensitiveness of digestive tract itself, to better absorption of poisons and the development of more remote consequences such as gout, arthritis deformans, arteriosclerosis, Bright's disease, cirrhosis of the liver, neurasthenia, anemia, nervous disorders, functional disorders of the heart and vasomotor system, skin lesions, etc.

The majority of intractable and neurasthenical habitual headaches are of gastrointestinal origin, and are amenable to treatment if the headaches are forgotten and the alimentary tract is handled properly. "In a review of fifty-one patients who manifested neurasthenic symptoms in a greater or less degree, nine were dependent upon some disease in the gastrointestinal tract" (1). Herter (4), by the administrations of indol, produced in man frontal and occipital headaches, colic, insomnia, lassitude, and, after continued administration, a tendency toward neurasthenia. So many cases of neurasthenia present evidences of faulty intestinal conditions, and so many are rapidly relieved of nervous symptoms by the correction of recognized faulty conditions,

that it is proper to record intestinal disturbances as at least a probable positive factor, even if it may not be a universal cause. It seems reasonable that a positive organic poison, such as we know to result from intestinal putrefaction, in a person whose reserve of nervous energy has been depleted, will exert a positive destructive force upon the nerve cell, that cannot be exerted by any external irritant, such as worry or purely mental distress, and when this is coupled with improper nourishment and fatigue, we have a combination which offers a rational explanation of nervous breakdown such as cannot be drawn from causes which are extraneous only.

A number of cases of neuralgia were recently imputed to the putrefactive products of the intestinal tract. Funcke (2), in a recent article, concludes that these neuralgias are not due to the indican; that the mere presence of indican does not signify that a disease exists, and that it is only when the precursors of this substance are not oxidized to indican that disease results. Mack (3) reports two cases of facial neuralgia, three cases of intercostal neuralgia, and two cases of sciatica, all of long duration, in which a decided result was obtained by treatment of the bowel. Herter (4) says: "There are also cases of multiple neuritis, resembling alcoholic neuritis, in which alcohol can have no etiological part, but in which antecedent gastroenteric derangements are very prominent. The probability that these instances of peripheral neuritis (with the associated psychoses) are in reality due to intoxications from enterogenic poisons, appears to me considerable, although the data now at my command do not suffice to establish this view. There is at present no evidence that infection by *Bacillus aerogenes capsulatus* is in itself capable of producing this type of nervous disease."

Erbstein (5) finds that pains in the joints and nerves are frequently of intestinal origin, whether there is coprostasis or diarrhea, and by using oil enemas the pains disappear. In a recent paper (6) I reported a case of chronic arthritis in which the pains in the joints were relieved for about eighteen hours after each colonic irrigation. Marshall (7) also reports a case of colostomy for rectal ulceration, in which the patient could tell when washings were needed by the pains that began in his joints. They always subsided with the washings.

Arthritis deformans has recently been imputed to putrefactive productions in the intestinal tract by Goldthwait and Brown (8), Marshall (7), Cornwall (9), myself (6), and others. Exacerbations of the joint symptoms often follow definitely recognized increase of digestive or gastrointestinal disturbances, and many cases of chronic arthritis are permanently cured by preventing the absorption of putrefactive products from the intestinal tract.

I agree with Bishop (10) that: "The vast majority of cases of arteriosclerosis as they occur in adult life, are due to the indirect influence of intestinal putrefaction upon the bloodvessels and nervous tissue." The well cared for classes eat too much rich food, take practically no exercise, use cocktails and champagne daily, and live under a strain of high, nervous tension. Intestinal dyspepsia with digestive putrefaction is a very common occurrence in these cases; the putrefaction products are ab-

sorbed and carried to other parts of the body and, through their toxic and irritating properties, set up many of the chronic disturbances. This is probably a gradual process, starting first without symptoms, then in turn indicanuria and other products of decomposition, neurasthenia, irritation of the kidneys (with albumin and hyaline casts), myocarditis, tachycardia, and finally arteriosclerosis. The kidneys, from their incompetency, may be one of the causes of intestinal autointoxication, but, likewise, digestive autointoxication may in its turn irritate and even inflame the kidneys, owing to a too continuous elimination of intestinal poisons. Arteriosclerosis also involves the vessels of the kidney, causing interstitial nephritis, and this in turn affects both the toxemia and the bloodvessels by direct influence, and by raising the blood pressure. Combe (11) says: "The arterial blood pressure is nearly always increased in autointoxication, owing to spasm of the arterioles. Arterio-capillary pressure is diminished." Alcohol is usually given as a cause of arteriosclerosis. It probably acts indirectly by producing disturbances of the digestive tract, resulting in autointoxication. The investigations of Cabot (12) do not seem to show this as a frequent causative agent.

The management of heart diseases and arteriosclerosis permits, in a great measure, to the regulation of food. Almost every day we meet cases of proteid poisoning. An extreme example of the result of abuse of protein food is seen in the case reported by Bishop (13), "of a young man in whom heart, bloodvessel, and kidney disease have developed as a direct result of eating enormous quantities of meat. It was not uncommon for him to eat six chops at a meal or four or five pounds of beef. A very intense intestinal putrefaction developed, the products of which were absorbed into the blood, poisoning his heart so that it did not beat more than forty times to the minute, damaging his kidneys, and poisoning his nervous system so that he was in a terrible state of nervousness and depression." These patients improve rapidly when given more exercise and a reduction of the proteid food in their diet to about sixty to ninety grammes.

According to Metchnikoff (14), "the digestive tube is constantly elaborating poisons of microbic origin, which are capable in time of setting up 'physiological arteriosclerosis.'" He also believes that the coming of senility may be postponed by the prevention of putrefaction in the intestine. Autointoxication causes degeneration of the cells of the liver, kidneys, bloodvessels, and fibres of the heart muscles. By preventing the absorption of toxic substances from putrefaction and fermentation, the tissues and organs of the body will be relieved from the destructive irritation caused by the absorption of these toxic products, and, as a result of this and the changes incident to it, old age and death may be postponed. "It was probably the obvious fact that some men are physically older than others who have lived as many years, that directed the attention of men to the study of the physical causes of senility. The morbid process in the arteries commences with irritation by some abnormal substances in the blood. The first general cause we find in that decline in the sensibility and motor power of the colon

incident to advancing age is lessened activity. Fecal matter collects in the large bowel and is retained beyond the normal period, and decomposition goes on unchecked; toxins are developed which are absorbed into the blood, where they irritate the walls of the vessels through which they circulate. Here we have an adequate general cause, one whose presence and capability of inducing the first lesions are not questioned." (15).

Several cases of fibrillation of the auricle have been quoted by Bishop (10), that were apparently due to intestinal toxemia, because treatment directed against the existing excessive intestinal toxemia was of benefit in these cases.

Symptoms simulating heart lesions may be produced by gastric disorders, thus ulcer, chronic ecstacy, and chronic gastritis may produce tachycardia or arrhythmia. Tachycardia with acute dilatation of the stomach, especially with existing heart lesions, is of rather frequent occurrence. In one case of tachycardia, with valvular lesion, the patient was confined to her bed, and was told by her family physician that she had but a short time to live. Upon examination marked dilatation of the stomach, with excessive gastric fermentation, was found. Treatment directed against the gastric fermentation was of great benefit in this case. Within six weeks the patient could walk one mile on the level, and at the end of eighteen months could walk from two to three miles daily. I have also seen many cases of cardiac irregularity that were without doubt due to intestinal toxemia. Attacks of tachycardia in these cases were almost always preceded by gastrointestinal disturbances, and treatment directed against the chronic excessive intestinal toxemia usually prevented or cut short the attack. Many of these patients were able to foretell an approaching attack by an increase in their gastrointestinal symptoms.

Stengel (16) says: "The extrasystolic type of irregularity is frequently of no consequence, and rather more often is this the case in those instances in which the patient is very conscious of irregular action. In these cases it is not infrequently dependent upon some gastrointestinal disturbance, the overuse of coffee or tobacco, and other easily remediable conditions." He emphasizes, "that in very many cases of beginning failure of cardiac power we had better devote attention to the gastrointestinal tract and external conditions, and give the heart a chance. The time will come when we shall need to resort to the final effect of remedies directed to the heart itself."

In the pathogenesis of cirrhosis of the liver, alcoholism has been assigned much importance, but, while alcohol produces fibrous changes, it is far from being the only cause. Many patients are not alcoholic, and we must therefore search elsewhere for the cause of cirrhosis. This cause appears to exist in the poisons derived from fermentations and putrefactions in the gastrointestinal tract. Alcohol may be an indirect cause of cirrhosis through disturbance of digestion causing putrefaction. Boix (17), by causing the ingestion of butyric acid, was able to induce, in rabbits, Lennec's atrophic cirrhosis; by the ingestion of lactic and valerianic acid, cirrhotic lesions. The ingestion of acetic acid produced even more fibrous lesions in the liver. Anal-

ogous results have been obtained with living cultures and with the toxins of *Bacillus coli*. "The very interesting researches of Boix," says Hanot (17), "prove that the organic acids of digestion may produce hepatic cirrhosis, some more easily than others. In the normal state the liver resists these daily poisons. If it grows feeble, or if it is already weak, the toxic action takes place, and hepatic cirrhosis by autoinfection of a gastrointestinal origin supervenes." "In 389 personal observations, dilatations of the stomach," says Bouchard (17), "I have found that swelling of the liver is seen in the proportion of twenty-three per cent., and in order to prejudge nothing, I have given to this change the name of enlarged liver."

It is well known to clinicians that, in some individuals, ingested toxins absorbed in the alimentary canal show the chief evidence of the absorption by changes in the skin. Faulty metabolism is recognized as a cause of many diseases; it might affect all the body tissues, and it is natural to expect that the skin also participates. While definite and specific statements cannot yet be made as to the exact and particular metabolic derangements belonging to various diseases of the skin, there is abundant evidence that the cellular derangements which constitute the bottom fact in the skin lesions have an intimate connection with and dependence upon metabolic errors. Duhring (18) said that this subject of metabolism, in relation to diseases of the skin, had interested him for many years, and he had long since ceased to study and treat the diseases of the skin—as he did years ago—from the standpoint of the lesions alone. Some persons have an idiosyncrasy to lobsters, crabs, strawberries, champagne, etc., and in them develop therefrom poisonous substances which produce eruptions, associated at times with acute gastric symptoms. Common acne and acne rosacea, the seborrheic eczemas, eczematous impetigo of children, erythema, urticaria, pruritus, and furunculosis seem to be due chiefly to intestinal autointoxication. Psoriasis and pemphigus are also attributed by some to this cause.

Intestinal toxemia is without doubt the predetermining cause in many cases of catarrhal inflammation of the mucous membranes that has become extreme and chronic, the most important of which are mucous colitis, disturbances of the nasal mucous membranes, and catarrhal otitis media. This seems probable when we realize that gastroenteric toxins seem to have a special affinity for vasomotor centres. These cases should be called autotoxic instead of catarrhal. The *modus operandi* may be through the blood stream, the sympathetic and vasomotor systems, or the lymphatic system. Frequent and repeated congestion of the pharynx and tonsils in the recurrent forms have been often noted in my observations in cases of autointoxications.

Woods (19) thinks it possible that there is enough association between such eye disturbances as blepharitis, lid and conjunctival disturbances, conjunctival hyperemia and functional disturbances of the ciliary muscle, refraction and muscular errors, etc., and manifest symptoms of autointoxications from constipation, to justify the belief of causative relations. The opinion of the writer (Woods) and of those who discussed the paper was, that many of

the intractable ocular lesions, those which did not yield to treatment, were certainly due to absorption of toxins from the intestinal tract.

Many cases of asthma improve, following the removal of the intestinal toxemia. Henoch, Silbermann, Oppler, Boas, Murdock, Einhorn, Combe, and many others recognize a disease known as dyspeptic asthma. Many theories have been advanced as regards the *modus operandi*. In all cases there is acute dyspepsia due to some error in diet. With some patients the asthma is accompanied by urticaria, and always results from the ingestions of the same foods (strawberries, fish, etc.). This led Combe (11) to regard digestive asthma as an internal urticaria.

In many cases of excessive saccharobutyric putrefaction, anemia is present, sometimes presenting the blood picture and clinical characters of the progressive pernicious type. In some instances we can exclude other causes of anemia, such as malaria, syphilis, and intestinal parasites. The onset of anemia is usually very slow. It is first manifested by indications of a decreased volume of blood without any decided fall in the percentage of hemoglobin, and later in the red blood cells, so that a moderate or considerable grade of secondary anemia may be associated with the intestinal conditions. The occurrence of a considerable degree of anemia in any case of advanced saccharobutyric putrefaction, must depend upon an excessive destruction of red blood cells compared with the reproduction of such cells. Sooner or later, a definite and increasing disproportion arises between the destruction and reproduction of red blood cells, and under these circumstances there arises a slowly or more rapidly progressive anemia. Hoxie (20), in a recent article, states that "when studied with Wright's stain, the polynuclears show an increase in the proportion of cells, showing large ambophilic granules, so much so that the observer is struck with the 'dark' appearance of the protoplasm, that is, the granules are large and purplish and seem to lie in a mauve cytoplasm. The proportion of these heavily staining cells decreases as the patient gets rid of the toxins. Hence, one can estimate rather closely how intoxicated the patient is by the proportions of these dark cells to the total number of polynuclears."

A feature of chronic excessive intestinal putrefaction is the readiness with which fatigue comes on. In children this is manifested by languor, restlessness, lack of concentration, and lack of interest in play. They are not much retarded mentally, except in so far as they miss opportunities for conventional learning. Sometimes one can notice a sharp contrast between the wit of these children and their physical retardation.

Instances of typical progressive muscular atrophy, epilepsy, paresis, and transient heart block are recorded, in which there are also pronounced evidences of excessive intestinal putrefactions and which have been benefited or cured by rational treatment of the bowel.

Amenorrhea, dysmenorrhea, menorrhagia, and leucorrhoea have been recognized by some as showing a relationship to autointoxication. In addition, we may also add the following diseases as having an underlying chronic excessive putrefaction as an

obscure etiology: Convulsions in children; melancholic states; excessive emotional depression and irritability; mental confusion; degenerative states of the nervous system; mental fatigue on slight exertion; loss of sexual power; debility; insomnia; and many high blood pressures. The twelve cases reported by Cornwell (21) showed the following conditions: "Severe and frequent or continuous headaches, mental and physical debility, neurasthenia, functional disorders of the heart, irritative cough, glycosuria, severe chronic universal eczema, toxemia of pregnancy, arthritis deformans, irregular fever, cardiovascular disease, and nephritis; . . . the beneficial results of dietetic treatment were, on the whole, so striking that they suggest the general conclusion that chronic putrefaction toxemia of intestinal origin causes or aggravates a large number of common and important morbid conditions." Some individuals, being more fortunate in their resistance, are able to withstand the constant absorption of toxic products for many years before they eventually succumb; others more susceptible seem almost to fade away before the increased cell destruction.

GENERAL DISCUSSION.

In this paper I have but briefly alluded to the diseases which, in some instances, were apparently due to the absorption of putrefactive products in chronic excessive intestinal putrefaction. This is by no means the only cause of these chronic disturbances, but it is an important factor in many and the sole cause in some of the chronic disturbances, and should be given greater prominence. The quantity of toxins produced does not determine the amount of disturbance which will follow, but it is the quantity of toxins absorbed which is important. The quantity absorbed may not cause pathological disturbances, providing the system of defense is not weakened, or the amount absorbed does not exceed the limit of Nature's power of defense against these poisonous products of the intestinal tract. The amount which has passed the line of defense may not be of pathological significance if the organs of elimination are functioning properly. The products carried into the circulation unaltered may not be directly responsible for the chronic disturbances, but through irritation of the channels of elimination may be the first link in the chain. We observe, on the one hand, an increase in the phenomena of putrefaction, on the other, a diminution of the defense of the organism; both of which contribute to produce and augment intestinal autointoxication.

Nature has produced a powerful system of defense against intestinal toxins. "The digestive fluids neutralize digestive toxins; the intestinal epithelium plays an antitoxic rôle; blood returning from the intestines is obliged to pass through the liver, the epithelium of which is endowed with mighty toxicolytic power; antitoxic glands, thyroid, thymus, suprarenal, the zymases of which modify and neutralize certain toxins of intestinal origin which circulate in the blood; finally, the eliminating organs constantly reject and throw out the products of intestinal putrefaction. Ammonia and acetone are eliminated through the respiration; the skin throws out with the sweat, indol, phenol, and sulphoethers; last, the kidneys eliminate through the

urine the majority of the intestinal poisons (11)." Combe asks why we have this system of defense unless the products are harmful, and why the eliminating organs constantly reject and throw out the products of intestinal putrefaction, if these are harmless? If these products are harmful, then what will be the result if the system of defense becomes weakened, or if the products become excessive? The liver destroys about two thirds of the poisons of digestive origin, but what must happen to the poisons when the liver is diseased?

Disturbances from putrefaction toxemia also depend to a large extent upon tissue resistance or susceptibility. This varies greatly in different individuals, so that an amount of putrefactive toxemia which is harmless to one individual may produce serious disease in another. The tissue resistance will determine the location and type of disturbance which will follow, thus, in one case the toxemia may be the etiological factor in chronic arthritis, and in another case the same product of putrefaction may manifest itself in skin lesions, arteriocapillary fibrosis, Bright's disease, cyclic vomiting, cirrhosis of the liver, and nervous and mental disturbances. "In some persons the indulgence in a single glass of champagne is followed within twenty-four hours by manifestations of gout; in others champagne causes headache and the excretion of increased amounts of uric acid. The explanation of these different effects is to be sought in the individual cellular reactions of the patient rather than in the poisons themselves" (4). In arthritis deformans, degenerative changes are quite frequently found in the cornea. This leads one to suspect that there is a susceptibility, or lowered resistance, also in the synovial membrane, which determines the onset of joint symptoms. There are probably many similar examples of individual susceptibility, but when we study the question in relation to processes found in the digestive tract, we cannot make close comparisons between different persons, because we cannot say what substances are being absorbed. We may know that patients of a certain group are alike in having intense indicanuria, but we cannot say but that the intoxications may be different in these cases, owing to differences with respect to the absorption of substances other than indol.

Instances are many in which clinical experience has made it clear that two persons of approximately the same weight react differently to the same drug, and do so regularly. Of individual human susceptibilities and reactions to the actions of enterogenous poisons, almost nothing is known, nevertheless, one cannot fail to recognize the possibility that such individual susceptibilities and reactions may play an important part in determining the clinical manifestations of intoxications.

The general disturbances are not always caused directly by the toxemia, but indirectly through disturbances of metabolism, Bright's disease, and vasomotor disturbances. The symptoms, as learned from the patient, are not of great value, the onset has been so insidious that what the patient complains of is often the result rather than the cause. Symptoms of autointoxication become manifest only when the system of defense through the intestinal mucosa, liver, etc., becomes weakened, or has not

sufficient strength and quantity to keep the bacteria of the lower bowel under subjection. These bacteria seem to have been designed by Nature to complete the process of digestion, depending upon the inhibitory influence of the glands above to keep the proper balance. Digestive autointoxications, while long recognized and admitted by many, rested until within late years upon purely hypothetical grounds, for the known and scientifically proved facts relating to it were but few. We can often recognize the presence, and possibly the degree, of intestinal putrefaction, but the results obtained give no definite indication of the degree of autointoxication which may be present, as different putrefactive bacteria produce different products, some of which are comparatively innocuous, while others are excessively poisonous.

The chemical sign of intestinal toxemia of putrefactive origin that has attracted the most attention, is the presence in the urine of indican, or indoxyl potassium sulphate. Indican is usually present, but not necessarily so, and its presence or its amount does not determine the degree of putrefaction or bear a relationship to the amount absorbed. A large amount of indican in the urine or feces shows that a large amount is being eliminated, but does not show how much is present in the circulating blood. Personal observations seem to indicate that little reliance may be placed upon indican as a positive index. The variations in the same individual are sometimes spontaneous, sometimes seem to result from treatment, but fully as often are contradictory and disappointing. Nevertheless, the presence of indican and other aromatic compounds should be carefully watched for, even if untrustworthy as a positive factor. Indican is now believed to be non-toxic, but plays the rôle of an indicator, demonstrating that substances formed during the process of putrefaction have been absorbed. These substances are exceedingly variable in number, combination, and quantity, depending upon the character and amount of foodstuffs ingested and upon variation in digestion. Certain of these substances may be detected by a skilled organic chemist after prolonged labor; others are unknown or are unrecognizable.

Normally, the sulphoethers may be regarded as an index of intestinal nitrogenous putrefaction, because they are derived only from the microbial, nitrogenous putrefaction. They are produced at the expense of proteids, the nuclealalbumins, the pancreatic and intestinal juices, the bile, and the intestinal mucus. According to the research made by Baumann (22), Nuttall and Thierfelder (23), the quantity of sulphoethers in the urine is proportional to the intensity of the putrefactive processes in the intestine, the exception being in organic suppurations and infections, in which the bacteria destroy the albumin in the same manner, and in persons using salol and phenol.

The leucomaines and ptomaines are considered to be toxic, and are often etiological factors in chronic disturbances from autointoxication. Anders (24) says: "It may be safely assumed that when the absorbing intestinal toxic substances—leucomaines and ptomaines—resulting from normal digestion, are found in abnormal amounts, autointoxications occur. If these substances enter the circulating

blood rapidly and in sufficient quantity, acute intestinal autointoxication is the result; this often assumes the nature of bilious attacks or migraine in the course of the chronic variety, or it may follow obstinate constipation." The leucomaines are derived from the cells and the ptomaines from the bacteria. The examination of their presence is not of much value, because we do not yet possess any practical method for detecting the ptomaines or ascertaining their percentage.

Ethereal sulphates, sulphuretted hydrogen, which is normally present in traces in the colon, ammonia, the amidoacids, indol, skatol, phenol, and aromatic oxyacids, may not be sufficiently toxic to affect the healthy person, but would affect those whose power of defense was weakened, whose tissue susceptibility was increased, and those whose nervous system was depressed. It is possible that, even in the absence of any increase in the production of toxic substances, slow passage of feces through the intestines might lead to autointoxication by giving more time for the absorption of products of bacterial decomposition.

The diagnosis of autointoxication as the etiological factor in many cases of chronic disturbances, can easily be made by the clinical manifestations, but in the more obscure cases we must have recourse to more demonstrative proofs by examination of the urine, blood, and feces. The affection is not always accompanied by a precise and defined symptomatic picture. Some cases are characterized only by disorders of general nutrition, anemia, nervous phenomena, cutaneous eruptions, and obstinate constipation. Variable and multiple symptoms may take place without the patient complaining of his digestive apparatus. Many times the diagnosis will be made by placing the patient on antiputrefactive treatment. If we keep in mind the fact that gastroenteric toxins seem to have a special affinity for vasomotor centres it will aid in making a diagnosis. Laboratory methods may give us an index to the amount of toxic substances present in the gastrointestinal tract, but it does not inform us of the type which is being absorbed, or of the relation of the quantity to the system of defense, the power of elimination, or to the tissue resistance or the individual susceptibility, all of which are essential to a correct and complete diagnosis. "The physician should never make the diagnosis of intestinal autointoxication until he has made a careful differential diagnosis, eliminating everything else." (Forchheimer.)

The important factors favoring the production of intestinal putrefaction are as follows:

1. Impaired metabolic processes and error in diet. On a proteid diet the stools are neutral or alkaline, and contain ammonia, fatty volatile acids, ptomaines and leucomaines, aromatic oxyacids, phenol, and indoxyls, etc. On a carbohydrate diet these substances are greatly reduced in amount or are entirely absent. The precise surplus of nitrogenous foods in the intestines, on which the chronic autointoxication is dependent, is as yet unknown.

2. Numbers of bacteria are taken into the digestive tract with the food, and from nose and throat disturbances. In a normal stomach these putrefactive bacteria are quickly disposed of, but in cases

of chronic excessive intestinal putrefaction the secretions are altered and may permit the passage of putrefactive bacteria unharmed.

3. Obstinate Constipation. Mere obstinate constipation does not necessarily lead to indicanuria. In a certain number of patients with chronic intestinal disturbances, there seems to be a sufficient regularity in the bowel evacuations, and yet further analysis indicates in them conditions similar to those of others suffering from a positive intestinal stasis. One class of patients with nervous symptoms traceable to intestinal conditions may be hearty eaters, another may be very careful and abstinent; they suffer equally from the intestinal disturbances. The longer the time during which the intestinal contents are exposed to putrefactive bacteria, the greater will be the putrefaction, but this does not necessarily mean greater absorption of the products of putrefaction.

4. Delayed absorption. Early absorption removes the digested food before it becomes the prey of putrefactive bacteria.

5. Insufficient mastication, improperly cooked food, food partially decomposed, or food containing preservatives. Preservatives may not be harmful *per se*, but by delaying digestion and subsequent absorption, may give time for an excess of putrefaction and fermentations.

6. The number, character, and activity of the saprophytic bacteria. These are increased in number and virulence by stasis of the fecal content and by alterations in the bile, gastric, and pancreatic juices which have an inhibitory influence.

7. Reactions of the contents of the intestines. Anaerobic albuminous putrefaction cannot take place in the small intestines and is very limited in the large intestine when the contents are normally acid.

8. Disturbances of the abdominal organs, such as gastropnoxis with or without colopnoxis, kinking, redundant or ptosed colon or sigmoid, chronic appendicitis and partial or complete occlusion of the common bile duct, with or without jaundice.

The amount of toxins in the blood depends upon: 1. Conditions of the intestinal mucosa. Indican is observed in affections of the small intestines, accompanied by diarrhea, such as typhoid fever, tuberculosis, catarrhal enteritis, and cholera, but is not present in dysentery or mucoenterocolitis, both of which are accompanied by exaggerated peristalsis and increased intestinal putrefaction, with diminished absorption. This can probably be accounted for by the fact that in the former group of diseases the line of defense is broken, allowing greater absorption.

2. Activity of the liver, thyroid, thymus, and suprarenal glands which possess toxicolytic power.

3. Activity of the organs of elimination, the kidneys, the skin, and the lungs.

The amount of disturbances in the body depend upon: 1. The degree of toxicity of the putrefactive products of the digestive tract which have been absorbed and have passed the line of defense unaltered.

2. The period of time through which tissues have been exposed to the action of these products.

3. Tissue resistance, or individual cellular reactions.

4. The presence of diseased tissue or organs. The products absorbed may not be sufficiently toxic, nor the amount sufficiently large to affect a healthy person, but they will exaggerate existing diseased conditions.

5. The activity of eliminating organs which will rid the system of these deleterious substances before they produce harmful results.

INDICATIONS FOR TREATMENT.

In all chronic disturbances one should ascertain whether chronic putrefaction toxemia is an important etiological factor. If present, it should be removed by regulation of the diet, favoring absorption, correction of altered secretions, correction of malpositions of the abdominal organs, and preventing intestinal stasis; stimulating the action of the antitoxic organs; increasing the power of the organs of elimination; and, finally, treatment of the lesions produced. By a combination of all these factors, many chronic disturbances, caused by or exaggerated by chronic putrefaction toxins, may be prevented or cured.

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275 ALEXANDER STREET.

FURTHER NOTES ON THE SANITARY CONTROL OF PROSTITUTION IN SOME EUROPEAN CITIES.

BY FREDERICK BIERHOFF, M. D.,

New York.

(Continued from page 574.)

BREMEN.

Bremen, the second largest seaport of Germany, has adopted the method of relementation in conjunction with segregation of its prostitutes.

Up to 1865, prostitution was not segregated, and the prostitutes lived in any part of the city. In this year, however, owing to the fact that, according to the medical authorities, the amount of venereal disease was rapidly increasing, and as a result of the complaints of the populace regarding the annoyance arising from the presence of the prostitutes in all parts of the city, request was made to the authorities to segregate the prostitutes.

Regulations were then drawn up and it was decided to segregate the public prostitutes in some particular quarter of the city. In 1878, the police authorities entered upon an agreement with a certain landowner and builder to set aside a certain street, of which he was the owner, and to permit none but inscribed prostitutes to live in the houses upon this street, the police pledging themselves to compel the inscribed prostitutes to live in these houses, and also agreeing to preserve order therein. Since October 1, 1878, all inscribed prostitutes in this city are compelled to live in the Helenenstrasse.

Street walking is not permitted, and should a woman be arrested for this offense she is warned the first time; for a repetition of the offense she is first sentenced to one day's confinement, the term increasing with each arrest up to a work house sentence. At the same time, it may be noted that the number of prostitutes who are not under control is assumed to be not a small number; but solicitation on the streets, I am told by citizens of Bremen who are in a position to know, is of very rare occurrence. Those not under control are to be found almost exclusively in the cafés and concert resorts and theatres of the poorer class. All women arrested for public prostitution, who are not under control, are taken to the prison at the Ostertor, where they are examined by the district physician with reference to their health. Should they be found free of venereal disease they are turned over to the authorities for punishment. If venereally diseased, they are confined in the city hospital for compulsory treatment until cured, after which they are punished for their offense. These examinations of the arrested prostitutes were begun in 1901.

Dreier and Stachow (*Die Prostitution; Bremen in hygienischer Beziehung*, 1907) give the results of the examinations of arrested prostitutes, in the city prison, as follows, from 1902-1906:

There were examined in the Bremen prison:					
1902	194	girls, of whom were diseased.....	119		
1903	106	girls, of whom were diseased.....	84		
1904	127	girls, of whom were diseased.....	87		
1905	199	girls, of whom were diseased.....	93		
1906	285	girls, of whom were diseased.....	137		
Of the diseased there were infected with:					
	1902.	1903.	1904.	1905.	1906.
I Gonorrhea	50	41	29	35	56
II Suspicion of gonorrhea.	13	13	14	21	33
III Erosion of portio vaginalis	25	9	6	19	16
IV Syphilis	20	20	30	17	24
V Suspicion of syphilis.....	11	2	8	1	2
VI Itch, lice	1	..	..	..	1
	119	85	87	93	132

The Helenenstrasse is a small street, running off from the principal thoroughfare of the eastern portion of the city. It is a "blind street," its only outlet being upon the thoroughfare mentioned. The entrance to the street is hidden by a wall, which shuts off all view into the street while permitting entrance thereto. At the entrance to one side of

the street are quarters reserved for the police officer on duty, and also rooms in which the examinations are made by the police physician.

The street is lined on either side by thirteen houses, which consist of a basement dwelling, one upon the ground floor and the first story. In front of each is a little plot of ground, which the inmates plant as little flower gardens. Across each house, upon the ground floor, is a veranda. In each of the houses, with the exception of two, there are quarters for three inmates, while in the two exceptions there are quarters for only two. Formerly, in one of these latter, there were nine bath cabinets in the basement arranged as douche baths for the inmates of the street. During the past summer the owner of the street was engaged at the time of my inspection in remodelling one of the houses and installing up to date bathing facilities. Three bath cabinets, for tub and shower baths for the women, were in process of construction, the water control being so arranged that it would be impossible for any one using them to turn on water at a dangerous degree of heat. Each of the houses is provided with a water closet, separated from the dwelling. The houses are built alike, so that the description of one will serve for all.

The basement dwelling consists of two rooms, and costs the inmate four marks a day for rent. The ground floor dwelling contains two large rooms and one small room, the latter serving as a kitchen. The rent for this is six marks a day. The first floor dwelling consists of two large and two small rooms, and the rent is four marks a day.

In three of the houses there is, in addition, a second story or garret, which contains three smaller rooms and is rented for three marks a day.

The windows opening on the Helenenstrasse itself afford plenty of light and ventilation; those opening from the rear rooms, or upon the adjoining houses, or street, are fitted with ground glass and may not be opened, in order that no nuisance may be caused those living back of these houses. Ventilation is provided for in these rooms, however, by transoms over each window.

All the dwellings are rented to the girls fully furnished, and the rental includes the use of the furniture.

In one of the houses, at the entrance to the street, there is a laundry which attends to the laundering for the inmates at a price specified by the police authorities.

It may be noted, in passing, that the charges for everything, such as rental, baths, laundering, etc., are fixed by the police, in order that the purveyors may not take undue advantage of the inmates.

Should an inmate of this street desire to give up the life, or to leave the street itself, she may do so and may not be held back, even though she is in debt to the landlord.

No alcoholic drinks whatever may be sold or served to visitors in the Helenenstrasse.

The inmates may not leave the street after 9 p. m., although they may do so freely during the day as long as they do not solicit upon the streets.

They must cook their own meals, and it is forbidden in the police regulations for several of them to cook or eat together; but this last regulation is

said to be frequently evaded without any particular notice thereof being taken.

The medical examinations of the women living in this street are made twice a week in the quarters reserved for this purpose in one of the houses in the street. Each girl has to bring her own speculum, the size and shape of which are specified. The instrument is made of celluloid, and must be kept clean by the woman herself. Before presenting themselves for the control examination the women are required to bathe.

At the time of the examination the women may obtain from the physician in charge, upon request, a supply of condoms, bichloride of mercury tablets, and twenty per cent. protargol solution at the cost price to the police. These articles are for the use of the women's visitors, and the women are instructed by the police to require the use of the condom by the visitor, in case he presents any suspicious conditions resembling venereal disease. In the dwelling of each inmate of the street there is to be found, at some plainly visible point on the wall, a framed sign, drawing the attention of the visitors to the value of these preventive measures, and also to those paragraphs of the penal code which specify the punishment visited upon those who knowingly transmit venereal disease.

The number of inmates of the street is, as a rule, in the neighborhood of seventy to seventy-five women.

	1900.	1901.	1902.	1903.	1904.	1905.	1906.
Total number inmates for the year	58	60	78	110	142	159	153
Average number at one time	45	49	50	67	72	74	76
Cases of disease	62	67	77	88	87	54	47

It is interesting to note, upon examination of the foregoing table, that, although the number of inmates has increased, the number of cases of disease has diminished, and this, I am informed by the physician in charge of this division of the police (Doctor Weidanz), has continued to diminish during the years since 1906.

Dreier and Stachow, from whose interesting article the foregoing tables have been taken, have made the interesting observation that for years the number of cases of disease occurring among the inmates has been greater during the second half of each year than during the first.

In no instance is there a compulsory placing under control of the women and their interning in this street. The inmates of the street are placed under control and receive a dwelling in the street only upon their own request. No woman under eighteen years of age, and no married woman is placed under control. The rescue missions have free access to the street and its inhabitants, and an inmate is, upon request, at any time discharged from the control, and all possible help is given her to take up an honest mode of life. Pimps are not tolerated in the street, and women who have any dealings with these individuals are removed from the street and control. As a result this relation is but very little noticeable in Bremen. The inmates of the street are under no oppression, either on the part of the police or the owner of the street, and their relation to the latter is purely that of landlord and tenant.

The following are the police regulations governing women under control in Bremen:

POLICE REGULATIONS.

The following regulations are promulgated upon the basis of Paragraph 361 of the penal code, for those women in the city of Bremen, who are under the control of the morals police, for the security of the public health, order, and decency.

I.

It is forbidden the women under control:

(a) To entice men upon the street or in other public places, or in public houses or from their dwellings, by means of words, beckoning, motions, or other demonstrations, as, for instance, the placing of burning lamps or lights in their dwellings.

(b) To make themselves especially noticeable upon the street or other public places or in public houses, particularly from taking positions in their doorways, upon the verandas, or in the gardens in front of their dwellings, or in front of the dwelling of another prostitute.

(c) To remain outside of their dwellings at night without permission of the police. In the term "night time" are included, from April 1st to September 30th, the hours between 9 o'clock p. m. and 4 o'clock a. m.; and from October 1st to March 31st, the hours between 9 p. m. and 6 a. m.

(d) To leave their house doors open, or their windows uncovered, in such a manner that it is made possible to look into the interior of the dwelling.

(e) To permit their attendants to remain upon the verandas, or in the gardens in front of their dwellings or in the doorway of the house, or to entice men in any manner whatsoever. Furthermore, to permit seats (benches, chairs, etc.), or tables to be placed upon the verandas, or in the gardens of their dwellings. Actions of this kind by the attendants will be looked upon as having occurred with the knowledge of the prostitute.

(f) To visit with men in the separate rooms in public houses, or to force themselves upon men in an unseemly manner.

(g) To dwell, or to pass the night in the city of Bremen, in places other than the dwellings which they occupy with the permission of the police.

(h) To visit the dwellings of such individuals as are suspected of procuring, or who have already been punished for this crime.

(i) To make use, as attendants, or for any other services, of minors or of such individuals as are considered by the police as undesirable for such purposes, or to permit such individuals to remain in their dwellings.

(k) To visit the theatres, hospitals, and also masquerade balls, without special permission.

(l) To enter into any relation whatsoever with school-boys, or other immature male individuals.

(m) To enter into any relation with pimps, or with such individuals as are mentioned to them as being suspected of pimping, or such persons as are forbidden by the police to visit the Helenenstrasse, or to have relations with such individuals, namely, to support such individuals in whole, or in part, at their expense, or to give them presents, and also to visit public houses with them.

(n) To furnish the men visiting them with wine, beer, or spirituous liquors. Furthermore, to get or to have brought to them, wares, or other articles, after 9 o'clock p. m.

(o) Purposely to absent themselves in any way from the existing control.

(p) To ride in wagons whose coverings are not wholly closed.

(q) To take their meals in the dwelling of other prostitutes, or to keep an attendant with a prostitute dwelling in another house.

(r) To keep dogs or cats.

(s) To ride in the street cars, tramways, or similar public vehicles.

(t) To visit the Buerger Park, or the parks at the city walls.

(u) To make use, in the bathing establishments, of other bath cabinets than those arranged for single bathers, namely, the swimming pools.

(v) To keep the so called "watch women," or the attendants in their dwellings after 9 o'clock p. m.

(w) To wear conspicuous clothing outside of their dwellings.

(x) To leave the Helenenstrasse, or to walk upon the streets other than alone, and in complete street costume.

(y) To visit the inns and saloons which are included between the Weser, the city moat up to the Bischofstor, the Rembertstrasse, and the streets beyond the Schleifmuehle, Schwachhauser Chaussee, Uhländstrasse, Moltkestrasse, Bismarckstrasse, St. Juergenstrasse, Strasse am Schwarzen Meer, and Sorgenfrei.

(z) To act unbecomingly toward police officials.

II.

Every individual under control is compelled to dwell in the Helenenstrasse, in a house and dwelling assigned to her by the owner of the houses. Furthermore, personally to give notice at police headquarters, in every instance, before leaving the city temporarily, when this absence is to be a duration longer than twelve hours, and also personally to notify the police upon her return within twelve hours thereafter. Similarly, every change of dwelling in the Helenenstrasse is to be announced to the police authorities within twelve hours.

III.

For the purpose of preventing the spread of venereal diseases, regular medical examinations take place, at which every individual under control must present herself. Until further orders, these will take place Wednesday and Saturday of each week, at 10 o'clock a. m., in the house, Helenenstrasse 26. Punctual appearance at these examinations is made a special duty. Hindrance, as a result of illness, is to be at once proved by means of a medical certificate. Expenses of the examinations are to be borne by the prostitutes themselves.¹

Every illness which she may discover in her person, whether this be syphilitic, or not, she is at once required to bring to the attention of the police physician.

In case of perceptible moral conversion, and the proof of an actual livelihood, the control will be removed.

Bremen, October 11, 1900.

THE POLICE DIRECTOR.

CONTROL REGULATION.

With reference to Paragraph 361 Z of the Penal Code, it is hereby prescribed, for the purpose of assuring the health of the prostitutes under control, that they regularly supply themselves with articles for the prevention of the transmission of infectious venereal diseases, that they are to keep such articles constantly on hand and in sufficient number, and that they are not permitted under any circumstances to decline to furnish their visitors with such articles.

Bremen, March 19, 1910.

Medical Department,

L. V.

(signed) Doctor Luerman,
Regierungs-Assessor.

As will be seen from a perusal of the foregoing, Bremen has attempted to grapple with the problem of prostitution and its accompaniment of venereal diseases from the point of view of segregation, with police relementation and sanitary supervision, and it must be conceded that there has been a decided improvement in the order of the city, and a diminution of venereal diseases among the prostitutes under control.

I was informed by the physician now in charge, Kreisarzt Doctor Weidanz, that the diminution in the amount of venereal disease among the prostitutes has been steady since the rigid enforcement of the sanitary regulations and the regular examinations among the inscribed prostitutes, and that the amount of venereal disease traceable to these pros-

titutes has very decidedly diminished, particularly since the enforcement of the regulations requiring them to furnish visitors with protective appliances.

On consulting the table, we find that during 1905 there were seventy-four inmates, on an average, dwelling in the Helenenstrasse. In other words, there were seventy-four inscribed prostitutes living in the city of Bremen. The official census, taken in December of that year, gives the number of inhabitants of the city proper—not including the suburbs and the country included in the territory of the Hansa City, Bremen—as 214,861, or one prostitute to 2,903 inhabitants. The number of male inhabitants between the ages of twenty and sixty years at this time was 55,844, or one prostitute to 755 males of sexual age. Any one at all acquainted with life in large cities will at once realize that this cannot possibly represent accurately the supply of prostitutes in the face of the demand which must exist, particularly when we bear in mind that Bremen, being a large and important seaport and the seat of a garrison, must have an unusually large contingent of unmarried and transient males in its population. In other words, the seventy-four inmates of the Helenenstrasse cannot begin to meet the demands for sexual intercourse which are bound to be made by a male population of the size and character met with in this city. The authorities of Bremen are well aware of this fact, and have repeatedly attempted in recent years to obtain additional streets in other remote parts of the city in which to establish centres of segregation similar to the Helenenstrasse. These attempts have met with sufficient opposition from various quarters to render them unsuccessful up to the present. The owners of the ground decline to sell for the purpose of permitting the establishment of a street similar to the foregoing; the dwellers upon, or the owners of adjacent territory, entered their protests against the plans, and opposition is met with within the city council. Repeatedly, also, some parliamentary busybody, for want of a better topic designed to attract public attention, requests an investigation of the conditions existing in Bremen, for, be it borne in mind, the laws of Germany prohibit any licensing of prostitution, and further, the senate of Bremen, which is its governing body, occupies practically the position of procuror in the eyes of the law in that it has tacitly consented to the existence of an illegal institution, and because it has assigned a district in which these outlaws in the eyes of the law may live free from interference and where the authorities have regulated their mode of life, and protected them from plundering by landlords, purveyors, pimps, or police officials.

The question which must interest us as physicians, is not the moral aspect, but the sanitary. The authorities of the city of Bremen say that they have tried to meet the problem of prostitution and its effect upon public order and public health in various ways, and that they were eventually compelled to adopt the method now in vogue. Certain it is, however, that solicitation upon the streets is practically absent, and that one fails to notice any evidence of notorious dives throughout the city, such as meet one's eye in other cities in which segregation is not the rule.

¹One mark for each examination. This money is paid into a fund, which serves to pay for the hospital care of the diseased prostitutes.

SWEDEN.

Frequently, in the perusal of the literature issued by the abolitionists or by the abolitionistic organizations or by the opponents of regulation, we meet with statements concerning conditions in the Scandinavian countries which would lead one to believe that they had all abolished *reglementation*, or were on the point of doing so. Such statements are, however, not absolutely in accordance with facts. In order to obtain an idea of the real conditions, I determined to investigate, personally if possible, during the past summer. I was, unfortunately, unable to visit either Norway or Sweden, and was compelled to confine my observations, for the present at least, to Copenhagen.

To obtain some idea, however, of the conditions existing in Sweden, I directed a personal communication to Professor Magnus Moeller, of Stockholm, perhaps the greatest authority upon these matters in Sweden. He kindly responded, and I take the liberty of making use of the translation of his letter. It is as follows:

STOCKHOLM, August 25, 1911.

My Dear Colleague:

Returning from a journey, I find your valued letter of August 10th. It is a misconception to believe that *reglementation* has been abolished here in Sweden. The bi-weekly, preventive control examination, and the compulsory hospital treatment of professional prostitutes, exist to-day, as they have for forty years. Conditions on the streets and in other respects are as a result about the same as formerly.

In 1904, a committee was appointed by the government to work out suggestions for combating venereal diseases. In the past year, this committee, of which I also was a member, presented its report with its recommendations and reasons therefor and appendices. An abstract thereof will—as Blaschko has probably already told you—soon appear in the *Z. B. G.*

The committee finds that it cannot recommend the retention of *reglementation*.

If, however, any individual has been accused before the court, or sentenced by the court for offenses which must stamp the individual in question as being suspected to be particularly dangerous to the health of the community, then it seems to the committee to be justifiable to seek to subject that individual to compulsory sanitary measures. To that end, compulsory proceedings should be begun against *three* groups of individuals:

I. Individuals who have been warned, or arrested for common prostitution.

II. Individuals who have been proceeded against because of certain crimes, for instance: Exposing others to the transmission of infectious, venereal diseases; or the transmission of the same; punishable provocations; indecent attacks upon children, etc.

III. Sources of infection reported by physicians.

The committee also recommends compulsory reporting by physicians, without mention of names, for statistical purposes.

Hospital treatment, free of charge, for all venereally diseased individuals we have had here in Sweden since the beginning of the last century. Free ambulatory treatment we have only in the larger cities.

There is in Stockholm a special hospital for diseased prostitutes, which contains 100 beds. For other venereally diseased individuals, St. Goeran Hospital contains 230. Unfortunately, up to the present, we have no statistics concerning the number of cases of venereal disease. It is intended, however, to collect these.

The number of inscribed prostitutes has fluctuated during the past five years between 400 and 200. The population of Stockholm is about 350,000.

Etc., etc.,

(signed) Professor Dr. Magnus Moeller.

Comment upon this letter is hardly necessary, since it gives us clearly a report of the existing

conditions. The recommendations of the committee have, so far as I have been informed, not yet been made a law for Sweden. Whether this will be done remains to be seen.

DENMARK.

The same laws in relation to venereal diseases which govern Copenhagen are also effective for the rest of the kingdom, and as this city is the largest in the country we need consider it only. In addition to being the capital of the country, the royal residence, and the seat of the largest garrison, it is the largest seaport in Denmark. According to statistics issued by the city physician, the total population of Copenhagen on February 1, 1911, was 462,161, while that of Fredericksberg, practically a part of Copenhagen, although having its separate city government, was 97,237. All measures affecting prostitution, prostitutes, and venereal diseases are based upon the law of March 30, 1906. This reads as follows:

LAWS AGAINST THE SPREAD OF PUBLIC IMMORALITY AND VENEREAL INFECTION.

PROMULGATED BY HIS MAJESTY, KING FREDERIK,

March 30, 1906.

I.

The police *reglementation* of common prostitutes is to be abolished. The police are empowered to inscribe any individual following such a business, under the provisions and according to the measure of the laws against vagabondage.

II.

Anyone enticing another to immorality, or offering herself for this purpose, or giving evidence of an immoral mode of life that is likely to offend public decency, shall be punished with imprisonment, or, in case of repetition of the offense, or under especially exasperating circumstances, shall be punished with imprisonment in the workhouse. Should extenuating circumstances exist, then a fine may be imposed instead of imprisonment. The same punishment will be visited upon a woman engaged in public prostitution, if she permits an adult male to live with her, or a minor child over two years of age, or who receives, for the purpose of immoral relations, a male under eighteen years of age. In the case of an individual who has not been previously punished, or warned, because of one of the aforementioned offenses, the individual may be warned instead of punished, but such a warning may not be given in case the individual in question desires to have the case tried before a court.

III.

The keeping of brothels is forbidden. Every breach of this prohibition will be punished with imprisonment and work in a corrective institution, the workhouse, or the prison under ordinary fare. The same punishment will be visited upon all those convicted of brawling. All individuals, who, for money, permit individuals of different sexes to enter their dwellings for the purpose of immoral practices, or who rent rooms, not for permanent occupancy, but to permit of immoral practices, or who give lodging to women under eighteen years of age who are given to public prostitution, shall be punished by commitment to a prison or workhouse. In case of a repetition of the offense, the sentence will be increased up to two years in a correctional institution at hard work. The advertising, placarding, the publishing of descriptions, publishing, or offering of articles for the purpose of preventing the results of intercourse, is forbidden. Breaches of this law will be tried and punished according to the regulations of the police.

IV.

The same punishment which is specified in Paragraph 181 of the general civil laws, will be visited upon any individual, who, under the conditions mentioned in the above mentioned paragraph, indulges in sexual intercourse with his or her spouse, in case he or she shall become infected as a result thereof, and if the infected individual

shall, within one year after becoming aware of the conditions, begin legal proceedings.

Any individual rendering himself or herself liable, according to the specifications of Paragraph 181 of the general civil laws, or of the above mentioned regulations, shall, in the case of a transmission of an infection to another individual, if the offender has been aware of the danger of the transmission of this infection, be not only held responsible for the costs arising from the treatment of this disease, but shall also be liable for damages for the bodily suffering and for the financial loss of the infected.

V.

All individuals suffering from venereal diseases, whether they be financially able to pay the costs of their treatment or not, shall be entitled to treatment at the expense of the community, so long as they are not able to present proof that they are under treatment in private. All venereally infected individuals are obliged to remain under treatment until fully cured. Should the mode of life of an infected individual be such that it is not certain that the transmission of the infection to others can be prevented, or should the individual in question not follow out the directions given for the prevention of the transmission of the infectious diseases to others, then the individual in question shall be compulsorily interned in a hospital. The decision concerning the necessity of such measures shall rest with the police authorities. All individuals receiving the aid of the public charities shall, in the case of an infection of this type, be transferred to the hospital.

VI.

If, during the course of the treatment, or after the completion thereof, it seems advisable to the physician, during a particular case, to keep the patient in question constantly under observation, then this physician shall set for the patient specified intervals at which the patient is to visit the physician for the purpose of control. Should a patient under treatment desire to change his physician, then he is obliged to send a certificate to this effect to the first physician from the physician who is continuing the treatment. Should a patient not comply with the regulations, or remain away in spite of notification to appear again for treatment, then the physician treating the case shall send a notification to that effect to the city physician. The city physician shall then take measures providing for the treatment of the individual by one of the communal physicians.

VII.

Every physician treating venereally infected individuals shall draw their attention to the dangers of the disease, and also to the legal consequences of a transmission thereof. He should particularly draw the attention of the diseased individual to the dangers of entering upon matrimony during the course thereof.

VIII.

Every physician shall, in his weekly report to the city physician or the district physician, particularly state that he has observed the regulations contained in the foregoing paragraphs, and give the number of individuals whom he has ordered to call upon him, in accordance with the provisions of Paragraph VI. Breaches of Paragraphs VI and VII, or of this paragraph, are punishable by a fine up to 200 kronen. Any individual who gives a physician a false name or occupation or dwelling, will be punished according to the provisions of Paragraph 155 of the penal code.

IX.

A child suffering with syphilis may not be nursed by any other than its own mother. A wet nurse, who suspects that she is suffering with such a disease, may not nurse a child of anyone else. Breaches of these regulations will be punished with the penalties provided in Paragraph 1187 of the general civil laws, and, furthermore, any guilty individual whose offense shall transmit a disease to another, shall be liable not only for the costs of the treatment, but also in the damages for the suffering and loss arising from the disease. Liability for damages shall exist for everyone placing a child to be fostered, should they be aware, or have any grounds for the suspicion, that it is suffering with a venereal disease, or who places such a child to nurse, without informing the caretakers or the wet nurse of the disease, or of the suspicion thereof, and of the dangers of transmission connected with this disease. No such fostering shall be permitted if other chil-

dren are thereby subjected to the danger of a transmission of the infection. Breaches of this regulation are also applicable to the public authorities who place children in foster care, or in institutions. A child will be considered to be suspected of having syphilis, even though it may present no symptoms of the disease, so long as one of the parents shall have acquired syphilis less than seven years previously, and so long as three months shall not have elapsed since the birth of the child.

X.

Those individuals who are suspected of having violated Paragraphs I, II, IV, or IX (second part), may be ordered, by the police, to submit themselves to a medical examination. Should the individual in question not voluntarily submit to the examination, then a court shall have the right to decide whether this examination shall be made without the consent of the individual.

XI.

The examination mentioned in Paragraph X shall be made at a place specified by the police, by a city physician or a district physician or by some physician specially detailed for this purpose. The compulsory examination shall (unless the individual to be examined does not distinctly waive this requirement) be made by a physician of the same sex as the individual to be examined, so long as such a physician is to be found in the same city, or in such close proximity thereto that no lengthy sojourn of the physician may become necessary thereby, and so long as the physician is willing to undertake the examination. The physician in question shall receive for such examination either a yearly salary, determined by the communal authorities, or receive a fee for each examination of 4 kronen for the first individual who is examined on that particular day, at a particular place, and for every such individual, 1 krone—eventually also traveling expenses. The physician shall receive no extra fee for the filling out of a certificate of the patient's condition of health.

XII.

Every public, or visiting physician [of the communal physicians.—F. B.] is required to examine, at any time, other than the above mentioned, every individual suffering with a venereal disease, where this may be necessary, and, in so far as treatment is permissible outside of the hospital, to treat such individuals. The physician is not permitted to receive a fee from the patient for such services, nor to demand one. The payment for such services shall be made from the communal funds, according to the above mentioned provisions.

In Copenhagen there shall always be a sufficient number of visiting physicians to hold consultations daily in different parts of the city, at stated hours, in accordance with the special provisions of the sanitary commission. (Laws promulgated by the Rijksgeslacht. Number of physicians determined by the communal authorities.)

XIII.

In every instance the public, or attending physician, is required, in view of the danger of infection, to inform the patient of the intervals at which he is to appear for treatment, and in case of necessity to do this by means of special printed notices. The observation of these provisions may be made compulsory, under penalty of fines.

XIV.

Those venereally diseased individuals who are confined to the hospital at the cost of the community, are not permitted to leave the hospital without permission of the physician. Violations of this provision are punishable with prison sentence at ordinary fare up to twenty days, or simple imprisonment up to one month.

XV.

The police may forbid hotel keepers, boarding house keepers, and landlords to have in their houses women who have been punished in accordance with Paragraph II of these laws, or to make use of such women for services, or entertainment of their guests. Breaches of this regulation are punishable with fines up to 100 kronen, imprisonment on ordinary fare up to two months, or compulsory labor up to three months. Should the individual in question, however, not have been previously warned, or punished, then the police authorities may, in place of the punishment, issue a warning. Such a warning, however,

may not be issued in case the individual in question demands a hearing before a court.

XVI.

In applying the provisions in regard to prison sentence, or confinement in a correctional institution, the provisions of the general civil laws, Chapter II, and also the laws of April 1, 1905, Paragraphs 10 and 12, are to be followed. All matters relating to the breaches of the laws Paragraphs 2, 6 (second part); 7, 8 (first part), 9, 14, and 15 are to be treated as public police matters, with the exclusion of the public, however. The fines resulting from such public police matters shall be turned into the public treasury; in Copenhagen, to the city treasury.

XVII.

Under the heading Venereal Diseases are to be included those diseases which are known to medical science as syphilis, gonorrhea, and venereal ulcer.

XVIII.

These laws shall come into force six months following their publication in the legal journals, but the inscription of immoral women, according to the laws of April 10, 1874, shall at once be abolished. At the same time, Paragraphs 180 and 182 of the penal laws, including the law of April 10, 1874, relating to the transmission of venereal diseases, the law of March 1, 1895, relating to changes and additions to these laws, the law of April 11, 1901, relating to additions to the last mentioned two laws, and the laws of February 11, 1863, Paragraph 8 (last clause), and February 4, 1871, Paragraph 2, *litteris citatis*, as well as all directions, etc., based upon the rights in existence before the laws of April 10, 1874, shall not again be put in force.

(To be concluded.)

THE CARE OF THE MENTALLY DISTURBED, NOT PERMANENTLY INSANE.

By TOM A. WILLIAMS, M. B., C. M. (EDIN.),
Washington, D. C.

Foreign Corresponding Member, Neurological and the Psychological Societies, Paris; Neurologist, Epiphany Free Dispensary, Washington.

1. The delirium of typhoid fever, pneumonia, or intoxication by alcohol is not regarded as a reason for a legal declaration that the victim is unfitted for liberty. Nevertheless, active restraint has to be used by those caring for the patient, who would otherwise harm himself or others. The reason the law is not invoked is the *recognition of the temporary nature and physical causation* of the mental disturbance.

Now that possession by demons is known not to be the cause of mental disturbance, and that these are, in the main, of physical origin, the question arises, why our attitude toward them should differ from that toward any bodily disease, especially when they are only temporary. Although there are some chronic psychopathies which so far are incurable, yet there is no means of distinguishing these in their early stages from some of the disorders amenable to treatment. Hence, as the early stages are the only ones which so far give promise of arrest, it is for these cases that provision is most urgent.

UNSUITABILITY OF THE ASYLUM.

Now, the asylum for the insane is entirely unsuitable for such persons; in the first place, because the patients' consciousness of impending danger is there aggravated by observation of the demented, violent, or depressed persons about them; in the second place, because of the unwillingness of both patients and their friends to face even the possibility of dis-

order of the mind which throws the stigma of insanity upon the family. A sensational instance of such unwillingness was that recently reported in the newspapers, where a father had kept his son chained up in a room in a condition of extreme filth for thirty years, in the hope that his disordered mind might be restored without the disgrace of a commitment to an asylum for the insane. This horrible atrocity was revealed only when the father died.

PSYCHOPATHIC HOSPITALS NO SOLUTION.

The solution of this difficulty has been attempted by the provision of special psychopathic hospitals, whose aim it is to receive only early and presumably curable mental cases. There are, however, two fatal objections to this. The first is that the laity will scarcely distinguish these hospitals from the insane asylums proper. To them they are both "crazy houses." The second objection is that disturbances of the nervous system must be considered as a whole. Mental disturbances and "nervousness" overlap; the same causes may produce each; and neither the layman nor the general practitioner knows how to differentiate one from the other, nor is he able to select the hospital appropriate for each. Besides, many features of the diagnosis, treatment, and problems of research of nervousness and disorders of the mind pertain to the general pathology of the body, and are similar to those of the nutritional diseases studied by the physician, whose cooperation is most desirable, both for the treatment of the patient and the advance of knowledge.

This cooperation is most readily secured in a large general hospital where many men, each with his special trend and knowledge, can collaborate in the study of each case. The utilization of this organization is a great economy compared with the establishment of a special hospital, which would require a staff nearly as large as that already in existence in the general hospital. All that is necessary, then, is the setting apart of a special ward with a special staff for the special care of disorders of the nervous system, including those in which the perturbation of mind is the special feature. The department must be in close affiliation with the medical and surgical staff, and patients will pass freely from one to the other department as their cases require.

IMPORTANCE OF THE DISPENSARY AND SOCIAL SERVICE.

Just as only a small proportion of the sick enter for hospital care, the vast majority finding adequate assistance as outpatients in the dispensary, so only a few of the nervous invalids will become inmates. The proportion is perhaps even smaller than in the case of other disorders. But to the ambulant neurotic the dispensary staff can be of enormous service. Such patients require an understanding of diagnosis of their cases in order that they themselves may collaborate with the neurologist who treats them. The special knowledge required for advising such sufferers should not be confined to the rich, but should be available to every one, in proper neurological dispensaries. It is to the staff of this department of the dispensary that falls the task of determining what cases would be benefited by residence in hospital, what cases could be well

treated as outpatients, what cases require something more, viz., special visits by a third section of the department, a staff of laity to visit the homes of the patients for social service, as it is called. Some hospitals have volunteer or paid assistants for this purpose; but the service can be performed through the associated charities or similar organization, and thus economize the administration.

REQUISITES FOR THE CARE OF NEUROTIC PERSONS IN AND OUT OF HOSPITAL.

For a properly appointed general hospital the additional expense would be very small. The main needs are:

I. *Provision for hydrotherapy.*—(a) The continuous warm bath for some disturbed cases of intoxicative type is much easier to give and supervise than in typhoid fever or pneumonia cases. Even when the service is large, one nurse can attend to it all, and there is not always the labor of watching temperature and pulse. (b) The shower or douche bath or packs of differing temperatures, again, needs a little labor, although the supervision and regulations must be very strict; but is not more difficult than the management of irrigations in the Fowler position or other care of surgical procedure. (c) The hot vapor or electric light bath are very easy to supervise in accordance with the prescription of the physician. (d) The hot or cold bath is more laborious; but is less required in proportion to the provision of facilities for the preceding methods of thermotherapy and hydrotherapy, except in some of the more debilitated patients.

II. *An exercise room.*—Here will be conducted the various psychomotor reeducation procedures as for the cure of tic (habit spasm), the removal of writer's cramp, or other occupational cramps, tremors, and paralysis, reeducation in ataxias.

III. *An occupation room.*—Here will be conducted the exercises of more psychological import in the therapy of those who have become inadequate, obsessed, and unambitious. The nature of the provision will vary much in accordance with the tendencies of the physician who directs, and the nurse who conducts the work. From arts and crafts to mental problems and mechanical labor a large choice of method is available.

All the foregoing facilities for treatment should, obviously, be available for patients who come for the purpose, and need not actually reside in hospital. Those who are not free patients will then pay charges for the room or service, just as patients do for any special service while in hospital.

UNNECESSARY APPARATUS.

Electrical appliances of elaborate and imposing extent are not only unnecessary, but detract from the really important measures which concern the patient. The excuse that they have a favorable psychic effect is worthy only of the mouth of the charlatan. The invocation of such aids is most detrimental to the patient, by augmenting his suggestibility, the very feature which it is the physician's task to diminish if he really understands the psychopathology required for the proper treatment of nervous invalids.

1705 N STREET, N. W.

THE MICROSCOPIC FINDINGS IN TWENTY-FOUR CASES OF MALARIAL HEMOGLOBINURIA.*

BY ALBERT WOLDERT, M. D.,
Tyler, Texas.

In the year 1902, I began to collect and observe a series of cases of malarial hemoglobinuria (blackwater fever or black jaundice) with the intention of determining, if possible, the predisposing and exciting causes of this condition. My studies extended over a period of eight years, and during that time I made microscopical examinations of specimens obtained from twenty-four cases of blackwater fever. This paper, therefore, is based upon eight years' work.

The method devised for carrying on my investigations was as follows:

1. To obtain complete history of the case, including the physical signs and symptoms presented.
2. Whether quinine, or any patent medicine, had been given previous to the onset of the paroxysms of hemoglobinuria.
3. The interval which elapsed between the time quinine or other alkaloid of cinchona was given, and the occurrence of hemoglobinuria.
4. The amount of quinine, or other alkaloid of cinchona, given (if any had been given) previous to the onset of blackwater fever.
5. Whether quinine aggravated the hemoglobinuria.
6. After the disappearance of hemoglobinuria, whether the administration of quinine produced a recurrence.
7. Duration of the hemoglobinuria.
8. The period which elapsed before or after the first appearance of the paroxysm of hemoglobinuria and vomiting of bile.
9. The period which elapsed before or after the first appearance of the paroxysm of hemoglobinuria and the occurrence of jaundice.
10. Duration of the jaundice.
11. The period which elapsed before or after the administration of calomel and vomiting of bile.
12. The urine: (a) Chemical examination of urine, including the color, odor, reaction, specific gravity, presence or absence of glucose, presence or absence of indican, presence or absence of albumin and blood coloring matter, the amount of albumin, and in some cases the amount of uric acid and urea excreted daily. (b) Microscopical examination: The presence or absence of red blood corpuscles, presence or absence of ordinary tube casts, presence or absence of bodies resembling tube casts and made up of destroyed hemoglobin, presence or absence of ameba, or other microorganisms, both in the fresh and in the stained specimens of urine.
13. The blood: (a) Estimation of hemoglobin; (b) differential leucocyte count; (c) presence or absence of malarial parasites; (d) the resistant powers of the red blood corpuscles; (e) the presence or absence of other microorganisms than the malarial parasites in the blood.
14. The mortality.

*Read before the Section in Medicine and Diseases of Children, Meeting of the State Medical Association of Texas, Waco, May 9, 1912.

STUDY OF THE BLOOD AND THE MALARIAL PARASITE.

In studying the blood in malarial hemoglobinuria, I have always found it best to use stained specimens. I would not advise microscopical examination of fresh specimens of blood in blackwater fever after the onset of hemoglobinuria occurs, for the reason that after the paroxysm begins, malarial parasites are generally so few in number that they may be entirely overlooked. In such cases a prolonged search is often required to find even one parasite.

The stain I used was a modification of the original Romanowsky method, modified first by Nocht, then by Ewing, then Hastings, and finally by myself. As finally made up, it was as follows: 1. A solution of eosin; 2, a solution of polychrome methylene blue; and, 3, a solution of methylene blue. These solutions were mixed when needed in certain definite proportions.

I prefer this stain above all others, because it is easily prepared when needed, keeps well, and all forms of the malarial parasites stain well with it, from the youngest merozoite and ring forms to the full grown parasites. The nuclear chromatin always stains a beautiful garnet color, the protoplasm a deep blue, the pigment granules black, the red corpuscles a deep pink, and the nuclei of the leucocytes a homogeneous purplish color. The azurophile granules also always show up well.

The percentage of malarial parasites found in the blood. In my series of twenty-four cases, the blood was examined in twenty-one. In all instances it was examined *after* the development of hemoglobinuria. I positively found malarial parasites in the blood in only two cases, while in two additional cases their presence was doubtful. In the two cases in which the parasites were positively found, both were of the estivoautumnal variety. In one of the cases the intracorpuscular ring form of the parasite was present, and the specimen showed the greatest number of parasites I have ever seen in any case of malarial fever. In this case perhaps one third of all the red corpuscles were infected, some red cells containing as many as three parasites each. This patient recovered. In the other case I found one ring form parasite within the cell, and a flattened merozoite attached to the outer rim of the corpuscle.

The positive results in this series of twenty-one cases examined would, therefore, be two per cent. In Panama, Whipple (1), in twelve cases of blackwater fever, found malarial parasites present in three cases, or twenty-five per cent.—all of them being of the estivoautumnal type.

Doubtless the small percentage of positive results in my series was due to the fact in every instance I examined the blood *after* the hemoglobinuria had begun. If the blood had been examined *before* the hemoglobinuria had occurred, the percentage of positive results would doubtless have been much larger. For instance, J. W. W. Stephens (2) reports from six different observers and says: "Of twenty-three cases on the day *before* hemoglobinuria developed, malarial parasites were found in twenty-two cases, or 95.6 per cent.; on the day hemoglobinuria occurred, out of sixty-three cases malarial parasites were found in thirty-nine cases, or 61.9 per cent.; and on the day *after* the onset of

hemoglobinuria in sixty-four cases, eleven or 17.1 per cent.

Other statistics of blackwater fever have shown that on the day before the development of hemoglobinuria, malarial parasites were found in 61.9 per cent. of the cases, and on the day after development of hemoglobinuria, parasites were found in about eighty-three per cent. of the cases.

My results therefore confirm the work of others that *after* hemoglobinuria occurs malarial parasites rapidly disappear from the peripheral blood.

Hemoglobin reduction. As to the hemoglobin in certain cases, it seems quite remarkable that it may be reduced to such a low degree and yet support the life of the patient. In one of the cases of my series I found the hemoglobin was only ten per cent., confirmed by blood obtained from the ear and the finger, and yet that patient finally recovered. The blood picture in these cases, therefore, is always one of a profound degree of anemia.

The leucocytes. In the whole series (twenty-four cases) a differential leucocyte count was made in twelve cases; and so far as I am aware, it is the largest series of cases of blackwater fever in which a differential leucocyte count has been reported in America. The counts were made for me, through the courtesy of my friend, Dr. L. Napoleon Boston.

The results of the count go to show that in blackwater fever there is a reduction in the normal percentage of polymorphonuclear leucocytes, occurring within a few hours of the time of onset of the paroxysm of hemoglobinuria and persisting for several days subsequently. How much one can attribute this reduction to the preexisting malarial fever and how much to the paroxysm of hemoglobinuria, I do not know.

In twenty counts, made in twelve cases, the polymorphonuclears averaged forty-nine per cent. of all leucocytes. In normal blood Cabot (3) gives the proportion of polymorphonuclears as from sixty-two to seventy per cent.

In all cases of my series the large lymphocytes seemed to be increased from the time of onset of the paroxysm of hemoglobinuria to several days subsequently. It seems probable that this increase in the number of large lymphocytes indicates the malarial origin of the condition.

In twenty counts, made in the twelve cases, the large lymphocytes average twenty-seven per cent. of all leucocytes. In normal blood Cabot gives the proportion of large lymphocytes as being from four to eight per cent.

In nineteen counts, made in the twelve cases, the small lymphocytes averaged eighteen per cent. of all leucocytes. The small leucocytes, therefore, showed a slight reduction, since Cabot gives the normal proportion as being from twenty to thirty per cent.

An unusually high percentage of "mast" cells were present in two cases. A high percentage of myelocytes were present in five cases. Myelocytes, it should be recalled, are not present in normal blood, but are numerous in certain forms of primary anemias, such as myelogenous leuchemia.

I found no other forms of microorganisms than the malarial parasites present in the blood in these cases of blackwater fever.

THE URINE.

In this series (twenty-four) of cases of black-water fever, the urine was examined in seventeen cases. Observation of the whole series proved that at the onset of the paroxysm of hemoglobinuria the urine within a few hours changed from the normal color to a dark red or port wine color, due to the contained hemoglobin. This red or port wine color, did not in a single instance depend upon the presence of red blood corpuscles. Not one of the cases in the entire series of seventeen examined, could be properly classed as one of hematuria. In eight out of the seventeen cases examined, I found that red blood corpuscles were *entirely* absent in the urine. In seven cases, and two doubtful instances in which red blood corpuscles were found, they were *never* present in sufficient quantity to give a red color to the urine. In some specimens I would occasionally find two or three red corpuscles. In one case I found nine or ten red cells present in each microscopic field. Free hemorrhage from the kidneys *never* occurred in any of my series of cases.

In all instances the reaction for blood coloring matter was obtained in the urine, when examined for, by placing a drop of urine on a piece of white muslin, and afterward adding a drop of freshly prepared tincture of guaiac, and a drop of ethereal extract of hydrogen peroxide, when a bluish zone would be produced at the point of contact.

The very large amount of albumin present in the urine, and the great amount of destroyed hemoglobin also present, indicates a high grade of dyscrasia. The suddenness with which the hemoglobin appears in the urine after a shaking chill, indicates that the excretion of blood coloring matter begins almost immediately after it has been thrown out of solution.

In most instances the urine was devoid of odor when first excreted, and in my experience seemed to require a longer time to undergo decomposition than normal urine. I have kept specimens of the urine for several weeks, if not for months, apparently without a fetid odor occurring.

The reaction of the urine was in nearly every instance acid. Neither glucose nor indican were ever present. I have never found bile present in the urine in malarial hemoglobinuria, unless I had good reasons for believing that it had been contaminated with vomitus, which, in these cases, is often composed largely of bile.

In some instances the amount of albumin and blood coloring matter present after boiling amounted to fifty per cent. of the entire bulk of the urine, and in one instance, after boiling the urine, it solidified to such an extent that, upon inverting the test tube, only a few drops of clear, brownish urine ran out.

The relation of uric acid to urea in cases of malarial hemoglobinuria apparently varies considerably. In one of my cases the relation was one part uric acid to ten of urea; while in another case the relation was one part uric acid to sixty-three of urea.

In some specimens of urine, I repeatedly found certain round and concentrically arranged bodies.

from ten to forty micra in diameter, often containing a darker brown dot or apparent nucleus. These bodies were doubtless inorganic in nature. They closely resembled organic bodies, but in my opinion were composed of uric acid. I frequently found bright, red crystals of hematoidin. I never found any special type of microorganism prevailing in the urine.

In several instances I found that disintegrated blood coloring matter (or destroyed hemoglobin), while under the cover slip, would arrange itself in the shape of tube casts. By touching the top of the cover slip gently with a needle, I found that I could at times make these loose particles of destroyed hemoglobin arrange themselves in the shape of tube casts. Barratt and Yorke (4) have found these reddish granules entirely blocking the collecting tubules of the kidneys, and state that, "Suppression of the urine in blackwater is of mechanical origin, due to a blocking of the renal tubules"—an opinion with which it would be hard to disagree.

Of the seventeen cases in which the urine was examined, I found hyaline and granular casts, as ordinarily met with in nephritis, present in seven cases, and absent in ten cases. In nine cases out of the seventeen, I found bodies resembling tube casts, made up of disintegrated blood coloring matter, but what percentage of these bodies had been formed in the kidneys, and what percentage had been formed after being excreted from the body, I do not know.

After reviewing this series of cases, and in some instances watching them for several years after their recovery, I have never found in any instance evidence that nephritis developed as sequelæ of their attack of hemoglobinuria. During the paroxysm of hemoglobinuria, nephritis unquestionably occurs in many cases. I do not understand why nephritis is not a more frequent sequel of this condition.

THE CAUSE OF BLACKWATER FEVER.

In *every* one of these cases I found there was a history of malarial fever previous to the onset of the paroxysm of hemoglobinuria. In the twenty-four patients I found that six (or twenty five per cent.) had taken no quinine or other alkaloid of cinchona for a period of several days to a year previous to the onset of the hemoglobinuria. I proved the presence of cinchona alkaloids in the patent medicines taken in some cases, by chemical analysis and by obtaining the thalleioquin reaction. This large percentage of cases in which no quinine or other alkaloid of cinchona had been given previous to the development of hemoglobinuria, does not confirm entirely the observation of Koch (5) and Nocht and of others who entertain their views. Malarial fever was an invariable antecedent in the production of the consequent hemoglobinuria. The *malarial parasite* is, therefore, *one* exciting cause of hemoglobinuria. On the other hand, we are forced to admit that during the course of malarial fever, and especially during the course of a chronic form (which need not necessarily be estivoautumnal infection), that quinine or other alkaloids of cinchona may and sometimes *do* cause a paroxysm of hemoglobinuria.

Of sixty patients with blackwater fever reported by Nocht, he states that fifty-eight had taken quinine, one other methylene blue, and still another antipyrine. Nocht further states that "each blackwater fever patient can tolerate a limited amount of quinine. The transgression *beyond* this amount produces blackwater fever." Koch concurred in these opinions of Nocht (6). Koch did not believe, nor does Nocht *now* believe, that quinine is the *only* cause of blackwater fever, but Koch (7) concurred in the views of Nocht that in *most cases* it is the quinine alone which brings on the attack. Nocht stated that the limit of the dose differed with each patient, and ranged from fifteen and a half grains to three twentieth grain. Ziemann had a case of blackwater fever in which the limit of the tolerance to quinine was three fortieths grain. In order to cure the predisposition to hemoglobinuria following quinine, Nocht found that it was best to begin giving the patient small doses of quinine and gradually to increase the dose until a tolerance has been established. He began with one sixth grain doses, and during prolonged periods gradually gave larger doses and in that way relieved the predisposition to blackwater fever.

In blackwater fever, the hemoglobin being so rapidly thrown out of solution, one might infer that hemolysis occurs in the blood stream. Nocht, however, is of the opinion that the hemolysis does not take place in the circulating blood, and that it does not depend upon a cooperation of hemolysin in the circulation with quinine, but that it is more probable that the hemolysis arises through the influence of the internal organs, such as the spleen, liver, or kidneys, without the influence of the hemolysin in the serum. Koch apparently concurred in this view of Nocht.

I found that by adding a drop of normal blood to a small amount of normal saline solution in a test tube and maintained for a few moments at the normal body temperature and containing a minute amount of quinine or other alkaloid of cinchona, that hemolysis occurred, these drugs dissolving out the hemoglobin and converting the red corpuscles into shadow or "ghost" cells, rendering the supernatant fluid reddish in color. However, it might be said that experiments have been made to prove that this hemolysis by quinine does not occur in the circulating blood.

The proof is overwhelming that quinine or other alkaloid of cinchona may be *one* exciting cause of blackwater fever (malarial hemoglobinuria, or black jaundice). Therefore, during the course of malarial fever (especially a chronic case in which quinine has been given), there appear to be two different agencies operating, either one of which has the power of producing or causing hemoglobinuria; and these two agencies or *causes* are: 1. The *malarial parasite*; and, 2, *quinine* or other alkaloid of cinchona.

It is, however, very evident that in those cases of malarial fever in which quinine has been given, and in which hemoglobinuria occurs, that it is the malarial parasite that has gone on before, crippling the red blood cells and paving the way for the secondary toxic or hemolytic effect of the quinine.

Having had practical experience of fourteen years in a district in east Texas, where malarial fever is more or less common, and having given this subject special study during that time, I feel that I am warranted in making the general assertion that the occurrence of malarial hemoglobinuria (blackwater fever) goes hand in hand with the prevalence of malarial fever, and when malarial fever disappears, blackwater fever also disappears.

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TREATMENT OF ACUTE STAPHYLOMA OF THE CORNEA.*

The Use of Adrenal Gland Extractives.

By PAUL J. PONTIUS, A. M., M. D.,

Philadelphia,

Attending Surgeon, Wills Hospital; Ophthalmologist, St. Joseph's Hospital.

The active principle of the adrenals, epinephrine, has been used for the relief of pain in all forms of keratitis, and in the relief of tension in acute glaucoma it has proved very valuable. Experimentally it has been found to reduce the formation of the aqueous humor in animals; and a close observer has reported one case of double glaucoma, in which the solution not only relieved the pain, but caused some contraction of the pupil. Sajous pointed out that the influence of adrenal extractives was due to the great rise of a metabolic activity it engenders directly in the muscular elements of the arterioles, including those which supply the cornea and the sclera. The calibre of the arterioles being reduced by the contraction of their muscular coat, the volume of blood plasma admitted to the ocular structures is also greatly reduced. The veins which carry off the blood from these structures are not influenced, however, and the intraocular tension is relieved, merely because more fluid leaves the eye than is supplied by the arterioles.

On account of this physiological action, the writer was induced to use epinephrine in acute staphylooma of the cornea, so frequently seen in ulcerative keratitis, instead of puncture and pressure bandage, or later doing a partial excision of the cornea. The following partial histories taken from the hospital records will illustrate its effect:

CASE I. J. W., aged forty years, stevedore, returned to the clinic one week after being discharged from the house, presumably cured of ulcerative keratitis, with the cornea bulging about three mm. An instillation of eserine was made and a pressure bandage applied, but he complained of twitching and the annoyance of the bandage. A one to 1,000 solution of epinephrine was instilled, and the patient remained during the clinic hour, at the expiration of which time he had experienced marked relief. He was sent home with a one to 1,000 solution, which he was directed to instil three times a day. He returned, two days later, stating that he was more comfortable. Upon ex-

*Read before the Wills Hospital Ophthalmic Society, April 1, 1912.

amination there was noted less bulging of the cornea. The treatment was continued, and at the end of four weeks the bulging had entirely disappeared.

CASE II. J. P., male, aged seventeen years, was admitted with a lime burn of the entire cornea and conjunctiva. He was given the usual house treatment for burns, and three weeks later the cornea had sloughed away almost to Descemet's membrane, and was beginning to bulge, the eyeball showing increased tension. A one to 1,000 solution of epinephrine was instilled three times daily; the bulging disappeared within two days, although the cornea was very thin. Tension was normal. At this time there was noted symblepharon and slight entropion of the upper eyelid. Four weeks subsequently, he was discharged from the house with normal tension, vision of light projection, and without bulging. One month later, he returned to the clinic with vision of the fingers at two feet, cornea very hazy, but no semblance of ectasia.

CASE III. C. R., male, aged twenty-six years, admitted to the house after two weeks' treatment elsewhere. He presented a deep, disc shaped ulcer in the centre of the cornea, with hypopyon to level of the iris margin below; pupil contracted, and a deep ciliary injection. Four days later, the hypopyon disappeared, the pupil was one half dilated, and the ulcer not spreading. One week subsequently the patient was taken with a severe attack of ulcerative tonsillitis, following which the ulceration of the cornea increased with perforation, accompanied by prolapse of the iris. A one to 1,000 solution of epinephrine was added to the regular treatment, together with a stronger solution of atropine. The iris was freed and no bulging followed.

CASE IV. R. S., coal miner, aged forty years, admitted to the house with a large ulceration of the cornea. The injury was produced by a piece of coal, nineteen days previously. Almost the entire cornea was opaque and sloughing. There was a hypopyon filling three fourths of the anterior chamber, which was removed by a keratome incision through the cornea below. Seventeen days later, ectasia developed. A one to 1,000 solution of epinephrine was instilled, in conjunction with the regular treatment. Ten days later, the eye became quiet, the cornea not ectatic; and, two weeks subsequently, the patient returned to his home with no bulging, although the cornea was very hazy. The tension was normal, and there was vision of light perception.

CASE V. F. N., male, aged thirty-two years, was admitted to the house with the history of having been struck in the left eye, three weeks before, with a piece of plaster. Examination revealed an ulcer involving the upper half of the cornea, with two small, dense foci below; the whole cornea was hazy with intense ciliary congestion and large hypopyon. The hypopyon was removed by keratome incision from below. Eighteen days later ulcer "clean," but beginning bulging was noticed. A one to 1,000 solution of epinephrine was added to the treatment. Two weeks later, the patient was discharged, without bulging.

CASE VI. F. B. W., male, aged fifty years, struck in the left eye with a piece of glass, causing a linear perforation of the cornea three mm. long, extending from limbus toward centre, with prolapse of iris and traumatic cataract. Iridectomy was performed and the lens curreted. Infection occurred, with involvement of only the anterior chamber. The wound was very slow in healing, but with a thin cicatrix, which began rapidly and markedly to bulge. A one to 1,000 solution of epinephrine was used, and the cornea gradually became flat and firmly cicatrized. Three months later, there was no bulging of the cornea.

These few cases represent a type treated during the past three years, with no failures when the solution had been used as directed. Briefly stated, the adrenal active principle has no specific effect upon the corneal tissue, but it reduces staphyloma of the cornea by constricting the arterioles, thus relieving the pressure in the lymph areas, and in this manner causing the reduction of the intraocular tension, permitting the cornea to resume its normal form.

108 PROFESSIONAL BUILDING.

TEN SEX TALKS TO GIRLS.

By IRVING DAVID STEINHARDT, M. D.,
New York.

VII.

In our talks on sex we have traveled over much ground. We have studied anatomy, physiology, some normal functions, some disgusting yet serious diseases, immorality, and several other things beside. To-night we are going to travel still a little further. We are going into the married state. Here you are also going to find me perhaps somewhat of a dreamer, because I am going to plead for only ideal marriages based on love and that is a rare intruder into this work-a-day world, you know. It seems to me that only with this for a basis can sexual relations even in the marriage state, be other than immoral. It is not the marriage law of man that makes a marriage binding, but the higher law of God which should be and truly is founded on love—mutual love. Why should the topic of marriage enter into a talk on sex? The answer is simple. Happy marriage is a most potent force for morality and the well being of our race, both as to health and happiness, and within certain limits the earlier that happy marriage takes place the more potent in its force is it for morality, and therefore also for health and happiness of you and your descendants.

I believe in early marriage for several reasons. The sexual function is in full development at a certain age and that seems to indicate that Nature advises mating at that time. Healthy sexual desire also really makes itself felt about this time, which also seems to be Nature advising matrimony. It also seems better that parents should have children at such ages that barring the ordinary uncertainty of life, they would still be living as their children grow up to guide them and advise them in the problems of life, and not be too old and infirm to be interested in life just at the time their children need them most. I think children of marriages late in life suffer many disabilities, not the least of which is the age of their parents as the children approach their majority, if indeed the parents are living at all. Another reason for early matrimony is the attitude of the contracting parties themselves. They are more susceptible to moulding—a very necessary process in married life if you want to be more happy than the average couple. Two people with firm set and unyielding diverse ideas can be a very unhappy married couple, even though they love each other dearly. The older you get, the more set you become in your ways. Again, in the full bloom of your development childbirth is easier for you and better for your offspring. You will retain your youth with childbirth earlier in your years, than with late births. Your recuperative powers are naturally better and stronger.

The dangers of early marriage must not be overlooked. They are some very real ones. One of these is not being sure of being in love with the man you want to marry, for marriage should be at least a lifelong contract and not a short term leasehold to be easily broken at any convenient time. The question as to when divorce is permissible is hardly a part of our talks, and therefore any dis-

cussion of the subject would be profitless to you. There is a vast difference between love and infatuation, and the marriages based on the latter, which might be called a rank counterfeit of real love, are not likely to be either lasting or even happy in their brief duration. The great trouble with most people is that they treat marriage as something requiring no thought, whereas it is something of great import and requires long and serious consideration, before being entered into. "Marry in haste and repent at leisure" is a very apt epigram. Likewise the one which states "Oh! yes, she married so that she could put Mrs. on her tombstone." Rather be a happy old maid than an unhappy wife. The latter is the most miserable of women and is very liable to add to her misery and unhappiness in a reckless "I don't care for the consequences" search for something resembling happiness.

I am going to endeavor to tell you what I think a girl ought to look for in a man she would contemplate matrimony with. I do not believe that love should be blind. On the contrary, I think it should be very wide awake in every particular. The man you marry you have to live with and be in his constant company for the rest of your life. Therefore, it is worth while studying him to see him as he actually is, and not as he may appear on the surface. There are two old toasts that I may mention here. The first goes "Here is to our wives and our sweethearts and may they never meet." The girl who rushes into matrimony blindly is liable to have her husband the one who is proposing that toast in some barroom in a mixed company. The second goes "Here's to our wives and sweethearts. May our sweethearts soon become our wives and our wives always be our sweethearts." The careful girl is more likely to have a husband who will daily toast her thus, both in and out of their home.

The first essential for contemplating matrimony is mutual love of the purest and most constant type. Select your man for his manliness, for that is his real worth. Observe how he treats his mother and sisters, and any woman he may be in business with, for that is how he is going to treat you in the long run. Do not select an excessive drinker, with the idea you are going to reform him. Your chances of success, if you marry him, are very slight. If you feel brave enough to take a chance on his future, reform him first and marry him afterward. He may stay "reformed" if you are a particularly good wife. Do not marry a man who is talked about for his excessively loose morals, and think because he married you he is going to give up his past for good. He may, but it is very doubtful and the chances are that he will not. Marry a moral man who respects your sex. Your chances for having a decent husband will be better. Do not think you are in love with a man because he gives you "a good time." Free money spenders do not make liberal husbands necessarily—you see it is hard to keep up your reputation outside as a liberal spender, and at the same time support a home in comfort—especially on a small salary in times of excessively high cost of living. A quiet, honest, plain spoken, home loving man, even tempered, kind and thoughtful, ought to make a good husband.

Now what are you to do to make a good wife?

First, maintain a constant, true, and ever present love, of the most earnest and highest type, for your husband. You must make your home a place of sunshine and comfort for him, to which he turns to at the end of his daily work with thought of the happiest anticipation of pleasure. Your daily housework is no more monotonous or harder than his daily grind at business, and he has a right to expect a neat, smiling wife on his return to his home. So many of you are business workers that you can know the truth of the statement, that business duties have cares and troubles attached to them as well as home duties. Study your husband's likes and dislikes, strive to cater to the former and avoid the latter. Be unselfish and affectionate but do not, in endeavoring to be the latter, overdo it. Love and kisses, caresses and embraces are a very rich diet and must be mixed with good housekeeping, both as to food, neatness, of house and self, likewise of clothing kept in good repair, to be a success and not give your husband indigestion. Give to your husband all of the very best that is in you and be patient of his shortcomings, even as you will expect him to overlook yours. Build the foundation of your married life on the firm and enduring rock of love, and not on the shifting sands of infatuation, or any other cause of marriage. In a happy marriage sexual relations are a pleasure and happiness gradually led up to and coming as a climax to an expression of the highest degree of love. In other kinds of marriage the sexual relations are very little raised above immorality, in which the marriage contract is used to legalize the animal desire of aroused sexual passion.

Between husband and wife there should be perfect accord and frankness. For one to have secrets from the other is liable to bring about misunderstandings and distrust. Any apparent necessity for secretiveness is avoided by living an open and irreproachable life. Married women are strongly advised to avoid having intimate friends among the opposite sex. Particularly to be avoided is your husband's best friend. He is usually the first one your husband will get jealous of. Avoid arousing your husband's jealousy. Jealous husbands are not unlike jealous women—very unreasonable and oft-times somewhat of a menace to one's personal safety.

The marriage relation indulged in to excess is detrimental to the health of both husband and wife. It is weakening to mind and body alike and dangerous to resulting offspring. If you think over what I have told you in some of my previous lectures, you can readily understand why this latter is a fact. Do not attempt to avoid the responsibilities of motherhood unless there are medical reasons for doing so. What these reasons are we need not discuss here. They are for discussion in the physician's office. Be a mother if you possibly can. If you cannot, you deserve pity for many reasons. Many childless marriages could have been fruitful if the wife, as a single girl, had not been possessed of that false modesty which prevented her from attending to certain complaints she suffered while single. Many of the leucorrhœal troubles come under this heading owing to the chronic inflammation they set up in the various parts of the creative tracts. Of

course all childless marriages are not the fault of the wife; many of them are, however, and from very preventable causes. An ideal mother is woman at her best. It is when she has achieved this state that she has reached the highest goal that woman can strive for. Almost any woman can give birth to a child. It takes a bright woman to be a real mother. Merely giving birth to a child does not make you a mother any more than the marriage ceremony makes you more than a wife in name. It takes some gray matter to be either a real wife or an ideal mother. It takes a great deal more common sense to succeed here than it does to make a business success. College courses in wifehood and motherhood are not a joke to be laughed at, but if properly worked out can be of great use in adding to your welfare and happiness. I think that many divorces would never take place if such courses were established and became justly popular. Such courses would have to include sexuality, as a proper understanding here is most important to marital success. Wives and husbands both have certain rights in this part of their married life which should be understood by both. Difference in sexual appetite must be adjusted to make a perfect union. A nonpassionate wife married to a very passionate husband, or the reverse, is liable to cause dissension. I advise moderation for the sake of their own health and happiness and for the benefit of any offspring. While I do not believe that any husband or wife need apologize for being unduly sexually inclined, still oftentimes it is unnatural and due to certain conditions that need correction from a medical standpoint. Likewise if the sexual relation is apparently repulsive or painful to the woman, the physician should be called in to correct what is wrong. It is very important that the sexual part of the married life be mutually agreeable and pleasurable. On it depend the continuation of our race and the quality of our offspring to a great degree.

There are several other things which could be said regarding the sexual relations between man and wife, but as you are not all engaged and about to enter the marriage state I have, after some thought, decided to omit saying them. I make it a rule in my private practice to always have a little confidential talk with all my patients who have become engaged, before their wedding, whether it is a male or female patient. I think these talks are of value to them in their future life and help them to achieve happiness.

310 WEST NINETY-NINTH STREET.

VAGINAL CÆSAREAN SECTION POST MORTEM.

BY ALFRED T. HAWES, M. D.,
Lynn, Mass.

The rights of the unborn child have often been the subject of discussion in medical circles, and it is creditable to the profession that the subject is receiving more consideration. In former times, the life of the child has not been considered of great importance, hence the prevalence of craniotomy and the mutilating operations on the child. In recent

times, however, while the safety of the mother has been given paramount importance, at the same time the rights of the child have been carefully balanced. With the development of asepsis and the technique of Cæsarean section, there has been a marked conservation of the lives of babies.

The opportunities for the delivery of the child after the death of the mother have been comparatively rare. There must be reasonable assurance that there is a good chance for the survival of the child. The period of the survival of the child after the death of the mother cannot be longer than one half hour, and may be a much shorter period. If the death of the mother takes place gradually, the child may die first, or may be so weakened that it has no chance for survival. Death of the mother must be comparatively sudden, the child must be near enough to full term to have a good chance for survival, and examination of the fetal heart by the stethoscope should show that the child is indeed alive. The following case is interesting:

CASE. Mrs. M. O., aged forty-two years, para X, was seen when within two weeks of full term. For the previous week, the patient had had severe headaches, had vomited every day, and edema of the legs had become so great that she had difficulty in getting around the house. What troubled her most, however, was a large ventral hernia which had been growing larger during pregnancy. Examination showed a mass as large as a child's head, which hung down to the level of the symphysis. The patient stated that at times the mass became hard and painful, and that at these times she was nauseated and vomited. The patient was a stout woman, weighing over 225 pounds, and the mass, as well as the whole abdomen, was covered by a thick layer of subcutaneous fat.

The urine which had been passed since morning was less than a pint in quantity, and contained a large amount of albumin, hyaline and granular casts. The toxicemic condition was so serious, that the patient was at once sent to the hospital for treatment. The next morning, her condition had slightly improved. She had slept somewhat during the night, her headache was much better, there was no vomiting, and the rest in bed had decreased the edema of the legs. Urinary examination at this time showed specific gravity, 1.014, a large amount of albumin, and many hyaline and granular casts. The quantity, however, had increased, and since admission, sixteen hours before, she had passed thirty-seven ounces.

Vaginal examination showed a rigid cervix which admitted one finger with difficulty. On account of her slight improvement, forcible delivery did not seem justifiable, but as she was within two weeks of full term, and nothing could be gained by delay, an attempt was made to stimulate normal labor pains. A strip of sterile gauze was packed into the cervix and the lower segment of the uterus, and the vagina was packed. The patient was comfortable all day, was not troubled by headache or vomiting, but no labor pains were induced.

About 1:30 a. m. she vomited a large quantity of fluid and complained of difficulty of breathing. She seemed somewhat somnolent and could be aroused with difficulty. A few moments later, she had a slight convulsion. I arrived at the hospital about half an hour later and preparations were made for immediate delivery. During the preparations, the patient suddenly ceased breathing, became cyanotic, and the pulse could not be found. Examination by the stethoscope showed that the heart was not beating. Artificial respiration was carried out for a few moments, but was of no avail.

My attention was called by the head nurse to some movements of the baby, and on palpating the abdomen, a well defined kick was felt. Vaginal examination showed a thick and rigid os uteri, which would admit only one finger. With a pair of scissors, a transverse incision was made in the anterior vaginal fornix. The bladder was held out of the way, and the lower segment of the uterus was incised transversely. The hand was inserted in the incision and the uterine wall allowed to tear on either

side. After rupturing the membranes, the feet were grasped and the baby was delivered by podalic version, ten minutes after the death of the mother. The actual delivery consumed about two minutes.

The baby was cyanosed, there were two or three feeble attempts at respiration, and the heart was beating strongly. The baby was at once placed in a hot bath and efforts were made at resuscitation. The heart beat was extremely slow (fifty a minute), and although the heart continued to beat for thirty-five minutes after birth, there were no further efforts of respiration. The baby was fully developed and weighed nine and one half pounds.

The fact that there were attempts at respiration when the child was delivered, ten minutes after the death of the mother, and the fact that the action of the heart continued for thirty-five minutes after delivery, would seem to justify the operation. The nonsurvival of the baby was at least partly due to the toxic condition of the mother. It is doubtful if the baby could have been delivered more quickly by the abdominal route. The objections to delivery by the abdominal route were the amount of fat, and the hernial sac filled with intestines and omentum. Also, on account of the pendulous abdomen, the uterus had sagged to one side.

In all of these cases, also, the shock to the feelings of relatives and friends by the abdominal incision must be taken into consideration. On the other hand, there is somewhat less chance for the child by the vaginal route. Although the resistance to delivery by the cervix and lower uterine segment is taken away, nevertheless some force must be used to deliver through the pelvis and perineum, and the shock to the child is increased. It must be remembered that the child is considerably weakened, and is continually growing weaker, before delivery is started. In this case it seemed that the child should be given the chance, and the vaginal route was the quickest and safest, all things considered.

85 NORTH COMMON.

TWO FORMS OF ACUTE INTESTINAL OBSTRUCTION WITHIN FIVE MONTHS IN AN INFANT ONE YEAR OLD; TWO LAPAROTOMIES; APPENDECTOMY; RECOVERY.

By LOUIS NEUWELT, A. B., M. D.,
New York,

Adjunct Surgeon, Washington Heights Hospital.

It being a rare occurrence to have two different forms of acute intestinal obstruction—an intussusception and an obstruction by adhesions—within five months, in an infant one year old, I desire to report the following case. The baby, when eight months old, suffered from an intussusception of the ileocecal variety, from which she recovered after operation. An appendectomy was done at the same time. Five months thereafter, she again had an acute intestinal obstruction, this time the cause being the presence of peritoneal adhesions, which evidently resulted from the previous operation.

CASE. M. G., female, born in United States, aged eight months, first came under observation May 30, 1910. Family history was negative in regard to similar ailments. The baby was well nourished, the second of a family of two children. She was breastfed until about five weeks

previously, since which time she had been also getting a little table food. The bowels were fairly regular in action. At noon, she was first seen by me at home. The mother reported that the baby had been perfectly well before, and suddenly while playing on the floor, she fell over and had a slight convulsion. She then vomited several times, and after a half hour became very drowsy. The stools looked like currant jelly, consisting of mucus and blood. Tenesmus was severe and occurred about every five minutes.

Examination showed the baby to be very drowsy, pale in color, and prostrated. The pupils were normal and reacted to light and accommodation. The tongue was slightly coated and moist. Examinations of heart and lungs were negative. The abdomen was slightly distended, tender, and rigid. The characteristic sausage shaped tumor could be felt an inch above and to the left of the umbilicus. On rectal examination, a mass could be felt on the right side, very high up. The anal opening was dilated a half inch. The rectal temperature was 98.2° F.; pulse, 110; respirations, 26. Urine examination was negative.

As to treatment, palliative measures were tried at first, such as inflation of the bowels with air for fifteen minutes, and then the rectal injection of warm saline solution while the baby was held inverted for ten minutes but both procedures were of no avail. Operation was then advised and the patient was taken to the Washington Heights hospital about 4 p. m. On admission the temperature was 98.0° F.; pulse, 110; respirations, 26.

Blood examination showed white blood corpuscles 13,000; differential count, polymorphs, 56 per cent.; large and small mononuclears and transitional, 44 per cent.

Operation. At 5:30 p. m. the baby was operated upon. The whole abdomen was prepared by applying first benzine, then drying the belly with a sterile towel, followed by one coat of tincture of iodine (U. S. P.) at the time of arrival at the hospital. Just before the incision, another coat of iodine was applied. The anesthetic used was ether by the open drop method. A straight incision, about four inches long, was made in the left hypogastrium, over the most prominent part of the mass. On incising the peritoneum, about one half ounce of turbid, bloody fluid escaped. The gut presented an intussusception extending from the ileocecal junction to the splenic flexure of the colon, which was reduced by gentle traction and stripping the gut backward toward the cecum. The gut was very much congested. The appendix, which was about four inches long, angulated by adhesions, and congested, was removed by the circular cuff method. The abdominal wall was sutured in tiers.

Postoperative history. The subsequent history showed a rise of temperature to 103.2° F., during the next day, with a fall by lysis for the next two days. Paregoric, ten drops, was given every three hours when necessary for the first few days, to keep her quiet and thereby favor the healing of the abdominal wound. After sixteen hours the baby had a breast feeding every three hours. Following the operation the bowel movements became normal in character and frequency, and the baby went on to an uneventful recovery, being discharged from the hospital June 7, 1910.

The baby was kept under observation from time to time until October 26, 1910, when I was again hurriedly called. She had been vomiting every ten to twenty minutes for the last twenty hours. The vomitus consisted at first of white mucus, it then became bile stained, and later had a fecal odor. It had two loose bowel movements in twenty-four hours with much mucus, but very little blood. The child then looked as it did before the first operation, and was again hurried to the hospital for observation. Shortly after its arrival, it went into shock with a temperature of 99.2° F. (rectal); pulse, 40, feeble and thready; respirations, 24. The extremities were cold, and the mental condition was one of extreme dullness.

The child was prepared for operation with benzine and iodine as previously. A right rectus incision, three inches long, was made, and a peritoneal band of adhesion about the diameter of a filiform bougie, stretching between several coils of small intestine, was found to constrict the gut. Above the constriction, the gut was distended with gas and very much congested, and below it the gut was collapsed and ribbonlike. The constricting band was cut in half, thereby releasing the gut. Tier sutures were used to close the abdominal wound.

After the operation the temperature rose to 101.2° F. on October 27th, but fell to normal the next day and remained so thereafter. During convalescence she was fed milk, two ounces every hour. The sutures were removed on the sixth day and the belly was strapped for support. After the operation the bowels again became normal in character and frequency, and the baby was discharged from the hospital, November 7, 1910, perfectly well, and has remained so ever since.

2424 SEVENTH AVENUE.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXVI.—How do you treat bronchial asthma? (Closed September 16th.)

CXXVII.—How do you treat pruritus vulvæ? (Answers due not later than October 15th.)

CXXVIII.—How do you treat infantile convulsions? (Answers due not later than November 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to Question CXXV has been awarded to Dr. Estill D. Holland, of Hot Springs, Arkansas, whose article appears below.

PRIZE QUESTION CXXV.

THE TREATMENT OF GONORRHEAL RHEUMATISM.

BY ESTILL D. HOLLAND, M. D.

Hot Springs, Arkansas.

There are few patients who have been more victimized by fads and fancies than gonorrheal rheumatics. We have the "stricture fiend," who can cure any case by dilating the urethra; the "plaster cast paranoiac," who puts every affected joint in a cast until it is well or stiff or both, and then cheerfully consigns the patient to masseurs for six months, or perhaps years, to recover from the cast. We also have the lineal descendant of the ancient hangman, who forcibly bends the joint while the inflammation is acute, and numerous others whom we all know. Every doctor sees some of these victims, but I doubt if any one sees more of them than we in Hot Springs, as they come here as a last resort, and most of those we treat have been treated improperly in the past or they would not be here.

I think the most comprehensive way to give a method of treatment is to present an actual case with the routine and results.

Mr. L., aged thirty-two years, contracted gonorrhea eighteen months before, and had had some discharge from his urethra ever since. About the first of May, 1912, patient began to have some pain in his right knee and noticed that it was slightly swollen in the mornings, and hot

to the touch. Knee continued to get worse until about May 15th, when his left knee started paining in the same way. Patient arrived here, June 2d, hardly able to walk and almost unable to sleep from the pain in both knees. Right knee greatly enlarged, red, and hot, left knee painful, but only slightly enlarged, and normal in color. I found, upon examination, that patient had a pronounced urethral discharge, containing numerous gonococci, and that his prostate was enlarged and tender; urethra was also very tender.

Patient had been having a 32 F. sound passed in him every day for a month, and he could hardly stand the pain. I succeeded in introducing an 18 F. without causing much pain, and instilled an iodine mixture into his deep urethra. I massaged patient's prostate gland and gave him directions for a light bath, followed by a hot, wet pack on both knees, for twenty minutes each morning. I also instructed him to drink a half gallon of water each day, and to eat light, easily digested food without much meat. He was to take his bath at 10:30 o'clock every morning, after which he was to go to his room and lie down until noon. When he got up at noon, he could do anything he wished so long as it did not give him pain. At 5 p. m. he was to be back in his room in bed, and I then adjusted a Bier's bandage, four inches above the highest point of tenderness on each knee, and allowed it to remain for thirty minutes.

I had the patient come to the office every morning before his bath and treated him locally, sounding and injecting his urethra every day, and massaging his prostate at first every other day.

June 3rd, I gave 400,000,000 mixed gonococci vaccine, and as he did not have any noticeable reaction, I gave him 500,000,000 more of the same on June 5th, which was followed by a slight increase of tenderness in his right knee. June 9th, I gave the patient 900,000,000 mixed gonococci vaccine, and continued this same dose every four days for six doses.

This patient was perfectly comfortable when still, and slept well from the first night on. At the end of a week the right knee had gone down about half, and the patient was walking around the hotel without any pain. At the end of the second week he was walking eight or ten blocks a day without pain, his left knee apparently normal, right knee slightly enlarged, but not tender, and no heat. At the end of three weeks I had gradually worked up to a 27 F. sound without having at any time hurt the patient. There were no more gonococci in his urethral discharge, but he still had a "morning drop." The patient was walking over the mountains and doing about as he pleased; both knees normal in size and no signs of any trouble. He left here July 3rd, well.

There is no absolute routine for the treatment of gonorrheal rheumatism, but the foregoing case will demonstrate our method, subject to variations for individual reactions. Sometimes one has to give a few doses of some form of salicylates for pain, but we never give anything else.

We adhere to the following rules: 1. Never put the affected joint in a cast, but encourage patient to exercise it as much as he can without giving himself pain. 2. Never forcibly bend an inflamed joint, and never have it massaged while it is inflamed. 3. Do not allow patient to keep the affected joint in one position long at a time. 4. Never

bruise or tear the urethra in dilating it, but increase the sounds gradually to the desired size. 5. Give all the mixed gonococci vaccine that the patient can take without having a negative phase marked enough to notice. Give large doses. We used to start with 50,000,000, but did not have the success that we now have with larger doses. 6. Use hyperemia twice a day, preferably both hot, wet packs and the Bier's bandage. 7. Keep bowels a little looser than normal, and have the patient drink all the water he can. Do not allow any tobacco or alcohol.

If there is a gonorrheal discharge, or a stricture present, treat it as you would any other case of gonorrhea or stricture.

Dr. Charles Greene Cumston, of Boston, writes:

The chronic types of gonorrheal rheumatism are usually the result of systemic absorption of the toxins of the specific organism located in some deep seated focus as the prostate, seminal vesicles, etc. Therefore, when treating such a case, these organs must be carefully explored in order to discover the source of the chronic infection.

It is important to resort to prophylactic treatment of gonorrheal rheumatism when commencing treatment of a fresh case of clap, more particularly so if the patient has had gonorrheal rheumatism in former infections. To accomplish this it is well to order from five to ten grains of salol, four times daily, after meals and at bedtime. This has succeeded well in my hands upon several occasions. For example: A physician, aged thirty-five years, had had two gonorrheal infections, the last five years ago, and on both occasions severe tenosynovitis developed of the extensor tendons of both feet. He consulted me for his third offense, within twelve hours after the first symptoms. I placed him on salol, ten grains four times daily, in view of his former tenosynovitis; he rapidly recovered under local treatment for the urethritis and not the slightest symptom of gonorrheal rheumatism developed.

If one, by judicious local treatment when the case is seen within the first forty-eight hours, can limit the spread of the infection to the anterior urethra systemic infection giving rise to gonorrheal rheumatism, is most unlikely to occur.

The treatment of gonorrheal tenosynovitis, which is the mildest form of gonorrheal rheumatism, consists in rest of the parts affected and, if the pain is intense, local bloodletting often works like a charm. Although this may seem like seventeenth century practice, it nevertheless, is a measure not to be overlooked. Locally, the limb over the involved tendons is to be covered with the following paste, this to be covered by a flannel roller bandage:

R Methyl salicylate,	10.0 grammes;
Zinc oxide,	3.0 grammes;
Wool fat,	50.0 grammes.
M. ft. unguentum.	

I have found that salol, given subcutaneously, appeared to hasten the cure. I formulate it as follows:

R Salol,	3.0 grammes;
Chloroform,	1.0 grammes;
Almond oil,	8.0 grammes.
M. Sig.: Ten c. c. four times daily in subcutaneous infection.	

When the acute symptoms have subsided, massage will complete the cure, preventing the formation of adhesions.

The treatment of acute gonorrheal arthritis is often a tedious affair. If there is fluid in the joint, it should be removed by incision and the joint freely flushed out. The incision is closed without drainage and the limb properly splinted. Massage and passive motion should be begun very early, with the outcome that an almost perfect functional result is obtained.

When there is no fluid in the joint, it is more probable that the process is extraarticular and seated in the fibrous structures surrounding the joint. In this case the treatment described for tenosynovitis is to be resorted to. The vaccine treatment will be found of utmost use in these cases, especially when they run a protracted course.

In treating the chronic form of gonorrheal arthritis, the first indication is to find the focus of infection giving rise to it, otherwise no treatment will be of avail. If the prostate is the seat, the usual treatment of chronic prostatitis is indicated, and when the prostatic lesion is cured, the rheumatism will disappear.

When the seminal vesicles are involved, massage, or vesiculotomy if necessary, must be carried out. The vaccine treatment will find its greatest use in these cases. On general principles, personal hygiene must be attended to; anemia, if it exists, is to be treated, and a nutritious and nonstimulating diet ordered.

In treating the subject of gonorrheal rheumatism, I have avoided the question of treatment of gonorrheal urethritis, considering it foreign to the subject of the paper, although it is of utmost importance in the cure of the former.

(To be concluded.)

Correspondence.

LETTER FROM CANADA.

TORONTO, September 12, 1912.

Montreal's Vital Statistics Report for 1911.—Ontario's Statistics—Infant Mortality in Ontario.—Deaconess Hospital for Toronto.—New Hospital for Insane at Whitby.—King Edward Sanatorium, British Columbia.—Canadian Medical Association Annual Meeting.—Osteopathy in Ontario—Personal

The report now being prepared by the medical officer of health of Montreal, for the year 1911, will show that the birth rate was 37.49 per 1,000 of the population, and the death rate 21.19 per 1,000. These figures represent a gain in births of one per cent. over 1910 and a decrease in the deaths of one and one fifth per cent. The total deaths for last year were 9,974, and the births 17,637, as against 10,211 and 16,616 respectively, in 1910.

Returns to the board of health of Ontario for the month of August show a great increase in the number of births, and deaths from communicable diseases. This is due to the more complete returns

required under the provisions of the new Ontario Public Health Act. The total number of communicable disease cases reported were 2,005 and 304 deaths as against 613 cases and 118 deaths in August, 1911. There were fifteen cases of infantile paralysis, with eight deaths; spinal meningitis, thirteen cases, thirteen deaths; smallpox, thirty-one, no death; scarlet fever, 140, ten deaths; diphtheria, 193, twenty-seven deaths; measles, sixty-four, three deaths; whooping cough, 348, thirty deaths; typhoid fever, 1,022, ninety-four deaths; tuberculosis, 179, 110 deaths. The large increase of typhoid fever is due to the epidemic in Ottawa, where over 900 cases recently occurred. The deaths from whooping cough are unusually large. In Toronto fifty-four children have died from this cause in the past five months, while in the same time there were only thirty-two deaths from scarlet fever. The former emphasizes the importance of stricter precautions with regard to isolation in this disease.

The third report on infant mortality prepared for the Ontario Government by Dr. Helen MacMurchy, is said to be the most comprehensive and best report upon the subject in existence. In the Province of Ontario in 1909 the deaths under one year were 6,932, and in 1908, 6,895, thus giving in each year a death rate in 1,000 of 131.7 and 125 respectively. Toronto with 7,848 births in 1909, had 1,727 deaths under one year of age. Several cities of the Province go considerably over the 200 mark in ratio of such deaths per 1,000 of births. Chatham had 229.2; Fort William, 227.6; Ottawa, 283.9; Port Arthur, 277.5; Toronto, 220.0. The amount of good that can be accomplished by an active officer of health is seen in this Province in the case of Fort William. In June, July, and August, 1910, there were sixty-three deaths from cholera infantum; in 1911, twenty-two; in 1912, six. Toward preventing infant mortality, Doctor MacMurchy makes the following suggestions: Education by government, municipality, school, and medical profession; prompt and complete notification of all births; a fee for notification of twenty-five cents, when done within twenty-four hours; every certificate of death in a child to state method employed in feeding; medical officers to make weekly returns; special grant by the Provincial government of one third of the salary to any physician or nurse engaged exclusively in this work; fourteen cents a day by special grant from Provincial government to every mother nursing her infant in a Provincial institution; the establishment of a Bureau of Infant Care and Management for the Province; doctors to be supplied with stamped and addressed postal cards for notification.

With the removal of the Toronto Hospital for the Insane to a point twenty miles east of the city, the need of special accommodation for those becoming mentally deranged in Toronto became urgently demanded. The new hospital at Whitby is to cost \$600,000 and as it is rapidly nearing completion the patients will soon be transferred from Toronto to the new institution. There would be no place in Toronto to fall back upon but the jail. Public opinion, however, stirred up by the medical press, demanded adequate accommodation for these unfortunates, so the Toronto city council at once decided

to provide the site at a cost of \$100,000 for a new detention hospital.

The site of the hospital for the insane at Whitby will comprise 600 acres, overlooking Lake Ontario. There will be separate cottages for male and female patients. Mild cases in an early stage will not be admitted. Patients suffering from consumption will have separate accommodation. Patients physically fit will work on the farm or on the buildings.

The fifth annual report of this institution shows that during 1911 a larger number of patients have been treated than in any previous year. December 31st there were eighty patients in the sanatorium. Of the 170 patients treated, 23.1 per cent were incipient cases; 21.7 moderately advanced; 55.2 far advanced. Of the two former classes 34.4 per cent. were apparent cures; 31.2 per cent. had the disease arrested; 34.4 per cent. unimproved. The treatment followed is rest, fresh air and graduated labor. In selected cases tuberculin has been administered with beneficial results. The average length of stay in the institution was 109 days.

The forty-fifth annual meeting of the Canadian Medical Association was held in Edmonton, Alberta, on the 10th, 11th, and 12th of August, under the presidency of Dr. H. G. McKid, of Calgary. There was a large attendance, particularly from the western Provinces. Dr. A. D. Blackader, of Montreal, delivered the Address in Medicine and Dr. G. A. Bingham, of Toronto, the Address in Surgery. Dr. E. W. Archibald, of Montreal, resigned from the position of secretary, as did also Dr. H. B. Small, Ottawa, from the position of treasurer, held for over twenty years. The association decided to meet in London, Ontario, in 1913, Dr. Hugh A. MacCallum being elected president.

There are said to be now practising in the Province of Ontario over 1,000 osteopaths; and at the last session of the Ontario Legislature, a new Ontario Medical Act was before that body, which sought to provide for the regulation of osteopathy and to bring it under control and supervision of the Ontario Medical Council. The bill, however, was withdrawn, it is said, on the suggestion of the president of the University of Toronto. While the bill provided for the proper examination, registration, and licensing of the osteopaths, it was objectionable in this respect, that it was not made clear whether all these at present practising in the Province were to be licensed under the new act. The medical profession feel strongly in the matter that they should pass under the same regulations as themselves and then practise as they wish. The reintroduction of the bill at the next session will be watched with the greatest interest.

Dr. J. N. E. Brown, secretary of the American Hospital Association and late superintendent of the Toronto General Hospital, has accepted the position of medical superintendent of the Detroit General Hospital.

Dr. R. T. Rutherford, of Strathclair, Man., has been appointed inspector of immigrants for the Dominion Government at New York.

Doctor Hill, of the University of Minnesota, has been appointed superintendent of the Hygienic Institute at London, Ontario.

Therapeutical Notes.

Treatment of Opium Poisoning.—Frederick Taylor, in the *Lancet* for April 27, 1912, reports two cases of acute opium poisoning in which he believes recovery was due in great measure, if not entirely, to prolonged application of the faradic current. Small, moist electrodes were used, the object being, not merely to stimulate the sensory terminals in the skin, but to cause muscular contractions in the trunk and limbs. The stimulations were continued in the first case for forty minutes, in the second for fifty minutes, and seemed to contribute directly to the disappearance of somnolence, and, in the second case, to restoration of the respiratory function, though artificial respiration was employed simultaneously. Taylor advises that whenever opium causes somnolence from which the patient cannot be aroused by shaking, the faradic current should at once be brought into use, and even though the breathing becomes slow and gasping, should be persevered in until the patient is finally roused and the respiration restored nearly or quite to the normal. Artificial respiration should also be performed, but the author is convinced that the faradic current is a valuable addition to it.

Treatment of Asthma in Children.—H. M. McClanahan, in the *American Journal of the Medical Sciences* for June, 1912, states that in the treatment of the asthmatic paroxysm care should be taken to have the room warm and to exclude draughts. If the child's bowels are distended with gas, a warm enema should be given. If the paroxysm comes on soon after a hearty meal, an emetic will give relief. Epinephrine solution (one to 1,000) hypodermically in doses of three to five minims proved quickly beneficial in two of the author's little patients, but in others was without effect. Other cases were relieved, respectively, by 1/30 grain of morphine sulphate, three grain doses of chloral hydrate, and inhalations of nascent oxygen. Where cough, wheezing, and dyspnea on exertion persist after the paroxysm proper has been subdued, the use of heroin in a syrup of hypophosphites will often benefit. Antipyrine given at bedtime will sometimes allay cough that tends to disturb the child's sleep. For dry, teasing cough, one teaspoonful each of creosote and oil of eucalyptus may be added to a pint of water, and the mixture inhaled, with the use of an improvised croup tent, for one half hour at a time two or three times daily.

As for the treatment of asthma during the intervals, McClanahan points out the necessity for proper protection of the child's chest, neck, and lower extremities against cold, and advises that a diet poor in meats, but rich in vegetable proteins be generally ordered. In asthma induced by bowel trouble, green vegetables and fruit juices should be included in the dietary. Since acute bronchitis frequently precedes an asthmatic paroxysm, appearance of the former should be the signal for prompt confinement to bed, restriction to liquid foods, and administration of an active cathartic and hot drinks.

In cases which fail to respond, a change of climate, or sometimes merely a change in location of a few miles, is necessary. Anemia or a history of

rheumatism should suggest appropriate treatment. Pulmonary gymnastics in the form of daily exercises in deep breathing, with emphasis upon complete expiration, or the wearing of an elastic binder around the chest, light enough to exert constant light pressure, are strongly recommended by the author in asthma of children.

Where catarrhal bronchitis persists after the paroxysms have been subdued, sodium iodide, in doses of two to four grains, three times daily, after meals, is of decided benefit. It should be given for several weeks.

Treatment of Incomplete Abortion Associated with Fever.—Herman J. Boldt, in *American Medicine* for June, 1912, remarks that placental remnants undergoing changes through the agency of saprophytic or virulent bacteria are in intimate relation with the maternal circulation, and that some organisms may thus find an entrance into the blood. While the mere fact that microorganisms have entered the circulation does not necessarily give an unfavorable prognosis, and even if it is taken for granted that only a saprophytic infection is present in a given case, yet it cannot be denied that, in some instances at least, a more serious condition may result, staphylococci, *Bacillus aerogenes capsulatus*, and other forms being mingled with virulent types of microorganisms. Hence, in spite of recent advice from certain quarters to the contrary, one should, as soon as possible, convert the incomplete abortion associated with fever to a complete abortion, by divesting the uterus of its placental remnants. This should be done without inflicting traumatism. If the uterine cavity cannot be entered because of the smallness of the canal, the cervix should be most carefully dilated and the remnants removed manually. The curette should never be used.

Treatment of Infantile Diarrhea.—H. A. Ellis, in the *Australasian Medical Gazette* for January 13, 1912, commends highly the use of the following combination of remedies in infantile diarrhea:

℞ Magnesii sulphatis,	5i-ii
Mucilaginis acacie,	5ss
Phenylis salicylatis,	gr. v-x
Glycerini,	3iii
Aquæ chloroformi, q. s. ad.....	3iii.

M. Sig.: One teaspoonful every one, two, or three hours.

In a mild case a dose is ordered every three hours; if improvement is insufficient, then every two hours; and in very urgent cases, every hour. Administration both night and day must be insisted on, even in very young infants. The character of the stools is to serve as guide for the frequency of administration; if the blood does not diminish, the frequency should be increased. There should be no diminution in the number of doses until the slimy nature of the stools has also been overcome. The diarrhea will then be found in most instances to disappear while the preparation is still being taken in reduced doses.

In a certain small proportion of cases the phenyl salicylate disagrees, causing nausea and vomiting, and it is then omitted from the preparation. Where the urine is of very high specific gravity, a little sweet spirit of nitre is given separately.

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ADVANCED REQUIREMENTS IN NEW
YORK STATE FOR THE STUDY AND
PRACTICE OF MEDICINE.

The New York Board of Regents have recently decided that on and after January 1, 1913, all students qualifying for admission to any medical school in New York State will be required to have completed a year's study in physics, biology, and inorganic chemistry. Those who contemplate beginning the study of medicine in New York State next year should, therefore, if need be, at once enter the scientific department of some university in which these branches are taught. As the decision of the regents is worded, even the degrees of A. B. or B. S. will not admit to a New York medical school if the work they represent does not include the three branches mentioned. The degree of bachelor of science usually includes biology, while that of bachelor of arts does not, as a rule, and even sometimes omits inorganic chemistry and physics. The applicants for license to practise medicine in New York State will also have to meet the same requirements, but the year's work in the three branches mentioned must also have been completed prior to starting medical studies. This will exclude the vast majority of American graduates, while practically all graduates of foreign schools— notwithstanding the low general average they have

shown in State board examinations in this country—will be able, as before, to qualify for examination in New York State. While this discrimination against American physicians seems inevitable, we may venture the hope that the regents will bear in mind this phase of the question before any future decision is reached affecting the welfare of American physicians.

The first of October will inaugurate another important step. Heretofore, New York has left to medical schools the management of their instructors in respect to the time devoted to teaching. After the above mentioned date, a school of medicine "must have at least six full time, salaried instructors, giving their entire time to medical work." When we consider that two years ago but fourteen medical schools could boast of such a number of full time instructors, a heavy decrease in the number of institutions recognized by New York State must be expected, notwithstanding the fact that many schools have complied with the new requirement.

THE ORIGIN AND NATURE OF LIFE.

Speculation as to the origin and nature of life has been indulged in from the very earliest time, and even the most fantastic notions have gained a certain amount of credence. However old this problem, it still possesses universal interest, probably greater than that of any other enigma of mankind, and any new light which fresh facts and their logical consideration may throw upon it is welcomed. In view of the enormous strides made in the realm of science, particularly in that branch of science which bears upon the welfare of man—scientific medicine—what could be more fitting than that one of the greatest living physiologists should give us the newly learned facts and suggest their logical bearing on the solution of the riddle of our existence? This Professor Schäfer undertook in his presidential address before the British Association for the Advancement of Science.¹

Professor Schäfer has preserved the true scientific spirit in his deductions from consideration of the verified facts and, while he does not indulge in prophecy in the strict sense of the word, one cannot help seeing that he is almost confident that science will ultimately give us the clue to the solution of the problem.

Throughout his entire consideration of the facts which he turns to account in the construction of his hypothesis, he holds that the basis of all phenomena of what is known as life is the chemical and physical behavior of the nitrogenous colloids. He cites the

¹Lancet, September 7, 1912.

observations of others who have repeatedly seen movements in substances which no one could by any stretch of the imagination regard as living. The movements are indistinguishable from those of ameboid organisms. The phenomena of osmosis present a condition precisely similar to that constantly found in the processes of assimilation and dissimilation in living matter. Even the process of reproduction can be seen in matter which is certainly inanimate; crystals grow and multiply, and they have an average size which they do not exceed very greatly. Ledtke has shown the growth and division of artificial inorganic colloids. "Even so complex a process as the division of a cell nucleus by caryocinesis as a preliminary to the multiplication of the cell by division—a phenomenon which would *prima facie* have seemed, and has been commonly regarded as, a distinctive manifestation of the life of the cell—can be imitated with solutions of a simple inorganic salt, such as sodium chloride, containing a suspension of carbon particles, which arrange and rearrange themselves under the influence of the movements of the electrolytes in a manner indistinguishable from that adopted by the particles of chromatin in a dividing nucleus." In the case of sexual reproduction, also, "it is possible to start the process of the division of the ovum and the resulting formation of cells, and ultimately of all the tissues and organs—in short, to bring about the development of the whole body—if a simple chemical reagent is substituted for the male element in the process of fertilization. Indeed, even a mechanical or electrical stimulus may suffice to start development."

Turning from the imitations of life processes which chemical and physical agents can bring about in purely inanimate matter, Schäfer speaks of the colloid nature of living matter: "Living substance or protoplasm, in fact, takes the form of a colloidal solution. In this solution the colloids are associated with crystalloids (electrolytes), which are either free in the solution or attached to the molecules of the colloids. Surrounding and enclosing the living substance thus constituted, of both colloid and crystalloid material, is a film, probably also formed of colloid. . . . This film serves the purpose of an osmotic membrane, permitting of exchanges by diffusion between the colloidal solution constituting the protoplasm and the circumambient medium in which it lives. Other similar films or membranes occur in the interior of the protoplasm. These films have in many cases specific characters, both physical and chemical, thus favoring the diffusion of special kinds of material into and out of the protoplasm and from one part of the protoplasm to another."

How the transition from nonliving matter into

living matter took place, and when and where, it is impossible to say, but Schäfer suggests, and supports his suggestion by able logic, that it was quite the natural result of evolution, with the gradual elaboration of suitable compounds, and a progressive change in chemical and physical possibilities *pari passu* with the increase in the complexity of the compounds.

Having established his case for the possible, or as he would say, probable, chemical evolution of living from nonliving matter, Professor Schäfer calls attention to the comparative simplicity of the chemical nature of protoplasm, and discourses upon the ways in which change may be brought about by other chemical and physical agents. The ferments and hormones are but chemical agents, and the close interrelation of the actions of the several cell groups and organs of the complex animal body may well be solely the result of the necessary chemical and physical responses of the several cell groups themselves. He carries us by slow steps from the mass of animated nitrogenous colloid—protoplasm—to that most complex aggregation of such masses of protoplasm in the form of cells—man—without finding it necessary to leave the realm of physics and chemistry.

Whether we agree with the views of Professor Schäfer or not, or whether we accept them without complete agreement, can in no way detract from the masterful beauty of his logical construction of an hypothesis which at least rests on a foundation of fact; his is another stride toward the distant goal of man's curiosity concerning his origin.

THE DANGEROUS BODY LOUSE.

Many members of the medical profession will be surprised at the report of Dr. John F. Anderson and Dr. Joseph Goldberger at the Congress of Hygiene and Demography at Washington, that over 300 cases of typhus fever existed in New York city, as well as many other cases in Chicago, Philadelphia, Baltimore, Washington, etc., it having been the consensus that the disease had practically disappeared years ago. Undoubtedly the prevalence of the body louse, through which the disease is now known to be transmitted, is accountable for the survival of typhus among the very poor and the criminal classes. It is well known that police cells in many parts of the country, as well as some of the older jails, are infested with the insect, and many beggars and tramps still carry it about from one section to another.

The body louse, or *Pediculus vestimenti*, lives in the seams of the garments worn next the skin, particularly those of wool. The fecundity of the

female is enormous; she lays from seventy to eighty eggs which hatch from one week to five weeks later and remain some eleven days in the stages of larva to imago. The insect passes four days in a nonreproductive stage and then lives, the male three weeks, the female four. The period from egg to egg is, therefore, about twenty-four days. Two females can, in two months, produce about 18,000 lice.

It is known that typhus vanishes before soap and water. The pediculus is but feebly tenacious of life and the symptoms of its presence are well known. That typhus should exist anywhere in a civilized country is a crying reproach; dreadful disease as it is when once it has developed, its prophylaxis demands no more than attention to the simplest demands of decency.

THE CONGRESS OF APPLIED CHEMISTRY, DIET, AND THERAPEUTICS.

Among the corrections which it was found necessary to make in the present revision of the Pharmacopœia at the time when the National food and drugs act went into force, was a reduction in the alkaloidal content required of belladonna. This change was rendered necessary by the fact that there had been a gradual falling off in the amount of alkaloids found in the wild belladonna plants which furnished the drug to commerce. Such variations as this led to the appointment of a commission by the Seventh International Congress of Applied Chemistry to study the question of the variation in the strength of drugs. The report of this commission formed for the physician one of the most interesting features of the Eighth International Congress of Applied Chemistry, which was held in New York this month. From this report it appears probable that we may eventually, through improved cultural methods, be able to produce drugs of approximately uniform alkaloidal content.

At this congress several important addresses were delivered, of great general interest, but without direct bearing upon medicine. The most important of these were the addresses by Professor Bertrand, of the Sorbonne; Professor Bernthsen, of Ludwigshafen, and Doctor Eyde, of Norway, all of which dealt with topics indirectly affecting our food supplies. Bertrand showed the great importance in agriculture of very minute quantities of certain elements, such as manganese, hitherto not taken into account, while Eyde described the synthesis of ammonia through oxidation, and Bernthsen its synthesis by direct combination of nitrogen and hydrogen. This latter achievement is an epoch-making one, pointing the way to further advances

in this direction which may eventually lead to the direct synthesis of albuminous food stuffs. Since more than \$190,000,000 worth of nitrates are used annually as fertilizers, and since the Chilean nitrate beds are becoming exhausted, the economic importance of the results reported by Bernthsen and by Eyde can hardly be overrated.

Bertrand's observation that the secretion of laccase was dependent upon the presence of minute quantities of manganese, and that this secretion was essential to the growth of the plant, suggests the probability that similar conditions obtain in the animal world. We know something of the important rôle played by the internal secretions, and it seems not unreasonable to suppose that with these, as with laccase, the presence of infinitesimal quantities of some particular element may be essential. Should the parallel hold true throughout, the observations of Bertrand would furnish a clue to the explanation of the physiological and therapeutical effect of very minute quantities of certain medicinal products.

PERCUSSION IN GASTROENTERIC DISEASE.

Apropos of the editorial discussion in our issue for September 21st of Orlovsky's method of percussion of the liver, we note in *Archives of Diagnosis* for July, 1912, that Weinstein makes, among others, the statement that the stomach may be readily outlined by immediate percussion. This is performed by letting the fingers drop freely and lightly from the wrist, striking the abdominal wall in malletlike fashion. The stomach gives under this form of percussion a tympanitic sound of definite quality. If one thus percusses the abdominal wall, starting from the pubis, with the patient recumbent, the bowel tympany is inaudible; but as soon as the stomach is reached the tympanitic sound is heard at once. In the same way one may determine the upper gastric border by starting above at the chest and percussing downward.

EPIDEMICS OF POLIOMYELITIS.

In our last few issues we have reported in news items on the epidemic of poliomyelitis which appeared in Buffalo and vicinity in June and has not yet subsided. According to the *Public Health Reports* there have been, since the beginning of the attack, 226 cases with thirty deaths. Among other places which suffered from the attack was the small town of Batavia, where fourteen cases have been reported within the last few weeks, and the counties of Chautauqua, Erie, Genesee, and Niagara. At the same time that the epidemic started in Buffalo one appeared in Los Angeles, where up to the present 249 cases have been reported; the number of deaths is not given. The counties in the vicinity of Los Angeles that also suffered were Riverside, Ventura, Merced, Sacramento, San Joaquin,

and San Francisco. In Buffalo, as well as in Los Angeles, the subsidence of the outbreak followed closely upon the establishment of a rigid quarantine of premises where there were cases, the closing of all schools, and the prohibition of gatherings of large numbers of children.

A PROMISING TREATMENT OF CANCER: THE PREPARATIONS USED.

In an editorial article in our last issue (page 596) we spoke of Dr. Adolf Zeller's report of his so called cancer cures. Professor Czerny as well as Doctor Zeller were somewhat vague as to the chemical combinations used, at least according to the article in the *Münchener medizinische Wochenschrift*. We are now able to give the two formulæ, which appear in the *Pharmazeutische Zeitung* for September 11, 1912.

For internal use: Potassium silicate and sodium silicate, of each twenty grammes; milk sugar, sixty grammes. One quarter to one half gramme of this powder is given three times daily.

For external use: A powder is made of arsenous acid, two grammes, red mercury oxide, six grammes, and powdered animal charcoal, two grammes.

To both preparations, according to the German custom, Doctor Zeller has given specific names, which in this case are of rather poor etymological construction; we do not know whether they have been copyrighted or not.

Medical Law.

VIII. CIVIL MALPRACTICE.

The Supreme Court of New Jersey has recently rendered a decision upon the subject of consent to an operation, which substantially modifies the strict common law rule, and which, because of the underlying necessity for the modification and the sound logic upon which it is based, may be expected to stand in the future as a precedent for many similar decisions.

The case is that of *Bennan vs. Parsonnet*, 83 Atl. Rep. 948. The patient had applied to defendant to operate upon a rupture in his left groin. The patient had been placed under the influence of an anesthetic by two assisting surgeons who, when defendant came into the operation room, directed his attention to a rupture they had just discovered in the patient's right groin, which upon examination was determined by the three surgeons to be a serious menace to the patient and likely to cause his death should strangulation occur, dangers not to be apprehended from the rupture in the left groin. The defendant, therefore, operated upon the more serious rupture first, intending to operate on the other rupture also, but was prevented from so doing by the patient's condition under the anesthetic. The patient, upon recovering consciousness, was informed that the operation would be completed on the following day. He apparently acquiesced, but later declined to go on with the operation, and brought suit against defendant for assault and battery.

Upon the trial of the case the jury, after a charge based upon the common law rule of consent, found that defendant had performed an operation upon plaintiff without his consent, and rendered a verdict of \$1,000 against him.

Upon appeal, the Supreme Court promptly set the verdict aside as against the clear weight of the evidence. Mr. Justice Garrison wrote the opinion wherein he said:

It is true that the judge in his charge laid down the common law rule with substantial correctness, but it is also true that the introduction of anesthesia into the practice of surgery has modified the application of the common law rule in certain fundamental respects of which the law must take notice.

He then quoted the common law rule as laid down in *Kinkead on Torts* as follows:

The patient must be the final arbiter as to whether he shall take his chances with the operation or taking chances of living without it. Such is the natural right of the individual which the law recognizes as a legal one. Consent, therefore, of an individual, must be either expressly or impliedly given before a surgeon may have the right to operate.

He then quoted the words of Judge Brown, previously expressed, as justifying the rule, where Judge Brown said:

There is logic in the principle thus stated, for in all other trades, professions, or occupations, contracts are entered into by mutual agreement of the interested parties, and are required to be performed in accordance with their letter and spirit. No reason occurs to us why the same rule should not apply between physician and patient.

Justice Garrison then proceeds to show why this rule is not applicable to present surgical methods, and to enunciate a doctrine based upon the needs of modern surgery. The decision is believed to be of such importance that the following extensive quotation is made from the Justice's opinion. Referring first to the words of Judge Brown, above quoted, he says:

Without stopping to point out the fallaciousness of the premise that a surgical operation can be contracted or performed according to plans and specifications, it is enough to say that the entire foundation of the supposed analogy is swept away by the surgical employment of anesthesia, which renders the patient unable to consent at the very time that the rule of common law required that his consent be obtained; for in those days the patient (such was the horror of it) was a conscious participant in such surgical operations as were then performed, and as his consent could be obtained, the rule of the common law was that it must be obtained.

The surgical employment of anesthesia has, as a matter of common knowledge, not only eliminated the possibility of obtaining the patient's consent during the operation, but has also had other radical effects of which notice must be taken. Thus it has rendered possible and of everyday occurrence surgical operations of a character and magnitude not dreamed of at the time the common law was in the making, and, as a matter of practical moment, has also advanced the period that marks the commencement of a surgical operation from the time when the patient's body is actually invaded by the knife to the time when the anesthetic is administered, or at least when the patient has succumbed to its influence. The employment of anesthesia has also postponed to this period of relaxation and unconsciousness the making of that complete and final diagnosis of the patient's condition that at common law was made at a time when he could be both informed and consulted. By these considerations the scope of modern surgical operations has been greatly enlarged, and the legal rule applicable thereto extended beyond the emergencies of actual surgery to other matters more or less vitally affecting the patient's welfare. To meet these changed conditions, the rule of law must, in the interest alike of

the patient and the surgeon, be adapted to the changes that have been so wrought, chief among which is the unconscious state of the patient at a time when by the common law rule his consent must be obtained. To meet this fundamental change in the condition of the patient, it is imperative that the law shall in his interest raise up some one to act for him—in a word, to represent him in those matters affecting his welfare concerning which he cannot act for himself because of a condition that has become an essential part of the operation.

If such representative has been chosen by the patient himself, the rule we are considering has no application, but, if no one has been so appointed, the law by its constructive power will raise up such a representative without which the welfare and even the life of the patient might be needlessly sacrificed. To meet the requirements of the case, such representative should not only keenly appreciate the nature of the duty that is thus cast upon him, but also be possessed of the knowledge and skill to perform such duty with wisdom and promptness. He should also be one in whom the patient reposes confidence and on whose judgment he would presumably rely. The surgeon whom the patient himself has selected alone fills all of these requirements, and hence upon him should be cast the responsibilities of this office by the legal implication that the patient intended him to act for him when he had made no other selection.

This implication accords with those analogies of the common law by which prompt and timely aid to accidentally injured or unconscious persons is secured from those not expressly authorized to render it. And I have no doubt that, should such an accident occasion a depression of the skull that rendered the injured person unconscious, the consent of such person to the necessary surgical operation would be implied at common law, although I find no such reported case. A like analogy to some extent is found in the *American Decisions* touching actions for compensation for services rendered to unconscious persons, a topic upon which the English cases are silent owing to that hallucinatory honorarium upon which the learned professions in Great Britain are supposed to rely for their subsistence. At bottom these analogies all rest upon the maxim that one is presumed to accept that which is beneficial to him, a doctrine that, if applied to commerce and the transfer of property, should surely be applied where life and health are at stake.

The conclusion, therefore, to which we are led is that when a person has selected a surgeon to operate upon him, and has appointed no other person to represent him during the period of unconsciousness that constitutes a part of such operation, the law will by implication constitute such surgeon the representative *pro hac vice* of his patient, and will, within the scope to which such implication applies cast upon him the responsibility of so acting in the interest of his patient that the latter should receive the full benefit of that professional judgment and skill to which he is legally entitled. Such implication affords no license to the surgeon to operate upon a patient against his will or by subterfuge, or to perform upon him any operation of a sort different from that to which he had consented or that involves risks and results of a kind not contemplated. As to such matters, the rule in question submits nothing to the judgment of the surgeon, who as the implied representative of his patient can under such implication truly represent him only in so far as he gives to him the benefit of his professional wisdom within the general lines of the curative treatment agreed upon between them, unless, of course, a wider discretion has been accorded to him. Within such general lines, however, much is necessarily left to the good judgment of the operating surgeon; just how much will depend upon the circumstances of the individual case.

If the surgeon transcends his implied authority as thus defined, the question of his skill and wisdom is irrelevant, since no amount of professional skill can justify the substitution of the will of the surgeon for that of his patient; but where this is not the case, and where the act done or the decision made in the interest of the patient is fairly within the implied duty and authority of the surgeon, the question for the jury is, whether upon the evidence it appears that such professional skill and wisdom as the patient was entitled to receive had been exercised by the surgeon in his behalf, not whether in the opinion of the jury

the surgeon had acted wisely or whether the patient had been benefited.

Such being the question for the jury, the admissibility of the technical or expert evidence on which it rests, presents, as in other cases of relevancy, a preliminary question for the court which in the present case the trial judge rightly resolved in favor of the admission of such evidence. A ruling that the operation that was performed by the defendant was of a different sort from that to which the patient had consented would be based upon too narrow a view. The condition for the cure of which the plaintiff applied to the defendant was rupture. He is therefore presumed to have contemplated all of the risks incident to an operation for such a condition. Now rupture is simply a protrusion of the intestine. Whether it occurs on the right side or on the left of the intestine is the same, the muscular wall is the same, the operation is the same, and its dangers and the risks are the same.

In the present case it is not conceivable that if the plaintiff had known that at the same risk and with the same absence of expense he could by the contemplated operation be relieved of a condition that seriously threatened his life and health, he would not have assented to it, or that he would not have relied upon the judgment and have acted upon advice of the surgeon who was so kindly disposed toward him. Under these circumstances, the operation that was performed was not in any true sense against the will of the patient or in any legal sense an operation of a different sort from that which the plaintiff had consented to undergo.

The trial judge was therefore right in admitting the evidence and in sending the case to the jury; the fact that the proper question was not left to them being amply explained by his having followed the reputable authority to which reference has been made.

The question, however, is one to be settled, not by authority, but by reason, and its importance is such that it touches at a vital point the interests of the entire public, any member of which may at any time suffer in life or health by the establishment of a rule that will paralyze the judgment of the surgeon and require him to withhold his skill and wisdom at the very juncture when they are most needed, and when, could the patient have been consulted, he would manifestly have insisted upon their being exercised in his behalf.

This concluding suggestion may perhaps be ethical rather than legal, but it does seem that in good morals a patient ought not, in his efforts to obtain a money verdict, be permitted to repudiate the sound judgment exercised in his behalf by the surgeon of his choice in whose judgment, had he been capable of being consulted, he would unquestionably have concurred.

News Items.

Changes of Address.—Dr. H. A. Eastman, to 511 North Maine Street, Jamestown, N. Y., after October 1st.

Dr. Max Hühner, to Ardsley Hall, 320 Central Park West, New York.

Dr. Anna M. Skinner, to 83 Mount Auburn Street, Belmont, Mass.

Dr. Max Toeplitz, to 275 Central Park West, New York.

The Middleton Goldsmith Lectures of the New York Pathological Society will be delivered at the Academy of Medicine, 17 West 43d Street, on Wednesday and Friday evenings, October 2 and 4, 1912, at 8:30 o'clock, by Dr. E. F. Bashford, director of the Imperial Cancer Research Fund of London, England, the subject being A Review of Recent Cancer Research. All those interested are cordially invited to be present.

The Herter Lectures.—The faculty of the University and Bellevue Hospital Medical College have issued invitations to the course of five lectures to be given under the Herter Foundation on Energy Problems in Nutrition, by Professor Max Rubner, of the University of Berlin, beginning on Monday, October 7th, at four o'clock, and continuing daily at the same hour, at the Carnegie Laboratory, 338 East Twenty-Sixth Street.

Southern Medical Association.—The next meeting of this association will be held in Jacksonville, Florida, November 11th, 12th, and 13th. J. M. Jackson, M. D., president, Miami, Fla.; secretary treasurer, Seale Harris, M. D., Mobile, Ala.

Yellow Fever in Venezuela.—Acting Assistant Surgeon Stewart, of the Public Health Service, at La Guaira, reports that during the two weeks ending August 31, 1912, there were reported at Maiqueta four cases of yellow fever with four deaths, and at Caracas one case, imported from Maiqueta.

Additional Harvey Lecture.—The programme of lectures arranged by the Harvey Society for the season 1912-1913 will include, in addition to those mentioned in our issue for September 7, 1912, a lecture by Professor G. H. F. Nuttall, of Cambridge University, on the Re-lapsing Fevers, to be delivered October 12th.

College of Physicians and Surgeons, Boston.—The opening exercises of the thirty-third annual session of this college were held on Wednesday, September 18th, at 3 p. m., in the Amphitheatre, College Building, Shawmut Avenue (near Massachusetts Avenue). Dr. Thomas D. Crothers, of Hartford, Conn., is dean of the faculty.

International Otolological Congress.—The following officers were elected at the recent meeting of this congress, which was held in Boston: President, Dr. Alfred Denker, of Halle; vice-president, Dr. Alexander B. Randall, of Philadelphia; secretary and treasurer, Dr. Henry O. Reik, of Baltimore. The next meeting of the congress will be held in Halle, Germany, in 1915.

Medical Interne, Government Hospital for the Insane.—The United States Civil Service Commission announces that on October 23, 1912, an examination will be held for medical interne in the Government Hospital for the Insane, Washington, D. C. There are at present two vacancies to be filled, at a salary of \$600 a year, with maintenance. For particulars regarding the scope of the examination apply to the United States Civil Service Commission, Washington, D. C.

Association of Military Surgeons of the United States.—This association will meet in annual session in Baltimore, October 1st to 5th, under the presidency of Surgeon Charles P. Wertenbaker, United States Public Health Service. The following officers of the Medical Corps of the United States Army have been detailed to represent the department at the meeting: Colonel L. Mervin Maus, Lieutenant Colonel Jefferson R. Kean, Major Paul C. Hut-ton, and Major Gideon McD. Van Poole.

Infantile Paralysis Epidemic in Sweden.—According to information transmitted, August 21st, by Consul Jenkins at Gothenburg, poliomyelitis is present in epidemic form in the central part of the Province of Halland, in Sweden. The disease attacks adults as well as children. Poliomyelitis was prevalent in Sweden during the year 1911, there having been reported 2,390 cases from May 1st to October 15th, of which 339 cases occurred in towns. In Jonkoping Province to November 29th there were reported 870 cases.

German Physicians Visit Philadelphia.—The members of the German Central Committee for Physicians' Study Travels, who are visiting this country in connection with the Congress of Hygiene and Demography, spent two days last week in Philadelphia en route to Washington. An elaborate programme had been arranged for the entertainment of the party, which included visits to the city's institutions, a trip down the Delaware to the quarantine station, the programme being brought to a close by a banquet on the roof garden of the Continental Hotel, at which Dr. James M. Anders acted as toastmaster.

Italian Hospital Completed.—Exercises in commemoration of the finishing of the new Italian Hospital building, at Eighty-third Street and East River, were held on September 20th, and the institution will be ready for occupancy on or about October 15th. There are over three hundred thousand Italian laborers in and near New York, and the small hospital for Italians in East Houston Street has long been inadequate. The need for a larger institution was recognized, and the Italian Government was finally induced to give \$60,000 toward the erection of the new building, which has ample accommodation for one hundred patients.

Alcohol and Tobacco in Russia.—According to official records, the Russian government collected during the year from the alcohol monopoly \$763,999,000, and from the tobacco monopoly \$66,070,000. "Considering that alcohol and tobacco are poisons," remarks *Rousky Vrach* for June 23, 1912, "and that the government derived this enormous income from legally poisoning the people, it forms a depressing tragedy of modern civilization."

Congress for the Study of Infantile Hygiene.—The next International Congress for the Study of Infantile Hygiene and Pathology will be held in Paris on October 7, 1912. The honorary president of the congress is the minister of public instruction of France. It is the desire of those having the matter in charge that as many pediatricists as possible of foreign countries should attend this congress and take part in the discussions.

American Electrotherapeutic Association.—At the annual meeting of this association, held in Richmond, Va., on September 3d, 4th, and 5th, the following officers were elected to serve for the ensuing year: President, Dr. F. H. Humphries, of London, England; vice-presidents, Dr. George E. Pfahler, of Philadelphia, and Dr. E. C. Titus, of New York; secretary, Dr. J. Willard Travell, of New York, reelected; treasurer, Dr. Emil Heuer, of New York, reelected; registrar, Dr. Frederick M. Law, of New York. Next year's meeting will be held in New York.

Personal.—Dr. William T. Shoemaker has been appointed assistant professor of ophthalmology in the Women's Medical College, Philadelphia.

Dr. Ernest Zueblin, of Pittsburgh, has been elected professor of medicine at the University of Maryland, to succeed Dr. Charles W. Mitchell.

Dr. Richard C. Cabot, of Boston, was the guest of honor at a dinner given by the Associated Charities of Oakland, Cal., on the evening of September 12th. On the preceding afternoon Doctor Cabot delivered a lecture at the University of California on Socialism and Medicine.

American Public Health Association.—At the annual meeting of this association held in Washington, D. C., last week, under the presidency of Dr. John N. Hurty, of Indianapolis, Ind., the following officers were elected: President, Dr. Rudolph Hearing, of New York; first vice-president, Dr. W. R. Batt, of Harrisburg; second vice-president, Dr. James Roberts, of Hamilton, Ont.; third vice-president, Dr. J. F. Monjarez, of San Luis Potosi, Mexico; secretary, Professor Selskar M. Gun, of Boston; treasurer, Dr. Livingston Farrard, of New York; executive committee, Dr. J. R. Porter, Dr. W. G. McKay, and Dr. J. K. Anderson, of Washington. Next year's meeting will be held in Colorado Springs.

The Burke Foundation.—The trustees under the will of John Masterson Burke have filed their accounting in the surrogate's court, and it shows that in addition to \$4,000,000 worth of real estate which Mr. Burke put in trust in 1902, eight years before his death, for the Winifred Masterson Burke Relief Foundation, the estate comprises \$2,435,281 additional, nearly all of which goes to the foundation. Mr. Burke's heirs brought suit to have the will set aside on the ground that the law under which the Winifred Masterson Burke Relief Foundation was incorporated was invalid on technical grounds, but the will was admitted to probate, the statute declared constitutional and the bequest valid. The trustees then brought suit in the Supreme Court to have the will upheld, and a decree to that effect was entered. The object of the foundation is to aid convalescents.

Assistant in Experimental Therapeutics, Philippine Service.—The United States Civil Service Commission announces an open competitive examination for assistant in experimental therapeutics, Philippine Service, for men only. From the list of eligible persons obtained certification will be made to fill a vacancy in the position of research assistant in experimental therapeutics in the Bureau of Science, Manila, at a salary of \$2,000 a year. It will not be necessary for applicants to appear at any place for examination. Their eligibility will be determined upon the evidence furnished in connection with application and examination Form B. I. A. 2, and persons who desire to take this examination should apply at once for this form to the United States Civil Service Commission, Washington, D. C. Applications must be filed with the commission in Washington on or before October 11, 1912.

Pith of Progressive Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL

September 12, 1912.

1. JOSEPH RANSOHOFF: Operative Treatment of Gastroenteroptosis.
2. JAMES MARSH JACKSON: Medical Aspect of Intestinal Adhesion and Peritonitis.
3. F. E. RYTTERIDGE: Dangers Incurred as Result of Nonrecognition of Acute Aural Infections.
4. HILBERT F. DAY: Inversion of Uterus.

1. Gastroenteroptosis.—Ransohoff presents the following views: 1. Every case of visceral sagging should be studied individually, and not treated in a routine way. 2. If the patient continues to suffer after the removal of a normal or nearly normal appendix, he should not lightly be classed as a hopeless neurotic; it is probable that the surgeon has overlooked some visceral displacements or adhesions which are the cause of the suffering. 3. A small incision in abdominal work of the kind under consideration has signal disadvantages. 4. The conclusion of the physician, founded on laboratory findings, cannot be made the basis of the functional capacity of the stomach under every day conditions. 5. Operation promises relief in many seemingly hopeless cases of gastroenteroptosis with marked neurasthenic symptoms. If this is the result of suggestion, it is none the less valuable if the relief is permanent. 6. While internal treatment should be tried, operative intervention should not be unnecessarily delayed lest the habitus nervosus become too deeply rooted to be eradicated. 7. No gastropotopic patient should be operated upon unless some actual functional disturbance can be demonstrated. 8. Given a visceroptosis in which distinct functional incompetence or deviations can be demonstrated, the existence of nervous phenomena does not militate against operation, but may be the chief reason for performing it.

4. Inversion of the Uterus.—Day says that inversion of the uterus is rare and will become rarer with the decrease of untrained accoucheurs. Acute inversion should be reinverted as soon as possible. Chronic inversion demands operation as soon as the patient's condition warrants it.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

September 14, 1912.

1. TORALD SOLLMANN: Current Problems of Pharmacology and Therapeutics.
2. M. L. WILBERT: Present Status of Laws Relating to Patents and Trade Marks.
3. F. E. STEWART: Relation of the Patent and Trade Mark Laws to *Materia Medica Nomenclature*.
4. GEORGE L. WALLACE: Influence of Pathological Conditions on Action of Drugs.
5. BERNARD FANTUS: Candy Medication.
6. CLARENCE E. SKINNER: Practical Application of Röntgen Ray to Management of Malignant Growths.
7. WALTER W. HAMBURGER: Comparative Studies in Cancer and Normal Tissue Ferments.
8. SIDNEY A. CHALPONT: Acetabularia: Relation to Postoperative Vomiting in Ether Anesthesia.
9. LOUIS J. LADINSKI: Treatment of Tubal Gestation with Special Reference to Immediate Operation for Rupture.
10. EDWARD P. DAVIS: Drainage of Kidney by Incisions for Bacillus coli communis Infection in Pregnant and Parturient Patients.
11. GEORGE W. T. MILLS: General Paralysis in Women.
12. H. Z. GRIFFIN: Diagnosis of Divericulitis of Large Bowel.
13. MARY E. LAPHAM: Treatment of Pulmonary Tuberculosis by Compression of Lung.
14. JOHN A. LENTSCHER: Bacteriology of Epidemic Sore Throat.
15. EVERETT MCGUIRE: Rhabdomyosarcoma.
16. JAMES B. MURPHY: Transplantability of Malignant Tumors to Embryos of Foreign Species.
17. S. T. POWELL: Water Purification Works of Baltimore County.
18. FRANK WILSON FENDEL: New Regulating Dropper for Ether and Chloroform: Usable on Any Container.

19. H. H. RIGHTER: Localized Gangrene Following Use of Quinine and Urea Hydrochloride.
20. F. H. BRANDI: Closed Empyema of Ethmoid and Frontal Sinuses Producing Marked Exophthalmos.
21. WILLIAM F. DOOLITTLE: Postoperative Hiccups.
22. CHARLES A. MOSELEY: Asymmetrical Bilateral Herpes zoster.

1. Current Problems of Pharmacology and Therapeutics.—See this JOURNAL for June 15th, page 1290.

2. Laws Relating to Patents and Trade Marks.—See this JOURNAL for June 15th, page 1291.

3. Relation of the Patent and Trade Mark Laws to *Materia Medica Nomenclature*.—See this JOURNAL for June 15th, page 1291.

4. Influence of Pathological Conditions on the Action of Drugs.—See this JOURNAL for June 15th, page 1290.

5. Candy Medication.—See this JOURNAL for June 15th, page 1291.

6. Practical Application of the Röntgen Ray to the Management of Malignant Growths.—See this JOURNAL for June 15th, page 1291.

13. Treatment of Pulmonary Tuberculosis by Compression of the Lung.—See this JOURNAL for June 8th, page 1227.

15. Rheumatism.—Mingus asserts priority in two ideas which he presents in this paper. The first is that the initial seat of infection, in many cases of rheumatic fever, is in the intestinal tract, from which bacteria and their toxins are absorbed and passing into the general circulation produce peripheral symptoms. Second, the persistence of the bacteria of rheumatic fever in the intestinal tract in an attenuated form gives rise to chronic or recurring attacks. Dietetic, hygienic, environmental errors of the patient, which cause a reduction in metabolic activity and natural resistance, arouse the bacteria to activity.

16. Transplantability of Malignant Tumors to the Embryos of a Foreign Species.—Murphy demonstrates in a conclusive manner that mammalian tumor tissue can live and develop actively in the chick embryo, although it quickly dies and is absorbed in the adult chicken. The mammalian tissue will grow continuously in the avian host as long as forty-six days, perhaps indefinitely, if it is transferred from one embryo to another, proving that the food supplied by the avian embryo may be utilized by the mammalian cells. It is a question now being studied whether the phenomenon is dependent alone on this factor, or whether the absence of a defensive mechanism in the embryo plays the more important part.

MEDICAL RECORD.

September 14, 1912.

1. LEROY S. PETERS and E. S. BULLOCK: Sanatorium Treatment of Tuberculosis.
2. HENRY A. CRAIG: Three Hundred Cases Treated by Autogenous Bacterial Vaccines.
3. SAMUEL W. BOORSTEIN: Institutional Treatment of Arthritis deformans.
4. WALTER P. WEIDLER: Keratitis neuroparalytica after Removal of Gasserian Ganglion.
5. W. D. HAMILTON: Diagnosis of Gallstones.
6. CHARLES E. NAMMACK: Abortion, Social and Ethical Aspects.

2. Cases Treated by Autogenous Bacterial Vaccines.—Craig does not contend that vaccine treatment is a panacea, for necessarily it has its limitations; if given with proper precautions it does no apparent harm, even in cases not suited to the treatment, or where the patient has not sufficient

vitality to react. The writer does not recall a single instance of resulting harm in a personal administration of over a thousand doses of autogenous vaccines. Hypersusceptibility or anaphylaxis was not observed, nor bad effects due to the so called negative phase. While this treatment cannot take the place of surgical procedures, it is in many instances a very useful ally. It does not preclude the use of standard methods of treatment, since the latter can also be used; it is simply an additional means of treating bacterial infections.

LANCET.

August 31, 1912.

This issue is devoted entirely to statistical information for intending medical students.

September 7, 1912.

1. E. A. SCHÄFER: Nature, Origin, and Maintenance of Life.
2. J. G. GREENFIELD: Value of Quantitative Albumin Estimation of Cerebrospinal Fluid.
3. E. C. MORLAND: Quantitative Cutaneous Tuberculin Test.
4. P. B. ROTH: Treatment of Flat Foot.
5. F. P. WEAVER and F. W. PRICE: Coarctation of Aorta in Adult.
6. W. J. MCKEAND and D. M. REID: Large Caseous Tubercle of Myocardium.
7. W. CALDWELL: Very Exuberant Growth of Molluscum contagiosum.

1. **The Nature of Life.**—See editorial article, page 646.

2. **Albumin Estimation in Cerebrospinal Fluid.**—Greenfield has employed a modification of the Noguchi butyric acid reaction for the purpose of making quantitative estimations of albumin in the cerebrospinal fluid. The Noguchi test is carried out as usual, using two c. c. of spinal fluid, and the whole of the mixture is poured into a centrifuge tube graduated into 0.1 c. c. divisions. Each 0.1 c. c. of albumin after use of the centrifuge is equivalent to 0.025 per cent. Greenfield has carried out parallel tests with the Esbach method where enough fluid was available, and finds his new method accurate and applicable to small amounts of fluid. Normal fluids gave readings of 0.01 to 0.05 per cent., while syphilitic meningitis and parasymphilitic disease gave them up to 0.15 per cent. High readings, above 0.25 per cent., are, according to the author, an indication in almost every case for operative treatment. Such high readings are to be found in syphilitic meningitis, spinal tumor, and compression paraplegia from other cause such as Pott's disease, fracture, or dislocation.

3. **Quantitative Tuberculin Test.**—Morland describes a simple method of performing a graduated von Pirquet test which will give quantitative results. The only drawback to the general application of such a method is the complicated calculation. This he has sought to simplify by the preparation of a table, which he gives in his article. He believes that such quantitative estimation gives the degree of tuberculous sensitiveness at the time of examination and is of great importance in diagnosis and treatment. He suggests the following applications for the method: 1. In deciding whether an existing tuberculosis is in a condition which requires treatment or not; 2, as a guide to the progress of a case; 3, in determining or excluding the diagnosis of tuberculosis in a doubtful case; 4, in determining the initial dose of tuberculin for a therapeutic course; 5, in standardizing any particular preparation of tuberculin or in comparing two or more preparations. The fallacies of the test are to be found

in the fact that the von Pirquet reaction tends to disappear in advanced cases of the disease and in acute miliary tuberculosis; that it is constantly absent in the first ten days of measles and some other transient acute conditions; and that the quantitative test tends to remain high long into convalescence from bone and glandular tuberculosis.

4. **Treatment of Flat Foot.**—Roth believes that operative measures are never necessary and that excellent results are uniformly obtained by the proper construction of the shoes and a combination of exercises and correct standing. He insists that the shoes fit the individual foot correctly and that the front of the shoe end opposite the great toe so as to allow the patient to rise on this for the sake of postural restoration of the arch. The soles are to be built up inside the shoes, raising both the heel and the ball of the foot on the inner aspect so as to throw the weight onto the outer aspect of the foot. The patient is to stand toeing slightly inward and to walk with the feet straight in front of him, i. e., parallel. In both standing and walking he is to throw his weight over the outer border of the foot. The several exercises are for the combined purpose of facilitating control of the muscles moving the feet and to increase the range of movement of the foot at the several joints.

6. **Tubercle of the Myocardium.**—McKend and Reid report a case of this comparatively rare condition in which the tuberculous masses were multiple and very large. They were found in the walls of the ventricles only and, though very extensive, had caused no symptoms during life.

LYON MÉDICAL

August 18, 1912.

BRET and BLANC-PERDUCET: Subaortic Stenosis.

Subaortic Stenosis.—Bret and Blanc-Perduet refer to stenosis of that portion of the aortic infundibulum which extends for a distance slightly exceeding one cm. between the fibrous ring of the aortic valve and the true point of entrance of the aorta into the left ventricle. The authors found seven recorded instances of this type of stenosis, and report an additional case which is unique in the nature of the pathological conditions responsible for the stenosis. The patient was a man of fifty-eight years, who presented as chief symptoms repeated hemoptysis, increasing dyspnea, evidences of slow, tuberculous pulmonary infiltration, and a loud systolic murmur, audible on both side of the chest posteriorly and in the lumbar region and showing two points of maximal intensity, one at the usual area of aortic stenosis, the other at the inner portions of the fourth and fifth left intercostal spaces. After a period of progressive cardiac weakening, in the course of which the murmur almost completely disappeared, sudden death took place. At autopsy there were found in the smaller cusp of the mitral valve two conical calcareous masses, so projecting as to force the other mitral cusp into the lumen of the aortic infundibulum. Directly opposite was a projection from the interventricular septum due to hypertrophy of the muscle in this situation. The result was a marked encroachment upon the infundibular lumen, the transverse diameter of which

measured one half cm. at the most. No other valvular lesion was present, the aortic cusps, in particular, being sound, and no evidence of a former endocarditis visible. The signs characteristic of subaortic stenosis are considered by the authors to be: Systolic murmur with maximal intensity in the classical area for aortic stenosis; transmission of the murmur, when it is pronounced, both upward and downward; and marked variation in the intensity of the murmur in exact correspondence with changes in the myocardial power.

PARIS MÉDICAL.

August 31, 1912.

1. MAURICE PERRIN: Certain Symptoms of Exanthemata Thought to Be Pathognomonic.
2. SALIGNAT: Symptoms and Diagnosis of Ulcerative Pyloric Stenoses.
3. GÉNÉVRIER: Open Air Schools of Rome.
4. SAVIDAN: Premature Labor Induced by Abdominal Compression.

1. **Alleged Pathognomonic Symptoms of Exanthemata.**—Perrin says certain symptoms, like new remedies, have a great vogue, then a stage of neglect, and finally take their proper place. He discusses Meyer's sign of special sensations in the limbs in scarlet fever; the great majority of patients with this disease do not exhibit it. Pastia's special eruption in scarlatina at the bend of the elbow is interesting, but by no means constant. Filatoff's pallor of the chin contrasted with the redness of the cheeks, which he avers to be characteristic of scarlatina, Perrin has seen in pneumonia, influenza, measles, simple angina, and gastric disturbance. Koplik's spots in measles are by no means constant, and, furthermore, have been noted by numerous observers in other diseases, diphtheria, whooping cough, staphylococcic amygdalitis, catarrh of the respiratory passages, etc.

3. **Roman Open Air Schools.**—Génévrier finds the most ingenious invention in these schools to be the combination folding chair and desk which each scholar carries on his back to the open air spot chosen for the day's work.

4. **Premature Labor Induced by Abdominal Pressure.**—Savidan's case was in a woman in grave danger of eclampsia, the edema being so great as to involve the labia, while the thighs were forced apart. There were marked mitral insufficiency, vertigo, headache, anemia, loss of appetite. Fearing to provoke hemorrhage, on account of the swollen labia, Savidan, remembering a similar experience of a professional friend, resolved to try compression by a belt bandage. Securing the fetal head in a convenient position by two tampons placed on the abdominal surface, a large bandage of absorbent material was passed around the body and tightly "cinched"; this bandage remained in place all night, i. e., some twelve hours. In the morning the bandage was tightened, and at five o'clock in the afternoon a slight, bloody discharge appeared at the vulva. In ten minutes labor was complete, a female child being shot into the world somewhat like a cherry-pit when the fruit is squeezed between the fingers. The perineum was torn for five inches, a likely accident in view of the circumstances. Was not this labor accomplished, asks Savidan, by Bier's hyperemia? He likes the method, and concludes by saying it justifies condemnation of corset wearing by pregnant women.

BERLINER KLINISCHE WOCHENSCHRIFT.

July 1, 1912.

1. O. BRILL and L. ZEHNER: Effects of Injections of Soluble Radium Salts upon Blood Picture.
2. ADALBERT ROSENTHAL: Pathology of Secretions in Diabetes insipidus.
3. GUSTAV STUMPF: Favorable Influence of Salvarsan upon Pemphigus.
4. W. GENEVRIER: Etiology of Neurorecidives and Neosalvarsan Treatment (Concluded).
5. H. E. SCHMIDT: Results and Technique of Röntgen Treatment in Gynecology.
6. R. STUMPF: Tracheitis gummosa.
7. O. HUBER: Differential Diagnosis of Aneurysms of Aorta.
8. B. KETMAN and M. MAYER: Graduation and Dose of Thorium X Preparations.
9. LUDWIG F. MEYER: Spasmophilias.
10. HERMANN KÜMMEL: Surgical Treatment of Different Forms of Nephritis.
11. Y. NOGUCHI: Early Use of Enterostomostomy in Front of Hernia in Treatment of Gangrenous Forms.
12. L. BLUMERICH: New Methods in Gynecological Diagnosis.
13. FRIEDRICH WELLMINSKY: Formation of Albumin and Mucin by Tubercle Bacilli.
14. A. BICKEL: Thorium X Treatment of Pernicious Anemia.
15. MAX LEVY-DORN: Polygrammata with Visible Succession of Phases of Single Motion.
16. E. FELD and E. SCHLESINGER: Coagulation of Blood.
17. HANS MUHSAM: Experiments with Boehm's Rapid Distillator (Hysan) and the Resistance of Blood Corpuscles to Salvarsan.
18. GEORG SCHMIDT: Improvements in Sanitary Corps of Royal Prussian Army during 1911.
19. ALBRECHT: Modification of Suspension Laryngoscopy.
20. W. HANAUER: Medical Law in Insurance of Sick.

July 15, 1912.

21. A. VON KORÁNYI: Influence of Benzol upon Leuchemia.
22. PAUL FRANK: Rheumatismus nodosus with Special Reference to Pathological Anatomical Findings.
23. JOSEF HIRSCH: Pregnancy after Artificial Fecundation.
24. RUDOLF EHRMANN: Technique for Examination of Action of Pancreas.
25. H. LIEFMANN and ALFRED LINDEMANN: Mortality of Nurslings in Berlin during Summer of 1911.
26. ACHILLES MÜLLER: Sinus pericranii.
27. ARNOLD FROMME: Prolonged Scopolamine Anesthesia while Withholding Morphine.
28. W. SCHASSE: Schools and Manual Training Schools in Home for Cripples in Connection with Activity of Physicians.
29. R. BESSE: Soluble Aspirin.
30. ARTHUR SCHMITT: Specific Treatment of Gonorrhea in Female.

July 22, 1912.

31. C. NEUBERG, W. CASPARI, and H. LÖHE: Experiments with Substances to Which the Tumors Are Susceptible (*Tumorfärbende Substanzen*) on Animals Suffering from Tumors.
32. W. FALTA: Late Eunuchoidism and Multiple Sclerosis of the Blood Glands (To be concluded).
33. FRITZ SACHS: Stability of Scopolamine Solutions.
34. RUDOLF EHRMANN: Percussion of Organs and New Formations in Abdomen.
35. MAX EINHORN: Experiences with Duodenal Feeding.
36. W. LIEPMANN: Increase of Milk Secretion through Increased Nutrition with Albumin.
37. GOTTFRIED SCHWARZ: Warning against, and Explanation of Barium Sulphate.
38. C. BACHEM: New Remedies.
39. GUSTAV ERLANGER: New Theories of Glaucoma and Glaucoma Operation.
40. A. SCHLENZKA: Modified Goldschmidt's Instrument for Examination and Treatment of Anterior Urethra.
41. L. BRIGER and M. KRAUSE: Chemotherapeutics in Trypanosome Infection (*Trypanosoma Brucei*) after Introduction *per Os*.
42. HANS PRINGSHEIM: Mutation and Adaptation in Microorganisms.
43. H. FRÖSCH: Process of Anaphylatoxin Formation from Bacteria.
44. EUGEN LUDWIG: Anatomical Examinations of Depressor Nerve in Heart Hypertrophy.
45. OSKAR MEYER and KURT MEYER: Etiology of Malignant Granuloma.
46. C. GUTMANN: Neosalvarsan.
47. O. NORDMANN: Clinical Experiences during Severe Diphtheria Epidemic of Last Year.
48. ERNST RUNGE: Technique with Röntgen Ray in Gynecology.
49. W. FALTA: Late Eunuchoidism and Multiple Sclerosis of Blood Glands (Concluded).

July 29, 1912.

1. **Effects of Injections of Soluble Radium Salts upon Blood Picture.**—Brill and Zehner have made extensive experiments with injections of soluble radium salts. They observe that these solutions are not very stable and contain at best 0.00017 mg. radium metal in 1,000 units of the ordinary fontactoscope. The animals, dogs or rabbits, upon which these experiments were carried out, remained quite well, and weight and temperature remained normal. The experimenters have found that the injections of radium salts had an intensive effect upon the entire hematopoietic apparatus: The num-

ber of the red corpuscles increases enormously; for example, from 5,400,000 to 7,200,000 in half an hour; to 8,300,000 in two hours, and finally, to 13,000,000 after seven days, which high figure remains for weeks. The concentration of the leucocytes is also increased, after two hours about sixty per cent., and after a few days, about 200 per cent. They also found that the excretion of subcutaneously injected soluble radium salts takes place mostly through the feces, and very slightly through the urine. During the first four days, from four to nineteen per cent. of the injected radium salt is excreted in this manner and thenceforward in very small quantities. As the radium salts remain intact for a long time, it is concluded that the unexcreted salts are retained for a long period in the body. This observation coincides with the prolonged increase of the blood corpuscles, and is also observed by clinicians in the protracted effect of such radium salt injections. The authors express the hope that, based upon their experiments, such injections will be made use of clinically.

3. **Pemphigus and Salvarsan.**—Stümpke reports two cases in which pemphigus was very favorably influenced by salvarsan injections, while under the former form of treatment as quinine, Fowler's solution, zinc powder, and baths no improvement was visible. The dose was 0.6 gramme, given in intravenous injection, which dose was sometimes repeated.

9. **Spasmophilia.**—Meyer gives the bibliography of tetanus of nurslings which has appeared during 1910 and 1911.

21. **Influence of Benzol upon Leuchemia.**—Von Korányi has found that after a short period of increase in the number of white blood corpuscles following the use of benzol, a decrease begins at the beginning of the third week, which is first slow, later quick, and, finally, the number remains constant for a longer period, but in an increased state; swelling of the spleen is also diminished, but the lymphatic glands do not seem to be influenced. The results obtained from benzol are usually slower than those from röntgenotherapeutics, but if in the treatment the Röntgen rays do not show results, benzol will act beneficially. The dose should be rather a large one; from three to four grammes of benzol given daily will be tolerated for months, but sometimes bad by effects are observed, as burning in the stomach, belching, tracheobronchitis, and dizziness; the disturbances of the stomach will be relieved if oil is added to the benzol.

23. **Pregnancy after Artificial Fecundation.**—Hirsch reports six cases in which he has been able to produce artificial fecundation. In one nine weeks after conception abortion occurred; the other five women have not yet come to term. His technique is the one usually described, with use of the condom. He then takes up the legal points and quotes Rohleder, who states that artificial impregnation should be used after five years of unproductive intercourse; but he opposes the idea that although both parties have given the permission, that is, husband as well as wife, the semen of another man should not be used.

29. **Soluble Aspirin.**—Bercke notes results with soluble aspirin similar to those reported from other

sources in these pages; that is, it is said to be a very good antirheumatic remedy.

31. **Experiments with Substances to which Tumors are Susceptible on Animals Suffering from Tumors.**—See editorial article, page 544.

35. **Experience with Duodenal Feeding.**—Einhorn observes that in a few cases in which the pylorus could be felt as a small, oval growth of about the size of a walnut, the probable result of a spastic condition, this tumor disappeared during duodenal feeding and did not recur. In about half of the cases of ulcer in the stomach or duodenum which before the feeding had given a positive duodenal thread reaction, this reaction after the feeding became negative, a fact which made the conclusion perfectly logical that a real healing of the tumor had occurred. In cases of very pronounced ptosis and enlargement of the stomach, a considerable change in the position and circumference of the stomach could be observed after the duodenal feeding. Einhorn, therefore, comes to the conclusion that duodenal feeding is a therapeutical method which in certain cases will be of value.

CENTRALBLATT FÜR ALLGEMEINE PATHOLOGIE UND PATHOLOGISCHE ANATOMIE.

August 15, 1912.

1. O. O. FELLNER: Artificially Produced Changes in Growth of Female Genitalia of Rabbits.
2. K. MOTZFELD: Primary Sarcomatosis peritonæi.
3. K. ECKELT: Albuminous Clot in Kidney Pelvis.
4. B. HUGUENIN: Mast Cells with Sudanophilic Granules.
5. S. S. CHALATOW: Comments on Hanes's Article, Presence and Significance of Anisotropic Lipoids in Liver of Chicken Embryos.

August 31, 1912.

1. **Changes of the Growth of the Female Genitalia of Rabbits.**—Fellner found that the subcutaneous injection of placental extract induced a marked increase in the growth of the uterus. There was also an increase in the muscular tissue of the vagina. The mammary glands showed marked formation of acini, but in no instance was there any secretion of milk.
3. **Albuminous Clot in the Kidney Pelvis.**—Eckelt reports this condition as occurring in a three months old infant. He considers that such a structure may be of importance in the formation of renal calculi, belonging to the inflammatory type.

CORRESPONDENZ-BLATT FÜR SCHWEIZER AERZTE.
August 1, 1912.

1. ROBERT BING: Cerebrospinal Arteriosclerosis and Treatment.
2. A. SUTER: Mastisol in Treatment of Wounds.
3. J. JADASSOHN: Specific Treatment of Parasyphilitic Diseases of Nerves.
4. E. WORMSER: Operation for Prolapse in Older Women.
5. E. DÖBBEL: Etiology and Pathology of Whooping Cough.
6. F. SUTER: Results from Intravenous Operations.
7. PAUL TRUSS: Peculiar Cases of Carbon Dioxide Intoxication (To be concluded).

August 20, 1912.

2. **Mastisol in the Treatment of Wounds.**—Suter approves of the use of mastisol in surgery. Mastisol is a preparation of mastic, a resin from Chios, dissolved in benzol, twenty to fifty parts, with twenty drops of linseed oil or its ester. The first preparation was made with chloroform instead of benzol, and proved its value in the Russo-Japanese war. It is a good antiseptic, keeping the field of operation clean; bandages impregnated with the oily solution also do good service. Mastisol does not irritate the skin, the change of bandages and ap-

pliances impregnated with mastisol is painless; and, finally, it is cheap.

3. **Specific Treatment of Parasyphilitic Diseases of the Nerves.**—Jadassohn says that the opinion is prevalent that as tabes and paralysis have both a syphilitic etiology, specific treatment after an early diagnosis is absolutely indicated; and such treatment should consist of iodine, mercury, and salvarsan.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT

July 4, 1912.

1. THEODORE KOCHER: Struma and Its Treatment (*To be concluded*).
2. R. RIEDEL: Delayed Neuralgia after Amputation of Femur.
3. EDELMANN and KARPEL: Urinary Eosinophilia in Asthma.
4. LANDSBERGER: Rapid Psychosis with Acute Pneumonia.
5. V. C. E. PETERSEN: Action of "Carbohydrate Days" in Treatment of Diabetes.
6. L. HUISMANS: Clinical and Pathological Diagnosis of Malignant Tumors of Pleura.
7. SLATOWERCHOWNIKOW: Diagnostic Value of *Signe de sou* in Pleuritic Exudates.
8. FRITZ RÄTHER: Muscle Spasms and Muscle Rigidity.
9. G. KAESTNER: Anionic Therapy.
10. MEIROWSKY: Paradox Sera in Wassermann Reaction.
11. M. SCHALL: Sanitation (*Concluded*).
12. PRINZING: German Birth Statistics.
13. HELEN SELTZNER: Women Physicians.

July 11, 1912.

14. THEODORE KOCHER: Struma and Its Treatment (*Concluded*).
15. GOTTFRIED SCHWARZ: Röntgen Examination of Intestine.
16. POPPER and FRANKL: Action of Important Opium Alkaloids on Intestine.
17. PETRUSCHKY: Satisfactory Experiments in Making Bacilli Carriers Harmless by Active Immunization.
18. E. SACHS: Infection and Infection Fever intra Partum.
19. KRAMER: Premontory Symptoms of Thrombosis.
20. ARTUR SCHMITT: Further Experiences with Salvarsan.
21. H. NAKANO: Pure Cultures of Spirocheta pallida.
22. SCHERESCHESKY: Pure Cultures of Syphilis Spirochetes.
23. OSKAR VULPIUS: Sanatorium Treatment of Surgical Tuberculosis.
24. BLEYVAD: Tympanic Membrane Anesthesia.
25. FLEMING: Unconsciousness in Air Ships.

July 18, 1912.

26. A. PETERS: Diagnosis and Therapy of Sympathetic Eye Infections.
27. G. SULTAN: Extradural Metastatic Suppuration.
28. BENZO HALLY: Diphtheritic Congestion and Immunity.
29. NOERTHE: Causes and Treatment of Writer's Cramp.
30. STEINER: Iodocithin and Arteriosclerosis.
31. VON SOHLERN, JR.: Oppenheim's Index Figures for Judging State of Nutrition.
32. HIRSCHBERG: Psychoses in *Typhus exanthematicus*.
33. NEILSON-GEVER: Sources of Error in Serum Diagnosis of Syphilis.
34. F. KIRSCHBERG: Treatment of Scar Tissue.
35. Care of Infants in Bavaria.

July 25, 1912.

36. UMBER: Indication and Prophylaxis in Surgical Treatment of Diabetics.
37. GEORG WOLFSOHN: Hyperthyrea and Anaphylaxis.
38. OTTO HESS: Experiments with *Bacterium coli* as Cause of Suppuration.
39. A. LIPPMANN: Hemorrhagic Nephritis in Purpura.
40. ENGELHARDT: Auditory Findings in Central Neurofibromatosis.
41. BERNHARD VAS: Source of Error in Use of Phenolphthalein Blood Test.
42. ONDREJOWITZ: New Method of Demonstrating Acetic Acid in Urine.
43. M. HIROSE: Alimentary Galactosuria in Liver and Nervous Diseases.
44. R. JORAT: Megacigmoid as Cause of Four Months' Constipation.
45. R. HERTZ: Commitment Diversion in Echinococcus Cases.
46. MARTINI: Significance of International Pest Conference in Mukden.
47. BARON BÜBERG: Chinese Cuck.

1. **Struma and Its Treatment.**—Kocker, judging from the results of 15,000 operations, comes to the conclusion that the family physician should advise operation in every case of growing and compressing goitre and in all cases showing disturbed heart action. It is his duty to urge an early operation and not to wait for complications which make the postoperative prognosis unfavorable, particularly in cases showing hyperthyroidism. Iodine and the usual internal treatment are to be administered in cases with no compression symptoms and where growth is slow, with signs of hypothyroidism. Here a rational and specific internal therapy can produce just as brilliant and satisfactory results as surgery with its radical methods, in cases compli-

cated by rapid growth, unfavorable position, and positive thyrotoxic symptoms. Radical procedure obviates the dangers which internal treatment cannot do.

5. **Carbohydrate Days in Diabetes.**—Petersen shows that, according to his own and Blum's experiments, the action of "carbohydrate days," that is, feeding exclusively on oatmeal, wheat, farina, macaroni, or graham bread for a few days, is not due to any specific kind of grain. The action is that of inanition, analogous to the "hunger days," introduced and much used by von Naunyn and von Mehring. Their "oatmeal vegetable days" have the advantage that at least the patients receive something to eat. There is a decided advantage in being able to vary the carbohydrates. On the whole the rule should be observed to give fewer calories than necessary for daily use.

7. **"Signe de sou" in Pleuritic Exudates.**—Slatowerchownikow followed out and enlarged upon the experiments of Pottenger concerning muscle spasm and muscle rigidity in acute and chronic tuberculous patients, and arrived at the conclusion that in pulmonary tuberculosis there are changes in the respiratory muscles brought about by the continuity and contiguity of the tuberculous process itself and by the dissemination of the tuberculous virus through the blood stream. The changes in the scaleni cannot be directly due to the process in the lungs, on account of the anatomical relations. He questions Pottenger's statement that the changes in the scaleni are anatomical and furnish an exact differential diagnosis between active and passive tuberculous lesions.

19. **Thrombosis.**—Kraemer says that: 1. After operation or labor, pulse and temperature should be taken twice daily; 2, subfebrile or afebrile temperature, with increased pulse rate, should raise a suspicion of beginning thrombosis or embolism when these symptoms cannot be traced to local inflammatory processes; 3, subfebrile temperature with increased pulse strongly contraindicates getting up or sitting up; such actions may lead to fatal embolism; 4, subjective symptoms as headache, restlessness at night, sudden pain in side, dragging pains in lower extremities, pain under Poupart's ligament, marked listlessness, together with disturbed pulse and temperature, are significant and should put the physician on his guard.

36. **Surgical Treatment of Diabetics.**—Umbert believes with von Noorden that indications for surgical interference in diabetes are no fewer than in nondiabetics. In gangrene, the condition of the blood supply of the affected part is of the utmost importance. The gangrene is usually due to the arteriosclerosis and is not of diabetic origin. Cases complicated by acidosis are the most difficult to decide as regards surgical interference. At times, proper diabetic treatment removes threatening gangrene. The severest cases complicated by acidosis are no contraindication to operative procedure. He cites cases where satisfactory results have been obtained by operation and proper diet. Prophylactic treatment before operation aims to decrease glycosuria and acidosis. In cases with no tolerance he advises oatmeal treatment with alkalies. The time of operation should correspond to the physiological

fasting time, namely, early morning. Local anesthesia is preferable to general. Postoperative coma, however, is not always avoidable by the latter method, and stretching of the tissues is an unfavorable factor. Ether is better borne than chloroform.

37. Hyperthyrea and Anaphylaxis.—Wolfsohn says hyperthyrea and anaphylaxis are analogous in many ways. Characteristics of both are leucopenia, mononucleosis, eosinophilia, and delayed blood coagulation. Symptoms of a vagotonic disposition are present in both. Therefore, hyperthyrea is probably to be regarded as an anaphylactic process. In this case the foreign body protein would be an iodide albumin secreted overabundantly by the thyroid. He succeeded in a few cases of hyperthyrea by passive transference to guinea pigs in showing in the serum of these patients anaphylactic bodies reactionary to iodide albumin.

39. Hemorrhagic Nephritis in Purpura.—Lippmann found that a hemorrhagic nephritis is not a rare complication of purpura hemorrhagica. Light cases soon clear up. Usually a chronic interstitial hemorrhagic nephritis results which may last for years without changes in either heart or blood pressure or without compromising the activity of the individual. The severest forms go from the acute stage to uremia. The forms of general purpura (skin, joint, and intestinal involvement) are predisposed to nephritis. The explanation for the nephritis is analogous to the observation of Lohlein's in endocarditis verrucosa, i. e., embolism of the glomeruli.

43. Alimentary Galactosuria.—Hirose proves that cirrhosis of the liver and catarrhal icterus frequently show alimentary glucosuria, while other lesions of the liver show it less frequently. In Basedow's disease galactosuria is marked, in neurasthenia less so.

ZENTRALBLATT FÜR GYNAKOLOGIE

August 3, 1912.

1. W. RÜBSAMEN: Fatal Poisoning Following Use of Official Camphor Oil as Prophylactic against Postoperative Peritonitis.
2. WANNER: Ovarian Abscess Originating from Appendix.
3. P. JUNG: Attempts at Abortion when in Nonpregnancy and in Tubal Gestation.
4. PAPANICOL: Formation of Artificial Vagina from Small Intestine.

August 10, 1912.

5. A. MAYER: Treatment of Retroflexed Uterus.
6. M. SAMUEL: Use of Flexed Position as Protection to Peritonium.
7. E. HERZ: Rapid Dilatation of Uterus.

August 17, 1912.

8. E. HOLZBACH: Bacterial Content of Field in Gynecological Operations and Its Significance Concerning Postoperative Course.
9. W. LIEPMANN: Drainage and Freund-Wertheim Operation for Cancer.
10. J. KOCKS: Vacuum Cap.
11. R. PATEK: Unexpected Action of Hypophysis Extract upon Gravid Uterus.

1. Poisoning by Camphor.—Rübsamen discusses the dose of camphor oil when given intraperitoneally and calls attention to the quite divergent results obtained with practically similar amounts. He then reports a case in which 170 c. c. of the official ten per cent. camphor oil caused death within two days. The author concludes that much care must be given in the employment of this method, also that the ten per cent. solution should not be used, but a one per cent. There will then be less danger of overstepping the proper dose.

2. Ovarian Abscess Originating from the Appendix.—Wanner reports two such cases and

states that they could not have been cured except by a laparotomy; a vaginal operation would not have been successful.

7. Rapid Dilatation of the Uterus.—Herz, on account of personal experience, has abandoned the Hegar method and uses the three arm Sims dilator.

8. The Bacterial Content of the Field of Operation.—Holzbach found bacteria in twenty-six out of forty-six cases. In tracing possibilities of infection he observed that thirty-three per cent. of all the sponges, etc., became infected if exposed to the air for fifteen minutes; also that the cloths covering the patient and the instruments became covered with bacteria in a very short time. These organisms, however, were not pathogenic to rabbits. In those cases where bacteria were present at the site of operation there was a mortality of 23.5 per cent. when streptococci occurred, against 3.4 per cent. with staphylococci.

9. Drainage.—Liepmann is very emphatic in advocating the employment of satisfactory drainage in cases of the operation for cancer of the uterus; that it is not so much improvement in the operation that is needed, but improvement of the methods of drainage.

11. An Unexpected Action of Hypophysis Extract upon the Gravid Uterus.—Patek states that extracts of the pituitary gland have been considered specially valuable in bringing about abortions. He then reports three instances in which the pituitary extract had an inhibiting action in impending abortions in which the cervical canal showed dilatation. The thought is expressed that the different glandular portions of the hypophysis exert varying effects in bringing about increased labor pains and contractions.

ROUSSKY VRATCH.

June 23, 1912.

1. N. A. BATNEFF: Complete Transposition of Viscera and Causes of Anomaly.
2. S. S. ABDULOFF: Treatment of Gonorrheal Infections with Antigonococcic Serum.
3. S. K. SOLOVJEFF: Absorption of Sodium Nucleinate in Old Age as Compared with Youth.
4. S. S. DORICHIN: Epidemiology of Typhus Fever.
5. E. V. KUZMIN: Double Subcalcanear Bursitis.
6. B. N. DENISOFF: Anomalous Branching of Right Subclavian Artery.
7. V. V. POZHENKO: Pubiotomy According to Tandler.
8. A. O. MICHAJLOVSKAIA: Modification of Antiformin Method of Examination of Sputum for Tubercle Bacilli.

1. Transposition of Viscera.—Batneff describes a case of complete transposition of the internal organs in a man, sixty years old, who died from pulmonary tuberculosis. He presents a full discussion of this rare anomaly from the embryological standpoint.

2. Antigonococcic Serum.—Abduloff treated seven patients with chronic gonorrhea by injecting a proprietary antigonococcic serum. He found that the serum had no effect on the gonococci, but relieved some of the symptoms and shortened the course of the disease. In gonorrheal arthritis, the effects were beneficial. The injections proved harmless, the only untoward effect being a local or general eruption. He recommends the use of the serum in connection with the other treatment.

8. The Antiformin Method of Sputum Examination.—Michajlovskaja employed Kozloff's modification of the antiformin method in nineteen examinations of sputum, but failed to show tubercle

bacilli by the usual method of staining. In eleven of these tubercle bacilli were revealed by Kozloff's method. The technique, as described by the author, is as follows: 1. From five to fifteen c. c. of sputum are shaken for five minutes with either an equal volume, or one half the volume of antiformin, depending on the density of the sputum. 2. Distilled water is added to mixture in proportion of ten parts to each part of antiformin. 3. To the resulting mixture is added a mixture of equal parts of acetone and ether, equal to the amount of water used, the whole is shaken for three to five seconds, and allowed to settle. It will be noticed that in about one minute three layers form; the upper consists of the ether; the middle of bacteria; and the lower of the antiformin solution and acetone. In three to five minutes the middle layer becomes thicker, and may be then used for the preparation of smears.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

August, 1912.

1. JULIUS FRIEDENWALD: Ulcer of the Stomach and Duodenum.
2. DOUGLAS VANDER HOOF: Diarrhea of Gastric Origin: Diagnosis and Treatment.
3. JOSEF F. BOWEN: Multiple Subcutaneous Hemangiomas, Together with Multiple Lipomas, in Enormous Numbers in Otherwise Healthy Muscular Subject.
4. A. A. STEVENS: Malignant Disease of Lung, with Special Reference to Sarcoma.
5. ROBERT A. COOKE: Paroxysmal Hemoglobinuria.
6. C. G. KERLEY and S. P. BEEBE: Delayed Development in Boy Treated with Thymus Gland.
7. JOSEPH M. KING: Acute Pancreatitis.
8. THEODORE B. BARRINGER, JR.: Effect of Cold Air upon Circulation in Healthy and Sick Individuals.
9. T. G. ORR: Leucocyte and Differential Counts in Ward and Open Air Treatment.
10. HUGHES DAYTON: Fatal Pneumothorax Following Exploratory Puncture.
11. THOMAS W. HASTINGS: Tuberculin Therapy in Surgical Tuberculosis.

1. Clinical Study of a Thousand Cases of Ulcer of the Stomach and Duodenum.—Friedenwald has found that 7.8 per cent. of all persons suffering from various gastric disturbances are affected with ulcers, the largest proportion of the latter occurring between the twentieth and fiftieth year of age, the number of males affected being twice that of females. In a large proportion anemia is present; in almost half there is a history of overindulgence in food or drink. Normal acidity is present in forty-six per cent., hyperacidity in thirty per cent., and subacidity in twenty-three per cent. Males more often have hyperacidity, females subacidity. The acidity is very high in recent ulcers, especially those accompanied by recent hemorrhage, while low acidity is the rule in chronic forms. Twelve years is the average duration of symptoms, the most prominent of which is pain, occurring in ninety-four per cent., and most frequently associated with hyperacidity. Pain immediately after taking food marks gastric ulcer, long after the ingestion of food, duodenal ulcer. Pain and other symptoms may be absent intermittently for periods of one to many months. Ninety per cent. of all cases have an epigastric tender area, in thirty-two per cent. the tender area is dorsal. Vomiting is present in sixty-seven, hematemeses in twenty-two per cent., and melena in fifty-one per cent. of the cases. Fifty-two per cent. are duodenal ulcers, forty per cent. gastric; the larger proportion occurs in males. Of the duodenal ulcers forty-eight per cent. present normal acidity, thirty-five per cent. hyperacidity, and sixteen per cent. subacidity; hyperacidity occurs more

often in males, and subacidity in females. Pain, present in 96.5 per cent. of duodenal ulcers, occurs mostly in cases with hyperacidity. Intermittions of pain and other symptoms occur also in this affection. Eighty-nine per cent. present epigastric tenderness, seven per cent. tenderness to the right or left of the median line. Vomiting is more frequent in cases with high acidity and occurs in about one fifth of all cases. Melena is present in fifty-four per cent. and occult blood in the stools in eighty-three per cent. No diagnosis of ulcer should be made if occult blood is not present in the stools.

5. Paroxysmal Hemoglobinuria.—Cooke reports a case which he has studied with a view of clearing up, if possible, some of the disputed points, and the observations reported are based upon experiments with the blood of this typical case. The serum contains a complex hemolysin which will dissolve the red blood corpuscles of the individual or others by means of the "cold warm" experiment. In all twelve examinations made at different times positive results were obtained. Autoantibody is absorbed from serum in the absence of complement, and is more or less completely but slowly dissociated when the temperature is raised. There is absorption of complement from active serum on exposure to corpuscle in the cold. It will join with antibody after the latter has united with corpuscle, but only under the influence of cold. Corpuscles sensitized with inactive serum show but slight hemolysis on the addition of complement as a result of complementoid inhibition. While there are as yet no observations on the presence or absence of the hemolysin after syphilitic treatment has caused the disappearance of the Wassermann reaction, it is apparently safe to state that syphilis is the chief, possibly the sole, etiological factor in paroxysmal hemoglobinuria, judging from clinical observation, the Wassermann reaction, the luetin test, and the serological studies in metasymphilitic disease.

6. Case of Delayed Development in a Boy Treated with Thymus Gland.—Kerley and Beebe report a case of delayed growth and development of the genitalia in a boy aged sixteen years. Fifteen grammes of desiccated thymus extract were given daily. Perceptible development of the genitalia was observed during the first six months of thymus medication, and after nine months' use the first erection occurred. After a year hair appeared on the pubis and in the axilla. A gain of one inch in height and eleven pounds in weight was noticed at the same time. Six months later there was a gain of three inches in height and 19.2 pounds in weight. Six other cases of retarded development are under the same treatment.

8. Effect of Cold Air upon the Circulation.—Barringer concludes, from a study of this subject in healthy and sick individuals, that exposure of the face to cold air by healthy adults is followed by a slight increase in the systolic blood pressure. This increase lasts for a varying length of time, and is often followed by a diminution to the initial level, although the exposure is continued. Per contra, in sixteen experiments on twelve adults, the subjects of different infections, the systolic blood pressure was markedly increased in two instances only, after exposing the patients to the action of cold air.

ARCHIVES OF DIAGNOSIS.

July, 1912.

1. MORRIS MANGES: Uses of Whispered Bronchial Voice.
2. EDWARD E. CORNWALL: Value of Antiputrefactive Diet in Differential Diagnosis of Conditions Producing High Blood Pressure.
3. HEINRICH STERN: Fat Heart: Aid to Its Early Recognition.
4. MAURICE FISHBURG: Clinical Significance of Albumin Reaction in Sputum.
5. M. H. FUSSELL: Modern Methods of Diagnosis.
6. BORIS SIDIS: Mental Factor in Diagnosis and Treatment of Functional Diseases.
7. W. G. GERRY MORGAN: Diagnosis of Gastric and Duodenal Ulcer.
8. J. W. WEINSTEIN: Some Diagnostic Points in Gastroenterology.
9. JOHN M. BELL: Dilatation of Ascending Colon.
10. I. I. WOLF: Functional Albuminuria from Diagnostic and Prognostic Point of View.
11. C. POSNER: Diagnostic and Prognostic Significance of Leucocytes in Urine.
12. BURDETT L. ARMS: "It's the Little Things that Count."

1. Uses of Whispered Bronchial Voice.—

Manges considers that the auscultation of the whispered bronchial voice has been undeservedly neglected in the routine of physical examinations. While this sign has the same physical basis and significance as bronchial breathing, it can at times afford more useful evidence than the latter: First, when patches of infiltration are small, scattered changes can be heard in the whispered voice long before the breathing becomes bronchial; second, whenever bronchial breathing cannot be elicited because deep breaths cannot be taken by the patient, as in recent hemorrhages, in the presence of severe pain or abdominal distention, and in certain women and children, the whispered voice is available; third, it is not transmitted to the sound lung, and hence cannot mislead. In pleural effusions, and for the recognition of early tuberculosis, Manges believes the whispered voice unsuitable. In hemoptysis, however, it should always be used; if the patient is seen for the first time it will readily show whether there is any lung infiltration without harming the patient. In pneumonia, it may be useful in directing attention to small areas of consolidation, but is especially valuable in cases where signs at the base of the lungs posteriorly are such that it is hard to tell which side is involved. Bronchial breathing, râles, and dullness may be elicited over a sound base, owing to transmission from the involved side or to hypostasis; the whispered voice, on the other hand, is neither transmitted nor influenced by posture, and according to its presence or absence a positive diagnosis may be made.

2. Antiputrefactive Diet in Differential Diagnosis of Conditions Producing High Blood Pressure.—

Cornwall reports cases illustrating the value of an antiputrefactive diet, already described elsewhere, in diagnosis. When the diet is given in a case with persistently high blood pressure, and the tension returns nearly to the normal and remains there, one can, as a rule, exclude any considerable amount of chronic nephritis or arteriosclerosis. Where the diet fails to reduce the pressure much below 200 mm. of mercury, advanced nephritis or sclerosis of arteries supplying vitally important regions of the body are reasonably sure to be present. Where a moderate reduction in pressure is caused, one may suspect arteriosclerosis or an early stage of chronic nephritis.

3. Early Recognition of the Fatty Heart.—

Stern points out a sign which is almost pathognomonic of fatty overgrowth or infiltration of the heart at a time when no symptoms are present. Normally, the heart sounds are more distinctly audi-

ble when an individual is in the erect position, and especially after moderate bodily exertion, than when he is recumbent. In the presence of fatty overgrowth, on the other hand, this difference is not at all or only in an insignificant degree perceptible. This is partly due to the fact that the fatty covering prevents the heart from swinging toward or away from the chest wall according to changes of posture, as it would normally. The patient lies flat on his back when the examination is started; auscultation is continued while he is standing, and concluded when he has jumped not less than thirty cm. from the floor ten to twenty times. The best results are obtained when such a uniform method of exercise is employed in all examinations.

4. Significance of Albumin Reaction in Sputum.

—Fishberg recommends the albumin test as a useful adjunct in all cases in which pulmonary tuberculosis is suspected, especially where the bacilli are slow in revealing themselves in the sputum. He found the test very useful and decisive in the differentiation of postgrippal bronchitis and tracheitis from tuberculosis. The material to be tested must be true sputum, not saliva, and must be examined on the same day. Acetic acid, three per cent., is added to the sputum, which is then repeatedly shaken during ten or fifteen minutes, and filtered. This removes mucus, though one or more repetitions of the addition of acid, shaking, and filtering are occasionally required before a clear filtrate is obtained. The latter is then boiled and some crystals of common salt, or a concentrated solution of it, added. If albumin is present, there results a curdy precipitate, which settles on standing. A positive reaction is not always decisive, as many nontuberculous diseases may lead to the presence of albumin in the sputum, but a repeatedly negative reaction, from specimens of sputum carefully collected, excludes tuberculosis. In cases of tuberculosis in which the reaction, after being positive, remains negative for some time, one may conclude that healing is taking place, even when the physical signs are slow in disappearing. Where the test becomes positive after being negative, there is surely to be found an acute exacerbation or an extension of the pulmonary lesion. In pulmonary emphysema a positive albumin reaction appears to indicate cardiac dilatation, thus showing the form of treatment to be pursued.

CLEVELAND MEDICAL JOURNAL.

August, 1912.

1. V. C. ROWLAND: Undescended Testicle.
2. S. W. KELLEY: Brief Visit to Some Hospitals of Italy.
3. R. H. BISHOP: Work of Division of Tuberculosis of Cleveland Health Department.
4. W. D. FULLERTON: Oral Sepsis with Special Reference to Antiseptic Action of Tobacco.

1. Undescended Testicle.—Rowland's paper is an excellent study of this anomaly and comprises the report of a rather unusual case, an historical account of the abnormality, consideration of its occurrence with reference to its frequency, side, and position, a discussion of its embryology, physiology, pathology, complications, and the several methods of treatment which have been adopted for its relief. The paper is not long, and while it presents but little that is new, it is a valuable and comprehensive presentation of what is known.

4. Oral Sepsis.—Fullerton gives the following

summary of the various conditions which may be caused by pathogenic bacteria through the mouth: 1. Infections, caused by a break in the mucosa, brought about by mechanical injuries, and leading to local or general disturbances, as abscess, caries, septicemia, pyemia, meningitis, osteomyelitis, and syphilis. 2. Infections through gangrenous tooth pulps, leading to local abscess, septicemia, pyemia, neuralgias, otitis, diseases of the eye, such as ocular spasm, strabismus, ptosis, miosis, retinitis, etc. 3. Disturbances from absorption of toxins. While the proteids are mixed with carbohydrates the oral bacteria do not attack them, or only very slightly. When the carbohydrates are exhausted, the proteids as met with in carious teeth, stomatitis, gangrenous pulps, retained food, or in the intestinal tract, are decomposed with the liberation of hydrogen sulphide, ammonia, carbon dioxide, indol, skatol, and other decomposition products, which when absorbed cause digestive disturbances, anorexia, nervous symptoms, etc. 4. Aspiration pneumonia, gangrene of the lung, putrid bronchitis, etc., may be caused by inspiration of mouth contents. Secondary infection of tuberculous cavities may have a similar cause. 5. Gastrointestinal disturbances from continued swallowing of bacteria and their products; excessive fermentation, chronic gastritis, and the like. This is easily understood when it is remembered that the mouth bacteria will liberate 250 c. c. of carbon dioxide and hydrogen from 500 c. c. of a beef extract and sugar solution. 6. Many local conditions, such as stomatocystitis, pyorrhea alveolaris, thrush, and gingivitis. Fullerton mentions the following bacteria as being found in every mouth: *Leptothrix inornata*, *Bacillus buccalis maximus*, *Leptothrix buccalis maximus*, *Iodococcus vaginatus*, *Spirillum putigenum*, *Spirochaeta dentium*. Frequently introduced are *Bacillus typhosus*, *Diplococcus lanceolatus*, streptococci, staphylococci, *Bacillus influenzae*, and *Bacillus tuberculosis*. From his own studies on patients and bacteriologically, and from the observations of others, Fullerton finds that one pipeful of tobacco is more destructive to cultures of bacteria than one "chew." He used cultures of *Bacillus coli*, *typhosus*, *cyaneus*, *violaceus*, *prodigiosus*, *pyocyaneus*, staphylococcus, and *Diplococcus pneumoniae*, and found that when subjected to tobacco juice for one hour from fifteen to ninety-eight per cent. were killed; for twenty-four hours, eighty-four to 100 per cent., the only exception being *Bacillus coli*, which repeatedly increased after being left for twenty-four hours in the juice. The tobacco smoke from three grammes of tobacco kills from thirty-one to 100 per cent. of the bacteria. These results are striking, but are not borne out to any such extent as might be expected by the examination of patients. While those who use tobacco are somewhat less affected by bacterial mouth diseases than are the nonusers, the difference is not great.

MILITARY SURGEON.

August, 1912.

1. LOUIS C. DUNCAN: Sherman's "March to the Sea."
2. ALLAN J. McLAUGHLIN: Modern Methods of Quarantine against Asiatic Cholera.
3. WESTON P. CHAMBERLAIN and EDWARD B. VEDDER: Report of Board for Study of Tropical Diseases in Philippine Islands. Quarter Ending December 31, 1911.

4. HENRY H. DOAN: Medical Department of Organized Militia Depends upon Intelligent and Enthusiastic Cooperation of Headquarters and Line for Satisfactory Sanitary Conditions in Camp.
5. ROBERT A. BACHMANN: New Method of Venereal Prophylaxis.
6. WILSON T. DAVIDSON: Venereal Prophylaxis.
7. H. H. SMITH: Scheme for Venereal Prophylaxis in Army Posts.
8. F. F. RUSSELL and HENRY J. NICHOLS: Experiments with A. and N. Tube to Determine Efficiency as Gonococcicide.

5 and 8. Venereal Prophylaxis.—Bachmann experimented in order to find a preparation that should possess the triple property of being a prophylactic against gonorrhea, chancroid, and syphilis. Post and Nicoll, having demonstrated in laboratory tests the comparative inefficiency of the organic silver salts in destroying gonococci, tricesol was finally selected and combined with calomel ointment. In one per cent. solution tricesol was found to kill not only the gonococcus, but also the streptococcus, pneumococcus, and typhoid bacillus after one minute's exposure. The combined ointment is used in tubes to which are attached soft rubber tips 1.5 inch long, for insertion in the urethra as soon as possible after exposure. Small tubes are provided for carrying in the pocket. The ointment was found, in actual use, an efficient prophylactic.—Russell and Nichols investigated the prophylactic value against gonorrhea of various ointments containing calomel by making cultures from the recently infected urethra before, and ten to fifteen minutes after the application of the disinfectant. A preparation made up of calomel, phenol, and hydrated wool fat proved ineffective; this was found to be due to its sticky character, which prevented it from spreading completely over the mucosa. Another preparation, however, consisting of three parts each of camphor and phenol, twenty-five parts each of calomel and wool fat, and rendered lard enough to make 100 parts, destroyed the gonococcal infection in all but one of eight cases. Solutions of organic silver salts, similarly tested, proved effective in a majority of instances.

JOURNAL OF TROPICAL MEDICINE AND HYGIENE.

August 1, 1912.

1. FRANK MILTON: Speculations on Life History of *Schistosomum hematobium*.
 2. LAWRENCE G. FINK: Mongolian Birth Marks.
- August 15, 1912.
3. LUCIUS NICHOLLS: Tropical Pellagra.
 4. MATTHEW D. O'CONNELL: Meteorology of Malaria.

3. Tropical Pellagra.—Nicholls reports from St. Lucia nine cases of a disease characterized by mental lethargy and depression, in some cases almost a wandering dementia; gastrointestinal disorder, with persistent diarrhea; erythematous eruption on the dorsum of the hands and feet, proceeding to superficial ulceration; great emaciation; tongue and gums red, clean, and spongy, with slight tendency to bleed; extreme anorexia; lessened coagulability of the blood. In every case a history of want and bad feeding was obtained. Nicholls believes the affection to be the same or very closely allied to the pellagra of Southern Europe. In these cases, however, maize could hardly have played an etiological rôle, for large amounts of maize are seldom eaten on the island. The atrophic condition of the organs observed in the two cases which came to autopsy, the small hemorrhages, the lessened blood coagulability, the absence of pronounced fever and of congestion of any organs, the presence of fatty degeneration similar to that seen in some cases of beri-

beri, and the condition of the mouth, indicate that the affection is more nearly allied to such diseases as scurvy and beriberi than to any germ disease.

REVUE DE CHIRURGIE

July, 1912.

1. H. NIMIER and A. NIMIER: Pathogenesis of Secondary and Temporary Facial Paralysis in Fracture of Mastoid.
2. V. CARLIER and MAURICE GÉRARD: Surgical Anatomy and Surgery of Horseshoe Kidney (*To be continued*).
3. H. GOUGEROT: Tuberculous Elephantiasis.
4. SVEN JOHANSSON: Spontaneous Ruptures of Spleen.
5. P. GORSE: Intramuscular Angiomata.
6. P. HALLOPEAU: Temporary Disarticulation of Last Two Metatarsals.

1. Origin of Facial Paralysis in Fracture of Mastoid.—Nimier and Nimier, referring to those cases of mastoid fracture in which facial paralysis supervenes some days after the trauma, and disappears completely after a certain time, analyze the various explanations which have been tentatively advanced to account for the condition, and conclude that the pathological change actually responsible is an extravasation of blood into the thickness of the nerve. The paralysis does not result directly from pressure of this blood on the nerve fibrils, but from reactive changes in the connective tissue network of the nerve, which occur secondarily and induce temporary degeneration of the axis cylinders. Proper repair of the latter is insured by the fact that the nerve is enclosed in a narrow bony canal.

3. Tuberculous Elephantiasis.—Gougerot reports a case in which a verrucose tuberculous condition of the sole of a foot, in a patient "scrofulous" since childhood, was followed by lymphangitis in the lower portion of the leg and a progressive sclerosing inflammation with edema. The ultimate result was a condition of elephantiasis, which in this case was manifestly of tuberculous origin.

4. Spontaneous Ruptures of Spleen.—Johansson reports a case of spontaneous rupture of the spleen in a patient suffering from gastric cancer and acute septic splenitis. Death took place soon after operation. Discussing spontaneous ruptures of the spleen in general, the author states that malarial enlargement of this organ is the most frequent predisposing condition, about forty such cases having been recorded. Next comes typhoid fever, and after this, relapsing fever, typhus, pregnancy, amyloid infiltration, miliary tuberculosis, hemophilia, leucemia, and hemorrhagic infarct of the spleen. In some cases a mere rise in blood pressure appears to have precipitated rupture of the organ. The prognosis in spontaneous ruptures is generally unfavorable. In about one half the cases death takes place within an hour; survival exceeding twenty-four hours is rare. The diagnosis can only exceptionally be made in the living subject, no symptom being pathognomonic. Johansson advises that in the presence of symptoms suggesting perforative peritonitis or intraabdominal hemorrhage in subjects with splenic enlargement, including typhoid fever cases, the possibility of spontaneous rupture of this organ should be kept in mind and operation resorted to without delay. Where a typhoid or septic spleen ruptures, the most prudent plan is to remove the organ and treat the peritonitis by the usual methods. The field of splenectomy in malaria should be extended, owing to the great danger of rupture of the organ in this disease.

6. Temporary Disarticulation of Metatarsals.—Hallopeau describes the operative procedures carried out by him in a case of tuberculosis of the joint between the cuboid and fifth metatarsal bones. After opening the joint the last two metatarsals were reflected laterally. A considerable portion of the cuboid was then removed, the bases of the reflected metatarsals curetted, fungous growths in the plantar region excised, the metatarsals replaced, and the wound closed without drainage. Ultimate recovery with good functional result took place.

KLINISCHE MONATSBLÄTTER FÜR AUGENHEILKUNDE

August, 1912.

1. J. KOMOTO: Deafness with Sympathetic Ophthalmia.
2. E. RUEBEL: Enlargement of Blind Spot (van der Hoeve's Symptom) and Central Scotoma in Diseases of Posterior Accessory Sinuses of Nose.
3. K. LANGENBECK: Forms of Visual Field in Tabetic Atrophy of Optic Nerve.
4. GROES-PETERSEN: Retinchorioiditis.
5. M. BARTELS: Ocular Movements Excited by Aural Apparatus.
6. J. VAN DER HOEVE: Injuries of Eye from Blank Cartridges.
7. A. NATANSON: Evulsion Nervi optici.
8. ED. ROSENHAUCH: Papilloma of Corneal Limbus.
9. J. ISAKOWITZ: Work of Dr. Robert Hesse, The Contraction of the Pupil in Looking at Near Objects.

2. Enlargement of the Blind Spot and Central Scotoma in Diseases of the Posterior Accessory Sinuses.—Ruebel reports four cases in which the symptoms named regressed after opening and draining the posterior ethmoidal cells, and, in one case, the sphenoidal sinus.

5. Ocular Movement Excited by the Aural Apparatus.—Bartels gives a very interesting study of the nystagmus induced through the aural apparatus, which has been utilized of late by otologists as a means of determining the condition of the labyrinth, and still more lately by ophthalmologists to locate the site of a lesion in the central nervous system. It deserves translation rather than abstract, for the valuable points cannot be brought out briefly. First comes a study of the anatomy and physiology of the connection between the eye and the ear, in which he says that each labyrinth has the tendency to turn and roll both eyes to the opposite side when in a state of rest; the right labyrinth tends to turn both eyes to the left, the left labyrinth to turn them in the opposite direction; at the same time each tends to produce a vertical deviation of the eye on the same side upward and of the other eye downward; in other words, there is a labyrinthine tone of the ocular muscles. The movement of the lymph in each semicircular canal excites movements of the eyes in the plane occupied by that canal, and the movements of the eyes which are primarily excited by the labyrinth take place in the direction of the current of lymph in the semicircular canals. Nystagmus in general is of two forms, in one in which the eye swings between two points with equal rapidity in both directions, the other in which the movement back to the point of starting is the more rapid. The latter is generally known in English as a nystagmoid movement. An aural nystagmus is always nystagmoid, but a nystagmoid movement is not always aural. The various forms of nystagmus are known: 1. According to the plane of the movement, horizontal, vertical, rotary, and diagonal; 2, as spontaneous, when not due to a perceptible optical or aural stimulation; 3, as fixation, when induced by fixing the eyes on an object; 4, according to the nature of the stimulation; i, rotation nys-

tagmus, (a) primary, during and in the direction of the rotation, (b) secondary, after the rotation and in the opposite direction; ii, thermic or caloric, (a) to cold toward the opposite side, (b) to heat toward the same side; iii, compression, (a) by increase of air pressure toward the same side, (b) by decrease of pressure toward the opposite side; iv, galvanic, (a) with the anode toward the opposite side, (b) with the cathode toward the same side. The duration of the fluctuations, their number in a unit of time, and their amplitude must be taken into account. The practical application of nystagmus for purposes of diagnosis is considered at considerable length. Under pathology of these movements disease of the ear is dealt with first, then the influence of diseases of the ocular muscles and of the nervous system, then the absence of nystagmus in diminished function of the higher centres, then the influence of the ear over anomalies in the position of the eyes of unknown origin. Finally, the reflex tracts for these movements, so far as they are known, and also the hypothetical, are portrayed.

7. *Evulsio nervi optici*.—Natanson reports a case in which the optic nerve was torn backward out of the eye as the result of a blow.

Proceedings of Societies.

TWELFTH ANNUAL MEETING, CANADIAN ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS.

Twelfth Annual Meeting, Held in Toronto, May 20 and 21, 1912.

The President, J. GEORGE ADAMI, M D, F. R. S., in the Chair.

President's Address.—Dr. J. GEORGE ADAMI referred to the fact that this was the fourth year in succession that he had occupied the position of president. He said that even upon so large a subject as the campaign against tuberculosis, with all its issues and side issues, there was a limit to what the individual could talk upon that was not absolutely commonplace, and that his only consolation was that after all the saying of something fresh was not a necessary function of the presidential post. He was of the opinion that the question of tuberculosis had to be approached from the scientific side. It was essential for us to be sure of our cases and to make our diagnoses by the most modern and accurate bacteriological methods, and in Toronto the university had come to the aid of the city and the State. It used to be thought that the university had done its duty if in its laboratories it trained the physician. Dr. Frank Wesbrook had developed a better path. As professor of bacteriology in the State University of Minnesota, he had realized the duty of the State university to the State in the matter of hygiene. He had thrown the laboratory open to the State board of hygiene and had become an active member of the board; he had cooperated so cordially with the board that he had made the university laboratory of bacteriology the place in which all the State bacteriological investigations were conducted. In fact the university

laboratory had become the centre from which the medical men of the State obtained expert bacteriological advice, and rapidly Minnesota was becoming the model in this direction upon which other States were forming themselves. A prominent man of Melbourne, Australia, had told him that if it had not been for the efforts of members of the national council of women in Australia several greatly needed sanitary reforms might not have gone through. This was especially the case so far as the milk situation in Melbourne was concerned. He therefore thought that the assistance of the women of Canada was absolutely necessary in order to carry the campaign against tuberculosis to a successful issue. Private philanthropy was insufficient for the great task of waging a successful campaign against tuberculosis, and governments and municipalities must take more of the burden upon themselves.

He would lay special stress upon the crowded tenement house and the dirty condition of districts in cities as important factors in the propagation and spread of pulmonary tuberculosis. In impoverished families, impoverished often through the enfeeblement of breadwinners affected with the disease, it was often impossible to afford a separate room for the invalid. Too often other members of the family used and even slept in the room with the patient, and insidiously but surely other members of the family became infected. These were the main foci of infection. It was these cases that economically inflicted the greatest loss upon the community, for they perpetuated the disease; segregate them and they were harmless. Disraeli said that public health was the foundation upon which rested the happiness of the people and the power of the State. Take the most beautiful kingdom, give it intelligent and laborious citizens, prosperous manufacturers, productive agriculture; let arts flourish, let architects cover the land with temples and palaces; in order to defend all these riches have first rate weapons, fleets of torpedo boats; if the population remained stationary, if it decreased yearly in vigor and in stature, the nation must perish. And that was why he considered that the first duty of a statesman was the care of public health. The speaker ventured the hope that these sentiments would animate the powers that lay in all our parliaments, and his conviction was that when they did we could assuredly look for a great decrease in the death rate from tuberculosis, which was the greatest of all.

Notification of Phthisis.—Dr. D. A. CRAIG, of Lake Edward, P. Q., said that there should be systematic control of tuberculosis. A notification system could be carried on very successfully. Some of the advantages were that the sufferer was at once placed in a position to receive attention and became, instead of a source of infection, a focus of prevention.

Modern Public Health Teaching.—Dr. F. F. WESBROOK, of the University of Minnesota, declared that public support should be withdrawn from newspapers which continued to furnish impossible news stories with patent medicine advertisements of charlatans and quacks. It was true that people ceased to be voluntarily drugged and murdered. The tendency of the disease to spread had no rela-

tion to its severity. They had paid a high price in cash and a higher price in loss of health by permitting congestion and herding in cities. It was man versus microbe and environment. Complications had been imposed by society, because everything had been planned in terms of the mass rather than of the individual. Hospitals should be regarded neither as monuments to donors, nor as tributes to the artistic genius of architects. What were needed in the fight against tuberculosis were a scout service, backed by public funds, to conduct investigations, and better trained physicians and officers. Efficient officers should be trained at the public expense.

Social Aspects of Tuberculosis.—**Mrs. ADAM SHORTT**, of Ottawa, said that the initial step toward the prevention of tuberculosis was a thorough system of medical inspection of children. There should be medical inspection of all workshops and factories. This would give a detected case a chance of cure, and it would prevent the spread of the disease to the coworkers. It would also be a quick educative way to more hygienic conditions in such places. The housing of masses, particularly in large cities, was a great problem. The fearful prevalence of tuberculosis in many of the tenement house districts of large cities demanded attention. Every collection of dark, foul, unventilated tenements was a "lung block" dealing death to those who by economic necessity, not from choice, must live there and call these disease breeding houses by the name of home. Why, if we knew that over 300 houses in one city were unfit for habitation, and over a thousand in another city were reported as overcrowded, or we knew of such districts as the "lung block" in New York, why did we not raze them to the ground and turn up the infected soil to the sunshine and fresh air of heaven, leaving open spaces, where children might grow to healthy manhood and womanhood and not wither to premature decay? Why, if we were endangered by our water and milk supply, did we not immediately remove the danger? Why did we not round up the ever growing class of the feeble minded and segregate them? Because there were two great giants greater than humanity, the name of one being commercial interests, and the name of the other political in expediency.

Administrative Control of Tuberculosis.—**Dr. HERMANN BIGGS**, of New York, pointed out that health was a purchasable commodity. Any community could determine its own death rate, in so far as it adopted sanitary measures and methods. A thorough system of notification and legislation of tuberculosis cases was the first thing necessary in a large city. New York had now the most complete scheme of any large city of the world. Last year 66,000 cases of tuberculosis were reported to the medical health department. They had also a bacteriological laboratory wherein 41,000 examinations of sputum were made last year. Disinfection and renovation of premises were compulsory and done by owners of houses at their own expense. In a very large number of cases the owners voluntarily renovated their apartments. Every case of tuberculosis that came under the notice of the department was visited either by a physician or a nurse,

and periodical disinfection was made. Another prominent feature of their work was the extension of relief to tuberculous families. This was not done directly through the department, but by charitable auxiliary organizations. The inspection of lodging houses had brought fruitful results, as these were fine breeding places for the bacilli. A certain amount of supervision was exercised by the department over private cases.

The Pretuberculous Stage.—**Dr. R. C. PATERSON**, of St. Agathe, Que., wished to make it clear that he did not believe it possible to recognize a true pretuberculous stage, or to know whether or not a person was predisposed to tuberculosis until such time as they showed symptoms of the infection. The bacilli might and probably did remain latent in the tissues for a short time, causing only a slight hyperplasia before producing specific tubercles, but in this stage there was no means of recognizing their presence clinically. This was the true pretuberculous stage. The causes which were operative in the step from latency to activity were those which were so often spoken of as resulting in tuberculosis, overwork, mental worry, excesses, acute illnesses, neglected colds, exposure to damp and cold, improper food, etc. These were all contributing causes and so lowered the resistance that the ever present tubercle bacillus became active. As a result of such conditions, we got a period of vague and indefinite general symptoms which were the forerunners of definite lung trouble. During this period diagnosis could often only be arrived at by the exclusion of all other possibilities. In other cases we reached our diagnosis by a careful study of the history of the patient, correlating this to the symptoms.

Ninety per cent. or more of humanity could be divided into four classes as regards tuberculosis: 1. Those who were infected without showing any evidences of it during life. 2. Those whose infection gave slight indefinite symptoms, easily recovered from with a few months of hygienic life. 3. Those who would recover with six months or longer of most careful treatment. 4. Those who would not recover, no matter what the treatment. These last need the care of "incurable homes." The third group were the sanatorium cases, while the second were the ones to whom reference had been particularly made in this paper and who were usually neglected till they passed into the third or fourth process. While in the condition of those in the second group, treatment was inexpensive and of short duration, later on it took more time and money, both for the individual and for our institutions. Much stress in the antituberculosis campaign had been laid on the dangers of infection and how these might be avoided, but the incontrovertible fact remained that practically every adult was, or had been infected, and if some of our energies were directed to keeping these infected persons from breaking down and incurring pulmonary tuberculosis, and in raising their powers of resistance, the results would be even more gratifying than at present and the mortality from tuberculosis would in a few years show a more marked decrease than it had during the past decade.

Rest and Exercise in the Treatment of Tuberculosis.—**Dr. OLIVER BRUCE**, of London, Eng-

land, said that a patient, with advanced disease, showing a high temperature every evening in spite of being at rest in bed, was undergoing a series of excessive autoinoculations, accompanied by a fluctuating opsonic index. This meant that the dose of poison thrown out by his germs into the blood stream was so great that an insufficient amount of protective substance was formed. If the opsonic index of such a patient was examined at certain intervals over a period of twenty-four hours, it would be found that when his temperature was high, his opsonic index would be low, and vice versa. The opsonic index, in other words, varied inversely with the temperature. This was a most important point which was brought to light in the course of over 300 blood examinations performed by Doctor Bruce and Doctor Inman at the Brompton Hospital. For in regulating the amount of exercise to be prescribed in graduated labor, some guide was necessary, some indication as to the amount of protective substances which were being elaborated as the result of the exercise. It would be found far too laborious a task to have to take the opsonic index as a guide, and this knowledge enabled us to substitute for it the temperature chart. The clinical symptoms and feelings of the patient, however, must be very carefully studied at the same time.

We had then two main facts to work on, that the amount of opsonin or antibody in the blood could be raised by exercise and that the temperature chart and feelings of the patient were a sufficient guide to an experienced observer as to whether the amount of exercise prescribed was too great or too little. Patterson had fixed the danger mark, the point signifying excessive autoinoculation, at 99° F. in the case of men and 99.6° F. in the case of women. Our first object, therefore, was to reduce the temperature to below this point, and this, of course, we did by rest in bed.

Our ultimate object was to raise the patient's opsonic index above the normal line, and this we did by means of exertion. The exertion, however, must not be too great, or the output of toxine would swamp the tissues and an exactly opposite result to that which we desired would occur. At the Byron Sanatorium, during the winter months, he had instituted the following forms of work: Collecting small wood into heaps for kindling purposes, sawing trees into lengths with a crosscut saw for burning in the various furnaces, and shovelling snow. Now more out door work was possible and the men were employed in various forms of gardening, the women in removing stones from ploughed land, weeding, and hoeing. Dumb-bell exercise and skipping, too, had proved a very useful form of exercise for both sexes as an adjunct to outdoor work. The patient should be gradually immunized to known forms of labor until finally he was able to work for six hours a day at the most strenuous exercise that could be found for him without any rise of temperature. At the same time, the work, if possible, should always have some aim and object, apart from its curative function, or it would become monotonous and tedious. It would be an ideal state of affairs if, at the conclusion of the treatment of every consumptive, a series of indices could be taken to determine if the

hardest work was having any effect at all on his antibacterial output. If any of the indices proved to be abnormal, then further treatment would be indicated, but if not, then the patient might return to his occupation without fear.

To sum up, the graduated labor system of treatment was an effort at the scientific cure of the consumptive. It aimed at raising the amount of antibacterial substance in his blood to as high a degree as possible, and keeping it there by gradually increasing doses of his own tuberculin.

Aftercare of the Consumptive.—Dr. C. D. PARFITT, of Gravenhurst, recalled that the aftercare of the consumptive was a social as well as a family and personal problem, with the delayed recognition of the disease that obtained at present. From one quarter to two fifths of those reasonably well treated were able to work part or full time. There was need for reasonable consideration and willingness to help upon the part of employer and fellow employee. The former should be willing, and very often was willing, to grant time for a temporary "lie up" when relapse might threaten, and make the worker with uncertain health free from anxiety about losing his place. The fellow worker should be kinder than he often was to one who had been named consumptive.

For the social worker there was great opportunity in the aftercare problem. The care of the family when means were lacking until the bread winner could safely get back to work, was of first importance. Bureaus of information regarding the possibilities of suitable employment were needed. The provision of night camps for the worker without adequate house facilities, with good meals at the beginning and end of the day, and of a farm colony, in which supervised labor hardened the convalescent, too soon discharged from the sanatorium, should be responsibilities for the municipality. Likewise the provision of adequate dispensaries with visiting nurses for the continued supervising of the discharged cases, fresh air schools, and hygienically built houses were municipal responsibilities, as necessary to solve the problem of the aftercare as that of prevention. In the aftercare problem the patient, by exercising consistent watchfulness and self restraint, must, to a great extent, himself be master of his fate, but we, the public, made up of relatives, friends, employers, fellow employees, and physicians, had our share of responsibility, in lessening the "menace of the fears" and in helping his "unconquerable soul."

Annual Report of the Association.—Dr. GEORGE D. PORTER, of Toronto, secretary of the association, presented the 12th annual report, in which he reviewed the progress of the campaign against tuberculosis in all parts of the Dominion. The best results were evident in those districts in which there had been cooperation between the government, the municipality, and the local societies. There were various agencies at work in each Province, but it must not be supposed that these were sufficient weapons against tuberculosis, for while its proper care was of the utmost importance and segregation of advanced cases imperative, the disease could not be properly controlled until they had improved those conditions favoring its spread.

Election of a President.—The Honorable ADAM BECK, of London, Ontario, was elected president of the association for the ensuing year.

Letters to the Editor.

TOXIC EFFECTS OF MAGNESIUM SULPHATE.

NEWTON, ILL., September 12, 1912.

To the Editor:

I desire to call the medical profession's attention to the toxic effect of magnesium sulphate on the heart's action. I have had but two cases where I have recognized this effect. One in a woman, aged fifty-two years, of rather nervous temperament, no heart lesion discernable, who received about two drachms of magnesium sulphate in a half glass of hot water on an empty stomach. About an hour afterward, I found her suffering from extreme dyspnea and feeble, radial pulse. A hypodermic injection of strychnine nitrate, grain 1/60, relieved the symptoms in a short time. As I could find no other cause for the sudden and alarming dyspnea with the feeble pulse, I could attribute it to nothing but the possible toxic effect of the magnesium sulphate. Having occasion to prescribe for the same patient, a few weeks afterward, for an attack of slight diarrhea, I thought I would again use the magnesium sulphate to confirm my theory of its toxic effect in her case. I gave her a heaping teaspoonful in about one third of a glass of hot water. In about twenty minutes the same symptoms of dyspnea and rapid, feeble pulse manifested themselves, and I again resorted to the use of the strychnine nitrate, grain 1/60, hypodermically, with good results.

The other case happened some two years ago, and, while not recognized as a possible poisoning from this same commonly used drug, I feel now that the patient (a boy of thirteen years) was very susceptible to the toxic influence of magnesium sulphate, and I failed to diagnose the cause.

JAMES P. PRESTLEY, M.D.

THE OPERATIVE FIXATION OF FRACTURES.

NEW YORK, September 14, 1912.

To the Editor:

In the JOURNAL for August 12, 1912, there is a letter by Walter H. Taylor, M.D., in which I am criticised for what he considers insufficient accuracy in referring to a paper written by him. As a matter of fact, on page 186 of the July number of the *Annals of Surgery* I have given the essential point of Taylor's method in the following words: "Taylor put drills into the bone before placing the fragments in position and regardless of alignment." Further details of the method follow, and in the bibliography at the end of my article will be found the reference to Doctor Taylor's paper. I feel quite certain that no one less sensitive than Doctor Taylor could find fault with the manner in which credit was given and I sincerely regret that I have unintentionally hurt his feelings.

HOWARD LILIENTHAL.

A FALLACY IN FECAL ANALYSIS.

BUFFALO, N. Y., September 21, 1912.

To the Editor:

In the routine analysis of feces, the following three tests are carried out: 1. *Blood*. Feces, plus guaiac tincture, plus hydrogen peroxide, with various modifications to prevent action of other oxidases; result, blue color, or bluish green if very little hemoglobin is present. 2. *Indol*. Feces, plus dilute sodium nitrate solution, plus sulphuric acid; result, chocolate color. 3. *Hydrobilirubin*. Feces, plus mercuric chloride solution; result, orange color.

In several cases, all three tests have resulted in a nearly uniform green color. As might be expected from the fact that all three tests involve oxidizing agents, this reaction is apparently due to unchanged biliary pigment, undergoing oxidation to biliverdin. With Gmelin, or iodine plus

potassium iodide solution, the characteristic biliary pigment reaction is obtained. In the cases noted thus far, there has been more or less diarrhea, accounting for the persistence of unchanged biliary pigment by rapid passage through the bowel.

Blood can be tested for by the phenolphthalein reagent, but information is desired as to substitute tests for indol, and also to determine whether hydrobilirubin is present as well as original bile pigment.

A. L. BENEDICT, M.D.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Der primäre Lungenherd bei der Tuberkulose der Kinder. Von Dr. ANTON GHON, o.ö. Professor der pathologischen Anatomie an der deutschen Universität in Prag. Mit 72 Textabbildungen, 1 schwarzen und 1 farbigen Tafel. Berlin und Wien: Urban & Schwarzenberg, 1912. Pp. 143. (Price, \$2.15.) (Through Reiman Company, New York.)

This publication represents an investigation carried on by the author, to determine the method of infection in primary tuberculous foci in the lungs of children. To this end he reports the results of 170 cases of tuberculosis in children in which he performed autopsies. Brief protocols of some two thirds of the cases are given. In the introduction the author briefly reviews papers by Kius, E. Albrecht, and H. Albrecht, who had already done somewhat similar work. In summing up the significance of the pulmonary foci Ghon states that the changes in the lung in no instance show an earlier condition than the tuberculous processes in the lymph nodes; also that the flow of lymph is not from the injected lymph node to the focus in the lung. Consequently, he concludes that the pulmonary foci in children cannot be considered to be due to retrograde lymphatic infection; that they are always the source of the alterations in the regional lymph nodes. Hematogenous infection is asserted to be ruled out in the foregoing cases and therefore no other way than aerogenous infection remains. This alone explains in a satisfactory manner and in no way stands in opposition to the questions of tuberculosis.

In addition to these, fourteen cases are reported in which foci could not be found in the lung. The final statement made is that in children primary infection of the lung is the common form of tuberculosis. The monograph is very interesting and well worth reading. In the light, however, of experimental research in feeding dust and coloring matters to animals one still has to consider the question as not yet settled. Aerogenous infection does, nevertheless, seem to be extremely likely.

Preventable Cancer. A Statistical Research. By ROLLO RUSSELL. London, New York, Bombay, and Calcutta: Longmans, Green, & Co., 1912. Pp. vii-167. (Price, \$1.50.)

As there are no letters to indicate any professional degree, one must conclude that the author is not a graduate in medicine. With this as a starting point one can readily appreciate the lack of accurate information that is apparent on many pages. It is difficult, however, to understand the temerity of venturing into a field where a certain degree of knowledge of normal biological processes, not to mention the abnormal, is essential. After reading the volume it becomes very evident that the writer holds a brief for total abstinence and vegetarianism. No fault need be found on that basis, but exception can be taken to having them considered as the true and most valuable means of combating the ills to which human flesh is heir.

In the preface the author calmly states that "He has dealt less with the causes of cancer in women than in men, because he thinks that they would require some acquaintance with gynecology"; rather a naive admission. To quote sentences independent from the text is always open to question, but some leave no doubt as to the meaning.

"The influence of alcohol on the incidence of cancer is really important. The cancer incidence in any trade varies with the attendant habits as regards alcohol." In another place the following occurs in relation to statistics. "In cancer, excluding carcinoma"—little more need be said concerning the author's scientific knowledge of malignant growths. In regard to cancer of the liver there is no understanding of the fact that such a condition is a secondary and not a primary involvement. It is dealt with as a primary growth. Again, we are informed that "These observations accord with many others which tend to connect a rheumatic condition, and a daily fare causing rheumatism with predisposition to cancer." "Appendicitis seems to some extent to depend on the same elements as cancer, though some other factors . . . possibly cause a large number." "It seems likely that appendicitis may be added to the long list of maladies affecting flesh eaters most calamitously." "The very close connection of the digestive organs with the blood, tissues, and skin, and with the uterus in woman, permits cancer to appear in various parts of the body though the original mischief or causation of susceptibility may have arisen in those organs." The author quotes a medical writer who states "that there is the closest connection between the uterus and stomach," and adds the following: "This seems to have a bearing upon the fact, that while cancer of the stomach is commonest in men, cancer of the uterus is commonest in women."

To take up all the novel statements that are made would require many pages, but the foregoing will indicate the type of the book in question. It is written by a man totally unfamiliar with his subject and one who wishes to prove his point by employing information from other persons irrespective of its accuracy or scientific basis.

The Mechanistic Conception of Life. Biological Essays.

By JACQUES LOEB, M.D., Ph.D., Sc.D., Member of the Rockefeller Institute for Medical Research. Chicago: The University of Chicago Press, 1912. Pp. 232.

The profession, as well as every one interested in biology, will thank the author and the publishers for collecting these essays and placing them before the reading public, where they will be more accessible than when distributed among several journals.

The author does not need an introduction, his work is so well known. The present book contains ten essays: Mechanistic Conception of Life, Significance of Tropism for Psychology, Fundamental Facts and Conceptions Concerning Comparative Physiology of the Central Nervous System, Pattern Adaptation of Fishes and the Mechanism of Vision, Facts and Principles of Physiological Morphology, Nature of the Process of Fertilization, Artificial Parthenogenesis, Prevention of Death of the Egg through the Act of Fertilization, Role of Salts in Preservation of Life, and Experimental Study of the Influence of Environment on Animals. This recapitulation of the title shows how well the articles have been selected to give an idea of Loeb's work. A short index adds to the value of the book.

A Dictionary of Medical Diagnosis. A Treatise on the Signs and Symptoms Observed in Diseased Conditions. For the Use of Medical Practitioners and Students. By HENRY LAWRENCE McKISACK, M.D., M.R.C.P. Lond., Physician to the Royal Victoria Hospital, Belfast, Second Edition. New York: William Wood & Co., 1912. Pp. xi-590. (Price, \$4.25.)

The author's aim is to present in alphabetical order the symptoms encountered in nonsurgical disorders, hence the title, a dictionary of diagnosis. He justly holds that too little time is, as a rule, devoted to symptomatology, and offers the work reviewed as an aid to those who are desirous of improving their practical work in this direction. It is the product of his habit of noting for his own use and for teaching purposes, not only the morbid phenomena witnessed in the sickroom, but also, wherever possible, their significance. Hence the fact that in many instances the physiology, pathogenesis, and pathology are briefly reviewed along with the symptomatology of a given disease. On the whole, Doctor McKisack's plan has been well carried out, and his work cannot but prove an efficient complement to medical textbooks, its avowed purpose.

Das Heufieber und verwandte Störungen. Klinik der Idiopathien. Von GEORG STICKER, Doct. et Prof. Med. in Bonn. Zweite, gänzlich umgearbeitete Auflage. Mit 2 Tafeln. Wien und Leipzig: Alfred Hölder, 1912. Pp. v-194.

Hayfever is a name given to a number of idiopathic diseases (fevers), which have all the same symptoms, coryza, catarrh, with or without sneezing, or asthma, appearing at a certain season, and of similar etiology, or again it applies only to a disease of this class which takes in only one subdivision caused by the pollen of hay. The book before us treats in two parts hayfever proper and hayfever generalized or known by other names, such as rose cold, etc. The author gives a very scientific review of all these diseases, illustrated with case histories, and with a good list of references. The treatment of hayfever covers twelve pages; many preparations are mentioned, but no specific has been found, and the treatment still remains disappointing.

Physiology. A Manual for Students and Practitioners.

By A. E. GUENTHER, Ph. D., Professor of Physiology in the University of Nebraska, and THEODORE C. GUENTHER, M.D., Attending Physician, Norwegian Hospital, and Visiting Physician, Tuberculosis Clinic of the Bay Ridge Hospital, Brooklyn. Second Edition, Thoroughly Revised. Illustrated. Philadelphia and New York: Lea & Febiger, 1912. (The Medical Epitome Series.) Pp. viii-260.

This little book, though belonging to an "epitome series," is more readable than the average compend. As stated, it is intended as a means of reviewing quickly the essential features of the subject and is, therefore, suitable for physicians as well as for students. Each chapter terminates with a series of questions to facilitate self examination.

Pellagra. History, Distribution, Diagnosis, Prognosis, Treatment, Etiology.

By STEWART R. ROBERTS, S.M., M.D., Associate Professor of the Principles and Practice of Medicine, Atlanta College of Physicians and Surgeons, Atlanta, Ga., Physician to the Wesley Memorial Hospital, etc. With Eighty-nine Special Engravings and Colored Frontispiece. St. Louis: C. V. Mosby Company, 1912. Pp. 272. (Price, \$2.50.)

This treatise comes at an appropriate time; interest in the affection is steadily increasing in this country as more and more cases are being reported. Among the many excellences of the volume is a map of the world exhibiting the geographical distribution of the disease; and the southern and south central portions of the United States show as the second largest area affected, the largest being, obviously south eastern Europe. Many illustrations show the changes in the skin and in the internal organs. As regards the etiology the author is necessarily non-committal; but he discusses them at length, leaving the future to decide whether it is an infection or an intoxication. The advocates of the corn theory have had a hundred years, and have not made out their case; Sambon's infection theory has certainly made a profound impression, but lacks proof. Meanwhile this volume presents in accessible form practically all that is known of the disease and will be of great value to dermatologists and practitioners in the affected districts, who would otherwise have to collect it from a hundred scattered monographs and articles.

The Care of the Skin in Health. By W. ALLAN JAMIESON, M.D., F.R.C.P.E., Knight of Grace of St. John of Jerusalem, Surgeon to the King's Body Guard for Scotland, the Royal Company of Archers, etc. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1912. Pp. 109.

In a little over one hundred pages Jamieson considers the structure of the skin and its care, the care of the hair and nails, and clothing and diet as related to the health of our integumentary covering. With a small page, large type heavily leaded, and very thick paper the matter contained in the volume is small; thus the chapter on clothing and diet contains only some 3,000 words. Within these limits the subject is treated as fully as possible; but the book is evidently written for popular circulation among the laity, and not for the medical practitioner.

Meetings of Local Medical Societies.

TUESDAY, October 1st.—New York Academy of Medicine (Section in Dermatology); New York Neurological Society; Long Island Medical Society; Buffalo Academy of Medicine (Section in Surgery); Ogdensburg Medical Association; Syracuse Academy of Medicine; Medical Association of Troy and Vicinity; Hudson County, N. J., Medical Association (Jersey City); Bridgeport, Conn., Medical Association.

WEDNESDAY, October 2d.—Brooklyn Society for Neurology; Society of Alumni of Bellevue Hospital; Harlem Medical Association, New York; Elmira Academy of Medicine; Schenectady Academy of Medicine.

THURSDAY, October 3d.—New York Academy of Medicine; Brooklyn Surgical Society; Practitioners' Club, Buffalo; Geneva Medical Society; Dansville Medical Association.

FRIDAY, October 4th.—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Gynecological Society, Brooklyn; Manhattan Dermatological Society; Practitioners' Society of New York; Corning Medical Association; Saratoga Springs Medical Society

Official News.

Public Health Service Health Reports:

The following cases of and deaths from cholera, yellow fever, plague, and smallpox were reported to the surgeon general of the United States Public Health Service during the two weeks ending September 20, 1912:

CHOLERA—FOREIGN: Dutch East Indies (Java), July 28-Aug. 3, cases, 2 deaths; India, present; Japan (Formosa), July 29-Aug. 3, 9 cases, 3 deaths; (Nagasaki), Aug. 10-13, 2 cases; Straits Settlements, July 21-27, 3 cases, 1 death.

YELLOW FEVER—FOREIGN: Brazil, Aug. 11-24, 3 cases, 1 death; Mexico, Aug. 24-Sept. 7, 8 cases, 3 deaths; Venezuela, Aug. 10-31, 5 cases, 4 deaths.

PLAGUE—INSULAR: Philippine Islands (Manila), Aug. 4-10, 2 cases, 2 deaths; Porto Rico (San Juan), Sept. 12, 1 case.

PLAGUE—FOREIGN: Chile, July 28-Aug. 10, 4 cases, 1 death; China, present; Morocco, Sept. 12, 1 case; Turkey, June 16-July 6, 2 cases, 2 deaths.

SMALLPOX—UNITED STATES: Arizona, May 1-31, 3 cases; June 1-30, 1 case; July and August, no cases; Connecticut, Aug. 1-31, 1 case; Hawaii, Sept. 13, 1 case, 1 death; Iowa, Aug. 1-31, 10 cases; Massachusetts, Aug. 1-31, 5 cases; Michigan, Aug. 1-31, 9 cases; Montana, June 1-30, 5 cases; July 1-31, 3 cases; Oregon, May 1-31, 44 cases; June 1-30, 60 cases; Virginia, July, no case; Aug. 1-31, 19 cases; Wyoming, June 1-30, 1 case.

SMALLPOX—FOREIGN: India, present; Italy, Aug. 11-17, 1 case; (Venice), Jan. 1-March 31, 40 cases, 9 deaths; Mexico, March 4-Sept. 8, 30 cases, 25 deaths; Straits Settlements, July 21-27, 3 cases, 1 death; Turkey (Constantinople), Aug. 19-25, 9 deaths; (Dardanelles), July 27-Aug. 24, 6 deaths.

Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending September 18, 1912:

Bailhache, Preston H., Surgeon. Directed to report at the Bureau Monday, September 16, 1912, to the chairman of a board of medical examiners for examination as to his present physical condition. **Bogges**, John S., Passed Assistant Surgeon. Relieved from temporary duty at the Hygienic Laboratory in time to arrive at the Mobile Quarantine Station about September 20, 1912, and take charge of the station during the absence of Passed Assistant Surgeon L. D. Fircks on official duty. **Collins**, G. L., Passed Assistant Surgeon. Granted four months' leave of absence, with pay, to begin about December 15, 1912, and without pay for a period of six months thereafter. **McLaughlin**, A. J., Passed Assistant Surgeon. Directed to proceed to West Point, Va., to investigate two cases reported by the commissioner of health as suspicious of being cholera. **Small**, Edward M., Acting Assistant Surgeon. Granted thirty days' extension of annual leave, from August 2, 1912, on account of sickness.

The following officers have been detailed to represent the service at the annual meeting of the Association of Military Surgeons of the United States, to be held in Baltimore, October 1 to 4, 1912: Surgeon W. P. Mc-

Intosh, Passed Assistant Surgeon A. J. McLaughlin, Surgeon C. P. Wertenbaker, and Assistant Surgeon General W. C. Rucker.

The following officers have been detailed to attend the International Congress on Hygiene and Demography, to be held in Washington, D. C., September 23 to 28, 1912: Surgeon G. W. Stoner, Surgeon J. H. White, and Passed Assistant Surgeon R. H. Von Ezdorf.

The following officers were directed to report at Ellis Island, N. Y., Saturday, September 21st, to the chairman of a board of medical officers for physical examination to determine their fitness for promotion to the grade of senior surgeons: Surgeons Hiram W. Austin, George W. Stoner, Frank W. Mead, and Charles E. Banks.

The following officers were directed to report at the Bureau Thursday, September 19th, to the chairman of a board of medical officers for physical examination to determine their fitness for promotion to the grade of senior surgeon: Surgeons James M. Gassaway, Henry R. Carter, Parker C. Kallach, and A. H. Glennan.

Boards Convened.

Board of medical officers convened to meet at the Bureau Monday, September 16, 1912, for the examination of an officer of this Service to determine his present physical condition. Detail for the board: Assistant Surgeon General L. E. Cofer, chairman; Assistant Surgeon General L. E. Cofer, member; Surgeon D. A. Carmichael, recorder.

Board of medical officers convened to meet at the Bureau, Thursday, September 19, 1912, for the examination of such surgeons as may be ordered to appear before the board to determine their physical fitness for promotion to the grade of senior surgeon. Detail for the board: Assistant Surgeon General W. J. Pettus, chairman; Assistant Surgeon General L. E. Cofer, member; Surgeon Duncan A. Carmichael, recorder.

Board of medical officers convened to meet at the Bureau Wednesday, September 18, 1912, for the examination of Surgeon D. A. Carmichael to determine his physical fitness for promotion to the grade of senior surgeon. Detail for the board: Assistant Surgeon General A. H. Glennan, chairman; Assistant Surgeon General W. J. Pettus, member; Assistant Surgeon General L. E. Cofer, recorder.

Board of medical officers convened to meet at Ellis Island, N. Y., Saturday, September 21, 1912, for the examination of such surgeons as may be ordered to appear before the board to determine their physical fitness for promotion to the grade of Senior Surgeon. Detail for the board: Assistant Surgeon General W. J. Pettus, chairman; Assistant Surgeon General L. E. Cofer, member; Surgeon D. A. Carmichael, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending September 21, 1912:

Boehs, Charles J., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Banks, Mass., and ordered to College Park, Md., for duty with Signal Corps detachment. **Brechmin**, Louis, Jr., Major, Medical Corps. Ordered to Douglas, Ariz., for duty with the Ninth Cavalry. **Dutcher**, Basil H., Major, Medical Corps. Granted thirty days' leave of absence. **Fisk**, Owen G., Lieutenant, Medical Corps. Relieved from treatment at the Walter Reed General Hospital and from further duty at Fort Crook, Neb., and will proceed to Fort Logan H. Roots, Ark., for station and duty. **Gibson**, Paul W., First Lieutenant, Medical Corps. Relieved from duty at Fort Rosencrans, Cal., to take effect upon the expiration of the leave of absence heretofore granted him, and will then proceed to the Presidio of Monterey, Cal. **Gregory**, Junius C., Captain, Medical Corps. Relieved from duty in the Philippines Division and detailed in the army transport service, with station at San Francisco, Cal. **Hallett**, Harley J., First Lieutenant, Medical Corps. Relieved from duty at Fort Hamilton, N. Y., to take effect upon the completion of the duty assigned to him in paragraph 3, Special Orders No. 217, September 14, 1912, War Department, and will then proceed to Fort Crook, Neb. **Hammond**, Johnson F., First Lieutenant, Medical Corps. Relieved from duty with Am-

Insurance Company No. 2, and will proceed for duty with Field Hospital No. 2. **Henning, C. E.**, First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Stevens, Oregon, and ordered to Fort Columbia, Wash., for duty. **Hess, Louis T.**, Major, Medical Corps. Granted thirty days' leave of absence, about September 20, 1912. **McMurdo, H. B.**, Lieutenant, Medical Corps. Relieved from duty at Fort McDowell, Cal., and ordered to Fort Huachuca, Ariz., for duty. **Marietta, Shelley U.**, First Lieutenant, Medical Corps. Relieved from duty at the Presidio of Monterey, Cal., and will proceed to Fort Bayard, N. M., and report for duty. **Palmer, Fred W.**, Captain, Medical Corps. Now on temporary duty at Fort Rosencrans, Cal., is relieved from duty at Fort George Wright, Wash., and will report in person to the commanding officer of Fort Rosencrans for duty. **Poust, Luther R.**, Lieutenant, Medical Corps. Left Fort Riley, Kansas, with the 13th Cavalry, en route to El Paso, Texas. **Scott, George H.**, Captain, Medical Corps. Granted leave of absence for one month and ten days, about November 15th, with permission to go beyond the sea. **Scott, Thomas E.**, First Lieutenant, Medical Corps. Relieved from duty at Fort Niagara, N. Y., and will proceed to Fort Bayard, N. M., and report for duty. **Treuholtz, Clarence A.**, Captain, Medical Corps. Relieved from duty at the Presidio of Monterey, Cal., and will proceed to Fort Bayard, N. M. **Van Horn, James B.**, First Lieutenant, Medical Reserve Corps. Relieved from duty at Army General Hospital, Fort Bayard, N. M., and ordered home from active duty; granted two months' and twenty-nine days' leave of absence, to take effect upon arrival home. **Van Kirk, Harry H.**, First Lieutenant, Medical Corps. Relieved from duty at Plattsburg Barracks, N. Y., and will proceed to the Presidio of Monterey, Cal. **Wilson, Ellsworth.** First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Huachuca, Ariz., and ordered to Benicia Arsenal, Cal., for duty.

Each of the following named officers of the Medical Reserve Corps is relieved from duty at the station designated after his name, to take effect at such time as will enable him to comply with this order, and will repair to Washington at the proper time and report in person on or about September 20, 1912, to the commandant of the Army Medical School for the required course of instruction: **First Lieutenant William B. Borden**, General Hospital, Fort Bayard, New Mexico; **First Lieutenant Sidney L. Chappell**, Fort Totten, N. Y.; **First Lieutenant Robert H. Duenner**, Fort Oglethorpe, Ga.; **First Lieutenant John S. C. Fielden, Jr.**, Surgeon General's Office; **First Lieutenant William D. Herbert**, Fort Jay, N. Y.; **First Lieutenant Norman T. Kirk**, Soldiers' Home, District of Columbia; **First Lieutenant Ernest C. McCulloch**, Columbus Barracks, Ohio; **First Lieutenant John S. Saurman**, Fort Monroe, Va.; **First Lieutenant Benjamin B. Warriner**, Pacific Branch, United States Military Prison, Alcatraz, Calif.

The following named officers of the Medical Reserve Corps are ordered to active duty in the service of the United States on account of an existing emergency. They will repair to Washington, D. C., in time to comply with this order and report in person to the commandant of the Army Medical School, on or about September 20, 1912, for the required course of instruction: **First Lieutenants Raymond W. Bliss**, **Clarence R. Bell**, **Royal E. Cummings**, **Edward R. Guinan**, **Halbert P. Harris**, **George F. Lull**, **Fletcher O. McFarland**, **Stephen H. Smith**, **Edward T. B. Weidner**, **Leon M. Wilbor**.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the two weeks ending September 14, 1912:

Allen, D. G., Passed Assistant Surgeon. Ordered to duty at the Norfolk Hospital. **Curtis, L.**, Medical Inspector. Detached from the Torpedo Station and ordered to the Naval Recruiting Station, Boston, Mass. **Dollard, H. L.**, Passed Assistant Surgeon. Detached from the Naval Recruiting Station, Kansas City, and ordered to the *Arkansas*. **Halton, E. P.**, Assistant Sur-

geon. Detached from the *Alert* and ordered to *Mare Island Hospital* for treatment. **Hayden, R.**, Passed Assistant Surgeon. Detached from the *Massachusetts* and ordered to the *Alert*. **Johnson, M. K.**, Surgeon. Detached from the Naval Academy and ordered to the Newport Torpedo Station. **Mackenzie, E. G.**, Passed Assistant Surgeon. Transferred to the retired list on September 2d. **Moran, C. L.**, Passed Assistant Surgeon. Ordered to the Naval Hospital, Chelsea, Mass. **Orves, R. T.**, Surgeon. Detached from the *Alabama* to waiting orders. **Shifert, H. O.**, Surgeon. Detached from the *Vermont* to waiting orders. **Stuart, M. A.**, Passed Assistant Surgeon. Detached from the Norfolk Hospital and ordered to Las Animas Hospital. **Wilson, H. D.**, Surgeon. Detached from the Recruiting Station, Boston, and ordered to the *Alabama*.

Births, Marriages, and Deaths.

Married.

Chinn-Tyson.—In Baltimore, on Monday, September 9th, Dr. George Edward Chinn, of Norfolk, Va., and Mrs. Cynthia Tyson. **Coates-Pownall.**—In Oxford, Pa., on Wednesday, September 11th, Dr. Truman Coates and Mrs. Deborah Walker Pownall. **Duckwall-Gray.**—In Aspinwall, Pa., on Tuesday, September 10th, Dr. Bertram Foster Duckwall and Miss Eleanor Livingston Gray. **Farewell-Bell.**—In Danbury, Conn., on Saturday, September 21st, Dr. Norman Eugene Farewell and Miss Ethel S. Bell. **Hoyt-Hannum.**—In Ludlow, Mass., on Wednesday, September 11th, Dr. Perley Adelbert Hoyt and Miss Alice Louise Hannum. **Jungk-Ball.**—In St. Louis, Mo., on Thursday, September 12th, Dr. Carl G. W. Jungk and Miss Helen Ball. **Kern-Hopkins.**—In Lancaster, Pa., on Thursday, September 12th, Dr. Harrison Benjamin Kern, of Slatington, and Miss Elizabeth Hopkins. **La Chance-Forbes.**—In Fitchburg, Mass., on Wednesday, September 11th, Dr. A. P. La Chance, of Gardner, and Miss Helena C. Forbes. **Schildecker-Wightman.**—In Pittsburgh, Pa., on Wednesday, September 11th, Dr. Charles Bushfield Schildecker and Miss Edna Mae Wightman.

Died.

Bean.—In North Middletown, Ky., on Wednesday, September 11th, Dr. Bennett E. Bean, aged seventy years. **Beers.**—In New Comerstown, Ohio, on Tuesday, September 10th, Dr. Adam M. Beers, aged seventy-five years. **Bell.**—In Indianapolis, Ind., on Friday, September 13th, Dr. Guido Bell. **Crocker.**—In Foxboro, Mass., on Thursday, September 5th, Dr. Willard C. Crocker. **Davis.**—In Cleveland, Ohio, on Friday, September 13th, Dr. Frederick W. Davis, aged sixty years. **Fisk.**—In Nashville, Tenn., on Friday, September 13th, Dr. Francis H. Fisk, aged seventy-six years. **Frost.**—In Chicago, on Monday, September 9th, Dr. George Frost, aged fifty-one years. **Hays.**—In Louisville, Ky., on Tuesday, September 17th, Dr. Thomas A. Hays, aged fifty-nine years. **Hough.**—In Champaign, Ill., on Tuesday, September 10th, Dr. Charles F. Hough, aged fifty years. **Hughes.**—In New Rochelle, N. Y., on Friday, September 20th, Dr. John Lawrence Hughes, of Mount Vernon. **Kirschner.**—In Berlin, Germany, on Saturday, September 14th, Dr. K. A. Martin Kirschner, aged seventy years. **Lapointe.**—In Meriden, Conn., on Wednesday, September 11th, Dr. C. E. Lapointe, of Rutland, Vt., aged fifty-nine years. **Loughhead.**—In Andover, N. Y., on Thursday, September 12th, Dr. William H. Loughhead, aged fifty-one years. **Maupin.**—In Portsmouth, Va., on Tuesday, September 17th, Dr. George Washington O. Maupin, Jr. **Perkins.**—In Denver, Colo., on Tuesday, September 10th, Dr. Augustine Perkins, aged seventy-two years. **Poole.**—In Brier Hill, N. Y., on Wednesday, September 11th, Dr. Harry E. Poole, aged fifty-three years. **Prentiss.**—In Holyoke, Mass., on Sunday, September 15th, Dr. Harold T. Prentiss, aged forty-three years. **Putnam.**—In Fallon, Nev., on Monday, September 16th, Dr. Catherine E. Putnam, of St. Paul, Minn. **Trueworthy.**—In Lowell, Mass., on Friday, September 13th, Dr. Edwin W. Trueworthy, aged seventy-three years.

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Original Communications.

SKIN DISEASES IN RELATION TO THE SEXUAL ORGANS.*

BY S. POLLITZER, M. D.,

New York,

Professor of Dermatology, Post-Graduate Medical School
and Hospital.

The question of the relations between disorders of the generative organs in women and the skin is as old as Hippocrates. It has met with little serious treatment, however, on the part of gynecologists and dermatologists. The publications on the subject are, for the most part, limited to the narration of clinical observations, and have not escaped the influence of the superstitions that popularly surround the functions of menstruation and pregnancy. It was a sufficient explanation, only a few decades ago, to ascribe the cutaneous disorders associated with pregnancy to "reflex" action. In some obscure and anatomically impossible way an ovarian disorder was supposed to cause a skin disease through the medium of the nervous system. The famous experiment of Goltz, who divided the spinal cord of a female dog and later saw the animal go through all the phenomena of heat, copulation, pregnancy, parturition, and lactation, first showed the subordinate rôle of the nervous system in these processes, and pointed the way to the theory that it is through the medium of the blood that all the systemic changes incident to puberty and pregnancy take place. It is only since the dawn of our knowledge of the physiology of the internal secretions that we have come to some dim understanding of the means by which these changes are brought about. We have learned that it is through chemical products, prepared mainly in the ovaries, that the systemic changes in question take place, and we are justified in the assumption that it is through changes in the quantity or quality of these chemical products that pathological conditions in the system, and therefore in the skin, may occur.

Obviously, I cannot here go into the physiology of the internal secretions. Suffice it to point to the probability that the various organs of internal secretion, thyroid, thymus, adrenal, ovaries, hypophysis, etc., constitute a system, the members of which to a certain extent antagonize one another or may act vicariously for one another, and whose general function it is to antagonize the action of poisonous meta-

bolic products, to regulate blood pressure, and, to a great extent, metabolism. In illustration of the connection between the ovaries and some other organs of internal secretion, you will recall the swelling of the thyroid during menstruation and pregnancy, the atrophy of the thymus at puberty, etc.

The connection between certain dermatoses and disorders in the genital sphere in women lacks direct experimental foundation, but the clinical evidence that such a connection exists is so strong and so direct that there can be no reasonable place for doubt. It is, for instance, an established fact that certain dermatoses occur during pregnancy, disappear at its termination, and occur with succeeding pregnancies. We must explain these dermatoses as due to the presence of some chemical products in the blood that act like certain drugs in some individuals in producing eruptions.

In men the dermatoses connected with the genital organs are of less importance and of less frequent occurrence than in women, for the simple reason that the genital glands in the male are of minor physiological importance compared to those of the female, and are less subject to disease. The old saying of Van Helmont, *Propter uterum solum mulier est quod est*, freely transcribed into "a woman is what she is because of her ovaries"—has a deep physiological significance. The internal secretion from the testicles has a certain bearing on the physiology of the skin, but this seems to be limited to the period of puberty, and thereafter the male glands are not subject to the great physiological fluctuations in functional activity that affect the female through menstruation and pregnancy.

A consideration of all the dermatoses that may occur, or may be modified during the period of special physiological activity of the generative organs, would require a treatise covering practically the whole field of dermatology. I propose to limit this paper to a discussion of the more important effects on the skin that may with reasonable certainty be regarded as depending on the functional activity of these organs. That an eczema or a psoriasis sometimes disappears during pregnancy, and sometimes gets worse; these are facts which are so evidently unrelated to the condition of the generative organs that we need not waste time over them. I should like to consider the dermatoses of puberty, of menstruation, of pregnancy, and of the climacterium separately, but it is not feasible to separate the disorders of these periods entirely for the reason that so many of the disturbances in question are associated with the changes incident to the menstrual function which, of course, continues from the estab-

*Read at the New York Academy of Medicine, March 22, 1912 as part of a symposium on diseases of the skin in relation to internal disorders.

ishment of puberty to the climacterium and is normally interrupted only during pregnancy; and it is probable that even some of the cutaneous disorders of pregnancy depend on the cessation of ovarian activity and of menstruation during this time.

The most frequent dermatosis connected with puberty, and commonly supposed to bear a direct relation to the maturation of the genital organs, is acne. At puberty there is a profound change in the skin in both sexes. The increase in the adipose tissue rounding out the form of the female, the growth of hair in the pubic and axillary regions in both sexes, the growth of the beard in the male indicate important changes in the circulatory conditions in the skin. The common occurrence of acne at this period of life has given occasion to a great many fanciful theories of the causation of this dermatosis. Acne has been seriously regarded as an effect of toxic action on the skin in consequence of sexual abstinence; it has been regarded as the effect of toxic alteration in the blood dependent on internal secretion from the sexual glands, etc. Acne is a complicated process in which seborrhea and a local specific infection are the main factors. The essential elements of acne may be present long before puberty. I have frequently seen the diffuse hyperkeratosis and comedones of acne in children of eight or ten years. But it is only at puberty, when there is the added factor of a change in the blood supply particularly affecting the pilosebaceous follicles of the face, that acne attains its full development. It seems to me reasonable to regard acne as related to the sexual apparatus only in so far as the establishment of puberty physiologically brings about local circulatory changes in the skin of the face which render the latter a more favorable soil for the development of the special microorganisms of acne and seborrhea.

With the establishment of puberty we have, in the female, the beginning of a series of periodical changes of profound influence on the entire organism. The most probable theory of menstruation is that there is in the blood a periodical accumulation of toxic substances secreted by the ovaries, and these toxic substances bring about the changes in the uterus through which they are eliminated from the system. If this theory is correct, and it has much in its favor, it becomes apparent that modifications in the quantity or quality of the ovarian poison may bring about disturbances affecting the entire organism. The most common systemic disturbance connected with menstruation is the occurrence of circulatory irregularities. The fugitive hyperemias that precede or occur during the menses are of importance only in so far as they modify the character of an existing dermatosis or prepare the soil for a more permanent skin disease. The development or the exacerbation of rosacea at the menstrual epochs is well known. The repeated periodical dilatation of the bloodvessels of the cheeks may easily play an important rôle in the skin diseases of this region, for instance, in lupus erythematosus, seborrhea, etc.

The real nature of erythema exudativum multiforme is still a matter of speculation. Whatever its cause its connection with vascular changes is cer-

tain. The literature abounds in illustrations of the connection between this dermatosis and menstruation. These cases vary from simple erythema to erythema nodosum, and the eruption may occur periodically shortly before, during, or immediately after menstruation throughout a number of months, or even years, and is associated in many instances with obvious menstrual irregularities. Closely related to erythema exudativum is the occurrence of purpura in connection with menstrual irregularities. Many cases of purpura may be regarded as examples of an intensification of the same pathological processes in the skin that give rise to erythema multiforme. But there are other cases in which the cutaneous hemorrhage amounts to an actual flow of blood from the surface of the skin, cases of so called vicarious menstruation. These cases are rare, yet the interest that attaches to them is so great that a great many have been recorded in the literature. In many of these cases periodical bleeding from the skin occurs in connection with bleeding from various mucous membranes, the nose, the mouth, the stomach, bronchi, etc., and the special character of these hemorrhages depends on the fact that they occur in girls with delayed, or women with suppressed menses. Recent experimental observations that the corpus luteum contains a substance which diminishes the coagulability of the blood, is of interest in this connection.

Among the cutaneous diseases of neurovascular origin in which a definite relation to menstruation must be admitted, are urticaria and angioneurotic edema. Menstrual urticaria is by no means of rare occurrence. The attacks appear sometimes at regular intervals for many years with each monthly period. In another class of cases the urticarial attacks occur only in connection with menstrual irregularities, especially with amenorrhea. Angioneurotic edema belongs to the rarely observed dermatoses, but there are a considerable number of cases recorded in which the affection seemed to bear a definite relation to menstruation. These and similar affections in which the vasomotor system is concerned have been supposed to be of "reflex" origin. It is difficult to see how the uterine or ovarian nerves, by any process, could bring about these remote and scattered reflexes in the skin. On the other hand, the idea that the urticarias and acute circumscribed edemas associated with menstruation are anaphylactic phenomena analogous to the urticarias *ab ingestis*, has much in its favor.

By far the most frequent of the cutaneous disorders related to menstruation is herpes. It is difficult to arrive at exact figures of the frequency of this lesion. From a review of all the various statistics published it would seem that about one woman in twenty suffers from habitual, or at least frequent menstrual herpes. In the great majority of cases the herpetic eruption occurs on the external genitals; but in a fair proportion other parts of the body, notably the sacral region and the face, especially the lips, are the seat of the lesion. If the eruption was limited to the regions supplied by the lumbar and sacral nerves, the theory that it is due to injury of these nerves through the pelvic congestion that precedes and accompanies menstruation

might be a sufficient explanation. But obviously this theory affords no explanation of the extragenital herpes, and here we are again driven to the theory that the eruption in question is dependent on a toxemia of ovarian origin. The line between herpes zoster and genital herpes, or herpes simplex, is difficult to draw; many dermatologists regard the two forms as virtually identical in their pathology. For herpes zoster we have a variety of etiological factors that, through injury of the affected nerves, may bring about the lesion. Among these factors toxic agents of many kinds, arsenic, carbon monoxide, antipyrine, various infections, are well known. It seems not unreasonable, therefore, to ascribe menstrual herpes to an ovarian toxemia.

Hypertrichosis frequently makes it first appearance at puberty. The rapid increase in the growth of the hairs in certain definite regions is, we know, a normal process in both sexes. The excessive development of hairs in the female, more or less over the entire surface, but especially in the face, is a pathological process, the cause of which has given rise to much speculation. It is a well established fact that hypertrichosis in women is commonly associated with ovarian disorders. Disturbances in the function of the ovaries is a direct cause of changes in the adrenal glands and in the hypophysis cerebri. Even the temporary cessation of ovarian functional activity during pregnancy has been shown in animals to be accompanied by increase in the size of the hypophysis and of the adrenals. To the excessive function of the hypophysis or of the adrenals has been, in turn, ascribed the excessive stimulation of the hair follicles which results in hypertrichosis. This theory is supported by many clinical and anatomical data. I may refer in this connection to the recent work of Steinach, who showed experimentally that the development of the secondary sexual characters in guineapigs was due to the internal secretion of the respective sexual glands, and that it was possible to bring about a virtual inversion of secondary sexual characters by injecting young animals with extracts from the sexual glands of the opposite sex. But whether these effects are produced directly, or through the correlated action of the hypophysis and the adrenals, has not been determined. In any case, however, it seems probable that hypertrichosis of puberty—and the same is true of hypertrichosis that often develops in women with some ovarian disease and at the climacterium—is due to inadequate ovarian secretion.

The question of hyperpigmentation at puberty, during pregnancy, and in consequence of diseases of the generative organs in women, is involved in the same difficulties which surround the subject of pigmentation in general. There is as yet, for instance, no adequate explanation of the pigmentation in Addison's disease. As to the clinical fact that hyperpigmentation occurs in consequence of ovarian disease and of pregnancy, there is no doubt; the literature abounds in cases and we are all more or less familiar with examples from our personal experience. According to Kehrer, chloasma gravidarum occurs in seventy-four per cent. of all cases of pregnancy. Without clearly understanding the

mechanism of the disorder it seems likely that secondary disturbances in the function of the adrenals, due to the action of the ovarian secretion, is here the main factor.

Most of the dermatoses referred to thus far occur, to a greater or less extent, during pregnancy, and it is possible that they all depend on some disturbance in the internal secretion of the ovaries during this period of normal cessation of ovarian function. The dependence of the dermatosis on the pregnant state is often placed beyond question by the close temporal relation between the pregnancy and the skin disease. So, for instance, an urticaria that lasts throughout pregnancy and disappears with delivery may well be regarded as dependent on the changes in the genital organs. But the relations are not always so clear. In one of my patients a severe urticaria developed in the seventh month of pregnancy in a healthy woman, and persisted with unabated severity for an entire year after delivery. It is conceivable that the pregnant state brought about changes in one of the organs of internal secretion which persisted for a long time after the pregnancy ceased. The question is by no means simple. We know, however, of some of the dermatoses unquestionably dependent on pregnancy, that they sometimes persist at least for many months after the termination. Such, for instance, is often the case with herpes gestationis.

This disease constitutes one of what have been called the major dermatoses of pregnancy. It is a severe disease characterized by an eruption of more or less extensively distributed grouped lesions, made up mainly of vesicles and bullae accompanied by intense pruritus. The suffering from the incessant itching, with its attendant loss of sleep and consequent exhaustion may indeed be so great as to constitute an indication for interruption of the pregnancy. Whether this dermatosis is properly classified with the dermatitis herpetiformis of Duhring, as most dermatologists hold, or whether it is an independent nosological entity, as the Vienna school maintains, there is no doubt that the disease is dependent on pregnancy. In the majority of cases the disease disappears promptly on the evacuation of the uterine contents; and in many cases it has recurred with succeeding pregnancies, the patient being well in the intervals.

In impetigo herpetiformis we have the most formidable, as fortunately one of the rarest, of the dermatoses of pregnancy. Four out of the five cases first reported by Hebra, in 1872, all of them in pregnant women, terminated fatally. Since that time some thirty cases have been reported, about eighty per cent. of them in women, and of these nearly all in association with pregnancy. In several cases the women have recovered from an attack and have suffered from recurrences in succeeding pregnancies, finally succumbing. The disease is characterized by the occurrence of primary milium pustules arranged symmetrically and in groups, appearing usually first on the thighs, but ultimately covering a considerable extent of the surface. Some of the patients have recovered from the skin lesion on the termination of pregnancy to die suddenly a few weeks later. Post mortem examinations have

generally shown nothing more than a degeneration of the myocardium. Cultures from the blood as well as from the pustules have been negative. A satisfactory theory of the causation of this disease is not easy to find. It is not impossible that in the few cases recorded under this title we are dealing with two distinct diseases: First, a group of cases, the strict Hebra type in which the disease is dependent on pregnancy or the puerperal state; and, second, a group which would include the cases in nonpregnant women and in men, which in reality belong to the pustular type of Duhring's disease or dermatitis herpetiformis. In Duhring's first account of his dermatitis herpetiformis, you will remember, he included Hebra's impetigo herpetiformis in his group. There is, in short, some ground for regarding impetigo herpetiformis as a distinct disease of pregnancy.

It has been suggested that the pruritus, urticarias, and dermatitides of pregnancy are variations in grade of the effects of a single toxic agent which may possibly be responsible also for hyperemesis, nephritis, hepatitis, and eclampsia. According to this hypothesis all these considerations are due to anaphylaxis brought about through absorption of foreign proteids from the placenta or the fetus. Wechselmann and Scheuer, in a careful study of impetigo herpetiformis, came to the conclusion that its cause is to be found in the toxines or ferments produced in the placenta. These speculations are worth noting only in so far as they may afford a basis for experimental therapeutic efforts. In this connection it is of interest to record the observations of Linser, who brought about prompt cure in a series of cases of dermatoses in pregnant women by the intravenous or subcutaneous injection of twenty to thirty c. c. of serum from the blood of healthy pregnant women. Controls made with serum from nonpregnant women were without effect.

I pass over the numerous dermatoses of pregnancy that are manifestly dependent on the mechanical effects of the presence of the enlarged uterus, such as edema of the vulva and of the lower extremities, varicose veins, etc., with all their potentialities for aggravating an existing dermatosis or affording opportunity for the development of a fresh one, such as an eczema. Before leaving the subject of the dermatoses of pregnancy, I would refer for a moment to a minor disorder of pregnancy that Brickner has pointed out. The development of small pendulous growths, especially on the neck and upper thorax, molluscum fibrosum, has been noted as occurring occasionally at puberty. Brickner first described the occurrence of great numbers of these little cutaneous excrescences, many of them pigmented, during the second half of pregnancy, and noted their prompt disappearance after parturition. It seems to me that we have here too an effect of a disturbance in the normal relations of the internal secretions. In this connection I may refer for a moment to another disease, sometimes, though not necessarily, related to diseases of the generative organs in woman, which I first described in 1890, acanthosis nigricans, a disease of the gravest import, associated in fully seventy-five per cent. of the cases with malignant disease of the

pelvic or abdominal organs. In this disease we have extensive papillary and pigmentary hypertrophies affecting considerable areas of the skin. The most probable explanation of the cutaneous symptoms in this condition is that the abdominal or pelvic neoplasm interferes with the function of the abdominal sympathetic ganglia and the adrenals.

I may dismiss the cutaneous disorders of the puerperal state with a few words. The dermatoses of this period are of toxic origin, erythematous, scarlatiniiform, morbillic, purpuric, and are dependent on the absorption of septic matter from the genital tract.

The dermatoses of the climacterium, so far as they are related to the genital system at all, are practically of the same kind and nature as those of disordered menstruation, and like them seem to depend on altered ovarian secretion. When systemic disturbances occur at the climacteric, there is reason to believe that the ovaries have not undergone the atrophy which physiologically occurs with the cessation of menstruation.

In this brief outline of my subject I have attempted to present the pathology of cutaneous disorders connected with the sexual organs in the light of the recent advances in the physiology of the internal secretions. The subject is one of great difficulty in the present state of our knowledge. We are only on its threshold. The difficulties in the way of an understanding of the pathological effects of altered internal secretion is increased by the enormous complexity of the chemical correlations that exist between the various organs of internal secretion, so that we are often at a loss to know whether it is the hyposcretion or hypersecretion of one organ or the resulting disturbance in the secretion of another that produces the effects clinically observed. One fact, I think, is evident: We must give up our traditional notions of a mysterious "reflex" action in these cases. We are dealing in the case of the internal secretions with chemical substances of a definite, and, in most cases, relatively simple chemical constitution. The field is rich in the promise of useful developments along the lines of experimental research.

51 EAST SIXTIETH STREET.

SARCOMA OF THE MEDIASTINUM.

Report of Two Cases.

By HERMAN B. ALLYN, M. D.,
Philadelphia,

Associate in Medicine, University of Pennsylvania; Physician to the Philadelphia General Hospital.

When Dr. H. A. Hare wrote his classic monograph on mediastinal tumors he drew upon case reports which antedated the period when the histological characters of cancers and sarcoma were clearly differentiated. Even yet, however, the distinction between the tumors is not always easily made. Nevertheless, we can say that sarcoma is much more frequent than cancer. For a discussion of the relative frequency of the two kinds of tumors see a paper by Papper and Stengel, read before the Association of American Physicians, at its annual meeting in Washington, May, 1895.

Malignant tumors of the mediastinum are rare in children. Twenty-seven cases were noted by d'Espine and Picot in 750 malignant cases in children; and Edwards has collected thirty-one cases. They are nearly always of thymic origin. Lymphadenoma or lymphosarcoma appear to be the more common tumors. They occur in young adults from twenty-five to thirty-five years of age, and nearly three times as often in young men. Heredity appears to exert no influence and traumatism is not certainly a factor.

While tumors may develop either in the anterior or the posterior mediastinum, they are distinctly more frequent in the anterior, the ratio of frequency in the two places being about three to one. Primary malignant tumors are generally of thymic origin. They form a hard, fibrous, generally whitish mass, occupying the anterior mediastinum, adherent to the sternum and adjacent organs. They give rise to general symptoms which most frequently are extreme weakness, often with some cachexia, and to local symptoms depending upon the organs subjected to pressure.

The picture which I have seen several times is that of a pale, young man lying propped up in bed, or sitting up and leaning forward on account of dyspnea; he is very weak, and he complains chiefly of this or of the dyspnea. His color is that seen in advanced tuberculosis or in severe cachexias. It is difficult to rid one's self of the conviction that the patient has tuberculosis, especially as cough with some expectoration is often present, and there are often departures from the normal physical signs in the chest. It is only after repeated examinations of the sputum fail to discover tubercle bacilli that we seriously consider another cause for the condition.

In another group of cases all other symptoms are thrown into the shade by a large pleural effusion, which differs from that due to other causes by recurrence of the fluid promptly after it is removed by aspiration, and by being often sanguinolent. The same character of effusion obviously may be caused by sarcoma of the pleura itself.

In addition to these more general symptoms, there are special symptoms due to pressure, e. g., compression of superior vena cava, which causes congestion, cyanosis, and, later, edema of head, neck, arm of one side, or chest wall. Sometimes the veins are very markedly dilated. Boinet¹ says that cyanosis may come on very suddenly, following a paroxysm of coughing, and a paroxysm of suffocation. In one of his cases it coincided with very marked tachycardia. The cyanosis may, however, be fleeting. It may be visible in the tongue; the site of the venous stasis and the direction of flow point to the seat of disease.

In the nineteen cases reported by Oulmont, complete obstruction of the vena cava was produced five times by cancer of the mediastinum, and twice by tuberculous glands. The vessel may also be obstructed by clots and by cancerous products. In a case reported by Demarquay and Little, cancerous matter had penetrated even into the cavity of the right auricle. In the second of my cases there was

a large nodule growing from the wall of the right auricle.

Cyanosis may be due, not to compression of the vena cava, but to compression of the lung, to a large pleural effusion, or to dilatation of the heart. Edema is also a prominent symptom in many cases. Usually it begins in the neck and face, but it may appear first in one arm. Occasionally it is very extensive and the arms are greatly swollen and very cyanotic. In a few cases also there is edema of the legs, which is generally explained by a dilated heart or pericarditis, but there may be cancerous thrombosis of the iliacs.

Compression of the pulmonary veins may give rise to edema of the lungs, congestion, and hydrothorax; compression of the vena azygos may cause right hydrothorax.

Boinet says that compression of the right pulmonary artery by cancerous glands produced an intense thrill and a rough systolic souffle, with its maximum intensity in the second and third intercostal spaces, in cases reported by Berton, Lionville, and Salmon.

When the trachea or bronchi are pressed upon, there are dyspnea and cough of varying intensity. Sometimes there is much wheezing; a peculiar ronchus of great fixity has been described when the vagi are compressed. The cough in some cases is hard and paroxysmal, closely resembling that of pertussis or spasm of the glottis. The heart may be slowed by irritation of the vagi until the rate becomes forty-five, or even thirty. If paralysis succeeds upon irritation tachycardia, sometimes with attacks of palpitation, takes the place of bradycardia. From the same cause spasmodic dysphagia and dilatation of the stomach occasionally occur.

Compression of the recurrent laryngeal nerves may provoke, not only the hard brassy cough familiar in aneurysm of the arch of the aorta, but also terrible attacks of dyspnea with nocturnal paroxysms so threatening as to demand at times tracheotomy.

Boinet reports a case in point, communicated to him by Doctor Trouissaint. A young man, twenty-two years of age, died suddenly during an attack of suffocation. The voice had suddenly become rough, as though the patient was strangling. Inspiration was crowing with intense wheezing; expiration was whistling. At autopsy there was found a hard fibrous lymphadenoma surrounding all the mediastinal organs, adherent to the posterior face of the sternum, extending from the sternal fourchette to the diaphragm, and as large in diameter as an adult's arm. The pericardium was invaded by the growth and was two cm. in thickness. The trachea was so compressed that it resembled the sheath of a sword. Its calibre was reduced to a transverse fissure scarcely admitting the tip of the little finger. The recurrent nerve could be traced only to the point where it was prolonged to the esophagus.

Boinet says that paralysis of the vocal cords is a late symptom in mediastinal disease, that the roughness of the voice comes on insidiously, and that it may be intermittent; whereas in aneurysm it may appear suddenly and be an initial symptom.

Pain is usually one of the earliest symptoms. It is dull in character, being described as a sense of

¹Adénopathies et tumeurs du médiastinum. Brouardel, *Trans. médecine*, viii, 286.

pressure or constriction. It is referred to the space behind the upper portion of the sternum. Later in the disease there may be pain from pressure upon nerve trunks radiating into chest or arms. It may be well at this stage to remember that an apparently reflected pain may be in fact due to a secondary growth. In one of my cases the patient complained of pain over the mastoid process of the temporal bone. For a considerable time nothing could be discovered, but gradually a secondary sarcoma springing from the bone could be recognized.

Compression of the esophagus causes difficulty in swallowing, which may be constant, or recur in paroxysms analogous to the paroxysms, which occur from pressure upon the trachea. Mediastinal tumor may be latent, may indicate its presence by marked subjective symptoms, may be marked by an extensive pleural exudate, possibly serous or sanguinolent, or it may exhibit characteristic symptoms and physical signs. The same statements might be made of thoracic aneurysm, but aneurysm is less likely to be latent or to be masked by a pleural exudate, is less likely to be associated with edema of face and arm, and is, on the other hand, more likely to exhibit disturbance of the heart and erosion of the bony parts.

With the first case report I have been somewhat unfortunate. The original history is missing from the files of the Philadelphia General Hospital. That which is given here is supplied from memory by my interne, Doctor Williams. It is necessarily incomplete. We do not venture to describe from memory the physical signs in the chest. I can only say that they resembled those of a tuberculous bronchopneumonia, but were not as pronounced as one would expect in a man who was evidently seriously ill.

CASE I. Patient was a sparely built young man, with a pale, pasty complexion, who sat propped up in bed, or leaned forward resting his head upon his bent knees. The chief complaint was of weakness, shortness of breath, cough, and gastric disturbance. He had no pronounced pain in the chest, but rather a feeling of weight or constriction. The patient was thirty-five years of age, a morocco finisher by occupation, and a native of Philadelphia. He began to feel bad in April, 1910. There was a feeling of tightness or distress in the chest. While he felt "run down," nevertheless he continued to work as a morocco finisher until September, 1910, when he had to give up work entirely. During the summer he lost considerable weight, suffered with increasing dyspnea, and, late in the summer severe cough developed with mucopurulent expectoration. He complained for a time of a lump in the throat, for the relief of which he would irritate the throat with the finger to induce vomiting. He never expectorated blood while at home, but after being in the hospital two weeks, he began to spit up blood.

Ten years before his final admission, he was in the Philadelphia Hospital for blood poisoning. He says it was supposed to be erysipelas. About 1905, he was ill with dyspnea and a general run down condition. There was no history of pneumonia nor of typhoid fever, but he had two attacks of rheumatism involving the wrists and perhaps other joints. The dates of these attacks were not recorded. The patient was married. His wife had no children, but had had two miscarriages. He had always worked as a morocco finisher and was thus exposed to injurious fumes. He smoked and chewed tobacco, and drank both beer and whiskey to excess. In his family history it appeared that his mother, a brother, and a sister had died of tuberculosis, otherwise the family history was unimportant. In the patient's own sputum no tubercle bacilli were found while he was in hospital.

The duration of the disease was apparently about eight

months. The autopsy was performed by Dr. A. G. Ellis. His notes of the autopsy follow:

Autopsy.—Hypertrophy of the left ventricle; parenchymatous degeneration of the heart; multiple infarcts of both lungs, abscess of left lung, probably following infarction; mediastinal lymphosarcoma, bilateral hydrothorax; ascites; chronic diffuse nephritis; round ulcer of stomach; congestion and beginning cirrhosis of liver; bilateral chronic adhesive pleuritis; atelectasis of lower lobe of left lung.

Body was that of a markedly emaciated adult white male, the body still being slightly warm. There was edema of the feet, and a moderate kyphosis; left side of the chest from fourth interspace to the seventh was considerably depressed. This condition was due to an extra curving of the involved ribs, which showed internally as well as externally. Superficial fat was scanty. Muscles fairly red and quite firm.

The peritoneum contained about 200 c. c. of clear fluid. Liver projected below costal border 10 cm., this being largely due to an extremely long tongue-like projection downward of the right lobe, although the left lobe had a decided similar projection. Each pleural cavity contained 600 c. c. of yellowish fluid. There were old adhesions posteriorly in each cavity and also scattered adhesions between the pericardium and the left pleura. Pericardium contained 50 c. c. of clear fluid.

The heart was large; right side contained clotted blood; wall of right ventricle is 5 cm. thick, left ventricle 2.3 cm. thick. Heart muscle was very pale, but fairly firm. Endocardium was gray. Valves showed no noteworthy changes. Coronary arteries contained small yellowish patches but were smooth. Aorta was smooth and elastic.

In the left lung, the lower lobe was almost entirely atelectatic. Upper lobe was emphysematous along anterior margin. Near apex beneath pleura was a consolidated area 3 cm. long, depressed, red in color, quite firm. In posterior part of lobe about midpoint was a cavity with fairly smooth walls, 5 cm. in diameter, containing a mass of necrotic tissue, which was, at points, adherent to the wall. This cavity was in the posterior portion of an area that was airless, due partly to edema but partly to actual consolidation.

The right lung distended, light in color, soft along anterior margin. Posteriorly in the lower lobe were two solid, slightly elevated, nearly confluent masses, measuring together eight cm. in length. Inside surfaces were, in general, gray in color and relatively poor in blood. Incision of the consolidated areas, showed them to be solid, quite sharply circumscribed, grayish areas, with grayish boundaries. The vessels leading to these areas were thrombosed.

The mediastinal lymph nodes were decidedly enlarged, particularly a mass around the trachea. One in the anterior mediastinum on the right side was two cm. long and was largely yellow in color on section, this material being homogeneous, sharply circumscribed, and quite firm. Some of the others showed on section a similar appearance.

The left adrenal was normal. The left kidney capsule was slightly adherent, but its removal left a fairly smooth surface. Slight granulation was present at the lower pole, but surface was pale, red in color. Cortex was slightly narrowed. Pelvis contained more than ordinary amount of fat. Right adrenal appeared normal.

The right kidney was essentially the same as left. Pelvis was moderately dilated; ureters and bladder appeared normal.

The stomach was narrowed at about its midpoint, with slight adhesions to the peritoneum at the midpoint of the lesser curvature with radiating scarlike bands from this point. Incision showed that this point on the lesser curvature, ten cm. from the pylorus and nine cm. from the cardia, a round ulcer seven mm. in diameter. The floor was smooth, gray in color, and evenly depressed below surrounding surface. Walls were not undermined; mucosa surrounding ulcer was distinctly reddened for a considerable distance. Radiating furrows ran from the ulcer in every direction.

The liver was rather dark red in color; inside surfaces were, in general, rather pale, showing some distention of the central veins, also numerous grayish markings. Organ was quite firm. Capsule was thickened, and in region of gallbladder was a depression between the main portion

of the lobe and the tongue; like a projection already described. Gallbladder contained viscid, dark brown bile. The biliary ducts were patulous. Pancreas, grayish in color, firm. Splenic artery was thickened. Esophagus showed no gross lesions. The mucosa of the intestines was reddened moderately almost throughout, but showed no other lesions. Abdominal aorta contained a few yellowish elevated patches.

CASE II. The second patient was a woman about fifty-six years of age, who on April 2, 1910, called my attention to a tumor growing from the skin of the abdomen below the right costal border. It was about the size of a hickory nut, bluish black in color, beginning to ulcerate, and had started from a pigmented mole. The tumor had been noticed only a few weeks, and she had said nothing about it to the family. The appearance was so typical of a melanotic sarcoma that I insisted upon immediate removal. It was removed next day by Doctor Anspach. He reported in a month that it was a sarcoma and suggested a wider dissection of the skin and subcutaneous tissues, which was done, May 7th. The patient made a rather slow convalescence. I did not see her from June 2d to October 24th. It was then clear that she had lost ground. She had not had a very comfortable or restful summer. She had lost weight and had not only no appetite, but very little capacity to take food. It was so repugnant to her that the smell of it caused nausea, and when she took much she was liable to vomit. She said very little about herself and it was not until December 5th that I fairly got hold of her. She was then persuaded to go to bed and have a nurse, with the idea of isolation, fresh air, and rest, but even then her capacity and willingness to take food were very slight. The stomach contents showed free hydrochloric acid absent, but no mass could be detected. She complained chiefly of pains back of the left ear, over the mastoid and just back of it, and in the region of the crest of the ilium. Later, a growth could be made out back of the ear, but for a long time nothing could be discovered. Her chief complaint was of extreme weakness. The inability to take food was the other most prominent symptom. Milk she had never liked or been able to take. Under great persuasion she took a little, but her chief sustenance for two months was the whites of eggs and beef juice. During January she had choking spells so that she was afraid to swallow anything, and even when she did strangling was caused. During several weeks she was fed largely with peptonized milk by bowel, which was retained unusually well. A cough also developed which became quite annoying; nothing but a clear mucus was expelled, but there was often considerable of it. She was too weak to be turned over for examination, but nothing could be discovered to explain it from an anterior chest examination. The heart was slightly dilated with a soft systolic murmur. Morphine hypodermically gave her great relief, promoting sleep and rest, and making life comfortable. Later digitalone was given also with some benefit. About the middle of January a mass could be made out beneath the left border of the ribs. It was not tender or painful, and the patient was unaware of its existence. It was small, about the size of a small walnut, evidently firm and descended with inspiration, so it was believed to be connected with the left lobe of the liver. No other masses were felt in the abdomen then, but later a number of small nodules could be detected in the subcutaneous tissues of the abdominal wall.

After finding the mass below the ribs it was believed that the cough and the later swelling of the right hand and arm were due to secondary growths in the mediastinum. A pelvic examination previously had disclosed no intrapelvic growth and no rectal growth which would account for the pain in the left hip. This and the pain behind the ear ceased to trouble her for a long while before death. A later symptom was diplopia, due to weakness of the left superior oblique muscle. This, Doctor Holloway thought, might be due to some cranial growth, probably of the skull. There were no other cerebral symptoms.

Death occurred from progressive weakness. For two weeks at least before death she complained of great faintness and breathlessness if she was raised up and once she became cyanotic. The heart seemed as well as the rest of her. For the most part of her illness it was regular

and strong. Latterly it was generally over 100 and sometimes irregular.

Death occurred February 28th. The autopsy was performed by Professor Howard T. Karsner, to whom I am indebted for the following report:

Autopsy. Gross anatomical diagnosis. Lungs showed passive congestion, edema, slight chronic adhesive pleurisy. Heart, chronic interstitial myocarditis. Liver, passive congestion and cloudy swelling. Spleen, early passive congestion. Pancreas, chronic interstitial pancreatitis. Kidney, chronic interstitial nephritis. Stomach, catarrhal gastritis (questionable, because of embalming). Arteriosclerosis was present. Metastatic melanotic sarcoma of lungs, heart, liver, pancreas, spleen, adrenals, kidneys, peritoneum, retroperitoneal, mediastinal, peribronchial, and mesenteric lymph nodes, and subcutaneous tissues.

Histological diagnosis. Lungs showed passive congestion and bronchopneumonia. Heart, slight chronic interstitial myocarditis, cloudy swelling of the myocardium. Liver, passive congestion, cloudy swelling, periblobular fibrosis. Spleen, chronic interstitial splenitis. Pancreas, chronic interstitial pancreatitis. Kidney, chronic interstitial nephritis (slight). Stomach, well marked fibrosis. Pigmented soft mole of the labium majus. Metastatic, large, round cell sarcoma of heart, lungs, liver, spleen, pancreas, kidney, adrenals, and other situations not distinguishable under the microscope, probably lymph nodes and peritoneum.

The body was embalmed previous to autopsy. Body of a poorly nourished, adult, white woman, showing moderate rigor mortis and slight livor mortis. In the right hypochondriac region a linear scar, in the left iliac region and the left labium majus were two pea sized pedicled pigmented moles. Pupils equal and in midposition. Hair gray, general color of skin yellowish, superficial lymph nodes showed no enlargement whatever. Primary incision showed a thin, but distinct panniculus adiposus, pallid musculature, no bleeding. In the fat of the left iliac region a small tumor mass was found, and immediately under the right clavicle a small subcutaneous mass was noted.

Abdomen. The general abdominal cavity contained a small amount of bloody fluid, probably the result of the embalming process. About the round ligament of the liver the tumor mass was as large as a fist, somewhat nodular on the outer surface, distinctly encapsulated, nonadherent, and of a mottled, dark red and gray color. The cross section of this tumor mass showed a similar mottled appearance with extensive necrosis of the central portions of the tumor. Distributed throughout the great omentum, gastrocolic omentum, gastrosplenic omentum, peritoneum of gut, and to a slight degree to the parietal peritoneum, a large number of tumor masses were found, some being not larger than a pin head, others reaching a diameter of about two cm., the latter being as frequent as the former. In the pelvis, the perirenal peritoneum, and parietal peritoneum of the pelvic wall, and the peritoneum covering the bladder were several large nodules, but in no case did these nodules produce compression of, or directly involve either bladder or rectum.

The appendix pointed inward and upward and was free from adhesions. Considering the extensive involvement by tumor masses, the peritoneum throughout was remarkably free from adhesions.

Liver. The organ was but slightly enlarged, showed a smooth, glistening, transparent capsule, free from adhesions. The shape of the organ was normal, except for slight bulging of the lower surface of the left lobe which was produced by the presence of a tumor nodule about four cm. in diameter, generally spherical and distinctly encapsulated; throughout the rest of the liver a fairly large number of very small (five mm. in diameter) metastatic nodules were found. The liver parenchyma showed dark red central zones and yellowish gray peripheral zones. Gallbladder showed microscopic change. The pancreas was about ten cm. in length, very firm, irregular in outline, and was largely replaced by tumor nodules of variable size. A slight fibrosis of the uninvolved organ was evident. The stomach was much hardened by the embalming fluid, but was of normal size, and showed a thick, dark red mucosa, covered with adherent viscid grayish yellow mucus. The intestines were not opened.

The spleen was slightly adherent along the posterior

margin. It was moderately enlarged, showed a smooth, normally thick, transparent tense capsule, throughout which a few tumor nodules could be seen. The organ cut with about normal resistance and showed a nonbulging, dark red, slightly bleeding cut surface in which neither follicles nor trabeculae could be distinctly made out. The three subcapsular nodules were augmented by a small number of more deeply seated nodules, all of which showed slight central necrosis, were variably pigmented, and well encapsulated.

The left adrenal was distinctly enlarged. The cortex was a thin band penetrating here and there by small tumor nodules. The medulla appeared to be completely replaced by tumor masses which had softened to a very considerable degree.

The left kidney was about normal in size and firm, and the capsule stripped with distinctly increased resistance tearing a few pieces of cortex with it. The upper surface was finely granular and showed a few stellate and irregularly linear areas of depression. The color was generally dark red. The organ cut with distinctly increased resistance, showing a nonbulging, firm, grayish red, slightly bleeding cut surface. The cortex was of about normal thickness and showed practically normal striations and visible glomeruli. The medulla was sharply defined, normally striated, and the pyramids showed pale fibrous tips. The circumcaval fat was slightly increased and pelvic mucosa was normal.

The right adrenal presented almost identically the same appearance as its fellow except that the tumor masses did not show such an extensive necrosis. In the left kidney, throughout the cortex a number of similar pea sized non-necrotic tumor masses could be seen. The right kidney showed the same general processes as its fellow except that the tumor invasion was by a large solitary nodule, generally spherical, about 3.5 cm. in diameter, which had undergone very extensive necrosis.

Bladder and uterus were normal, also the tubes and ovaries. None of the internal genitalia showed any tumor invasion whatever.

Retroperitoneal lymph nodes. These nodes, especially in the neighborhood of the kidney and adrenals, showed moderately extensive invasion of the tumor masses. In this region of the mesenteric lymph nodes numerous tumor nodules were found, but there was some question as to whether these really involved the mesenteric lymph nodes or whether they represented subperitoneal involvement of this cortex.

On opening the thorax the organs were found in normal position but extensive invasion of the lymph nodes of the entire mediastinal cavity was noticeable. The right pleura was free from adhesions, except at the apex where slight fibrous adhesions were seen; no fluid. The right lung was of normal volume and showed numerous subpleural nodules, almost uniformly the size of a split pea and free from macroscopic necrosis. The organ cut with normal resistance and showed a pallid, moderately anthracotic cut surface in the upper portion, and a dark red cut surface in the lower portions. A large amount of a frothy salmon colored fluid could be expressed from all parts of the cut surface. Throughout the cut surface numerous small nodules, similar to those seen under the pleura, were noted. The bronchi were congested, showed a slightly thickened reddened mucosa, and contained a small amount of limpid frothy fluid. Pulmonary vessels were apparently normal.

Peribronchial lymph nodes. Anterior to the bronchus at the root a mass of enlarged nodules, deeply anthracotic and extensively involved by tumor masses, measured 2.5 x 2 x 1 cm. This mass, however, produced no notable pressure upon the carefully dissected structures of the lung root. Posteriorly a smaller mass of nodes 4 x 3 x 2.5 cm. appeared to produce slight compression of the lower division of the primary bronchus, and was in such a position that it could very easily have produced pressure upon the pulmonary vein.

The left pleura was free from adhesions and contained about 200 c. c. of cloudy, bloody fluid which appeared to have slightly compressed the base of the lung.

The left lung was like its fellow, except for slight compression at the base. There was very much less involvement of the peribronchial lymph nodes and no evidence whatever of pressure upon the structure at the root.

The pericardium contained a small amount of clear, straw colored fluid, and was smooth and glistening through-

out. The parietal pericardium showed no tumor invasion whatever.

The heart was about the size of the patient's clenched fist, firm, and showed a considerable amount of subepicardial fat. The epicardium showed in the right auriculo-ventricular groove two nodules one cm. in diameter, one of which was pigmented and the other not. At the apex to the left of the ventricular groove was a small, slightly pigmented nodule. Over the right auricle posteriorly, was a nodule, moderately pigmented, five mm. in diameter. Muscle cut with slightly increased resistance and showed a nonbulging, reddish brown firm, cut surface in which a moderate number of fibrous striae were seen. Left ventricular wall measured ten mm. at the base; imbedded in the substance of the wall were numerous nodules, three to four mm. in diameter, some being pigmented, some not. The two different lines of section through the left ventricle showed quite a number of nodules. The left auriculo-ventricular orifice measured eight cm. and showed very little thickening, but otherwise normal leaflets and chordae tendineae. The aortic orifice measured six cm. and showed very slight general thickening of the leaflets and sinuses of Valsalva, but the coronary orifices showed no sclerosis. Coronary arteries showed no well defined sclerosis. The endocardium of the left auricle showed a normal endocardium, and the left ventricle had an endocardium of normal thickness, but showed a few tumor nodules similar to those seen in the muscular substance. The right ventricular wall measured three mm., but no metastatic nodules were found in the muscle. The right auriculoventricular orifice measured 9.5 cm.; the leaflets were normal, except that slight destruction of one leaflet produced by a large tumor mass of the auricle to be described. The pulmonary orifice measured six cm. and the leaflets were normal. The endocardium of the right ventricle showed a small number of subendocardial nodules, similar to those seen in the heart. Growing in from the posterior wall of the auricle, midway between the orifices of the vena cava, a tumor mass measuring three cm. transversely, four cm. vertically, and protruding 3.5 cm. into the auricular cavity, was seen. The mass was completely covered by endocardium, was rather spherical, very slightly nodular, mottled in color (dark reddish brown and gray), and evidently softened in its middle. The tumor was slightly pedunculated. The attachment to the auricular wall was about 1.5 cm. in diameter and the position of the tumor was such that the orifice of the coronary sinus was forced downward and toward the median line. The foramen ovale was closed.

The aorta, throughout its length, showed numerous plaques of thickened, yellowed intima, in some places being distinctly hyaline, in all instances protruding slightly into the lumen. There was no gross evidence of syphilitic character in the process. The aorta was free from tumor invasion. The vena cava inferior was free from invasion, the vena cava superior carefully dissected out to the junction, and extending into the innominate and for a considerable distance into the right subclavian, failed to show any change.

Examination of the pigmented mole originally removed from the abdomen was made and the original tumor found to be practically identical with the masses found and described in the viscera, or appearing throughout the more freely growing metastases described in the latter part of the notes. The free growing metastases showed the typical characters of the large round cell sarcoma, and this only in those masses which were growing under more pressure (the pressure of surrounding connective tissue), such as the original growth and the nodules within the solid organs. It is the opinion of the writer that the giant cell formation was positively not that of true giant cell sarcoma, since the cells were too large, too irregular in size, and showed too great variability in the size and staining characters of the nuclei. This particular feature was probably the result of growth under pressure in which continuous division of the rapidly proliferating cells could go on with sufficient freedom, with the result that nuclear division occurred without concomitant cell division. The appearance of the oat cells and short spindle cells is a common feature of large round cell sarcoma, more especially of the type of endothelioma. The writer does not think that sufficient evidence is present to justify the diagnosis of endothelioma, especially in view of the fact that Unna is of the opinion that soft mole, and soft pigmented

moles are not of endothelial origin. Careful examination of all the sections showed such slight pigmentation as to render unjustifiable the histological diagnosis of melanotic sarcoma. The diagnosis therefore was one of large, round cell sarcoma.

501 SOUTH FORTY-SECOND STREET.

SECONDARY INFECTIONS IN PULMONARY TUBERCULOSIS.*

A Preliminary Report of the Use of Mixed Infection Vaccines in the Treatment of Forty Cases of Advanced Pulmonary Tuberculosis.

By I. H. ALEXANDER, M. D.,
Pittsburgh.

Seldom is it the privilege of a clinician to be able to report a new theory as to the etiology of a disease, that has been the subject of so much investigation as has been pulmonary tuberculosis within the last decade, which theory has been substantiated in hundreds of cases, and at the same time report a method of treatment that has given results, not only equal to the best known methods now in use, but in excess of our greatest expectations, both of which I propose to do in my paper this evening.

Pulmonary tuberculosis, in the great majority of cases, I believe to be a most harmless and trivial affection, so long as it remains a true tuberculous infection and does not become contaminated by other pyogenic bacteria, the products of which seem to produce a very favorable culture medium for the development of tubercle bacilli. The majority of cases of true tuberculous infection are cured without the patients' knowledge of their ever having been infected. It is the scars of the healed lesions that we find at the post mortem table in patients dying of some other disease. It is in this same class of cases that the careful clinician is able to diagnose a healed pulmonary lesion, when he is making a thorough physical examination for some other ailment, and his patient may not recall ever having had any symptoms during his previous life that would suggest to his mind that he might have been infected with pulmonary tuberculosis.

It is my belief, after an experience of more than three thousand cases, some of which I have examined but once, but many of which I have followed through the course of their disease to an apparent cure, and too many, I am sorry to say, to a fatal termination, that these cases become progressively better or worse in accordance with the amount of secondary infection present, and I have failed to detect a single case of pulmonary tuberculosis that has passed an incipient stage in which I was not able to demonstrate the complicating secondary infection; nor can I recall a case of pulmonary tuberculosis in the second or third stage, where improvement took place, that I did not notice, coincident with this improvement, a diminution in the evidence of secondary infection.

At a meeting of physicians in Pittsburgh, about a year ago, called to discuss the use of vaccines in the treatment of various diseases, I suggested to those present that I believed, should we be able to find a vaccine or serum or any other remedial agent that

would be able to cope with the secondary infection in second and third stage cases of pulmonary tuberculosis, that the tuberculous infection would be very easily and most satisfactorily handled. In fact, I do not believe that a case of pulmonary tuberculosis ever reaches the second stage, unless it first becomes complicated with a secondary infection.

My experience in the treatment of tuberculosis with the mixed infection vaccines, or phylacogens,¹ to date numbers about forty cases, and results have been so universally good that I hesitated to make my report until a greater number of cases had been treated and until it had been tried out by more men of clinical experience and unbiased minds. There are, at the present time, several men throughout the country, treating pulmonary tuberculosis with the phylacogens according to the ideas I suggested some time ago, and whose results have been just as phenomenal as those I wish to report now.

Along with my good results, I have had many deaths, but in no case have I had a death where I did not believe that the patient was beyond the aid of any medication before I began treatment, and it was then only a measure of last resort, as I felt confident at the time that the treatment would avail nothing. I also treated many cases that were apparently hopeless, which are to-day much improved; some are well along the way to an apparent cure.

It is not my intention to make any great claims in this preliminary report for the use of the mixed vaccines, or to attempt to make any explanation as to how they act, but to outline briefly in my case reports the results obtained, the methods of administration, and the different phenomena observed during the course of the treatment.

In medical circles in California, particularly in San Francisco, and in Kern county, great interest has been manifest for the last two years in the reports of the extraordinary results following a new form of treatment of acute and chronic infections with bacterial derivatives, originated by Dr. A. F. Schafer, of Bakersfield, California. Doctor Schafer presented his method and his technique to the San Joaquin Medical Society in Fresno, October, 1910, later to the San Francisco Medical Society, January 14, 1911, and published a preliminary statement in the *Therapeutic Gazette* for April, 1911. The principle upon which the use of these vaccines is founded is, briefly, the theory of multiple infections. This principle is supported by an extraordinary practical experience, supplemented by exhaustive and long continued laboratory and clinical experimental work by Doctor Schafer.

Three facts are set forth by Doctor Schafer as the basis of this new therapy. First, practically all acute and many of the chronic diseases are caused by the metabolic products of bacteria; second, the human subject is the host of microorganisms that are pathologically latent, but capable of setting up a disease process under certain conditions; third, the growth of infecting microorganisms can be arrested and their effects neutralized by products derived from their development in artificial culture media.

Doctor Schafer is of the belief that all infections are "mixed" infections, that except in rare instances,

*Read at the meeting of the College of Physicians, Pittsburgh, April 25, 1912.

¹From Greek, *φύλακτον* and *γενερά*, meaning *to look after*, *producing* guardians.

there is no such thing as an infection by a single species of microorganism; that while one species may predominate, the pathogenic process engendered by it is accelerated and intensified by the complicating presence of other organisms of other species; in other words, that in the course of an infectious disease the symptoms are due, not only to the effects of a single species of organism (the specific infection), but to the influence of other organisms whose pathological rôle is not insignificant, but must be reckoned within any successful scheme of therapeutics.

Doctor Schafer further believes that the human body is, at all times, the host of a great variety of organisms, and harbors these pathogenic bacteria without harm to itself during periods of physiological resistance, at par, and in the absence of any solution of tissue continuity. When the resistance is below par, or a solution of continuity tissue occurs, the bacteria harbored by the human host assume pathological significance. Furthermore, he contends that certain diseases, as typhoid fever, pneumonia, tuberculosis, erysipelas, rheumatism, and others, are objective and subjective symptomatic manifestations of the preponderance in the patient of the toxic and destructive products of the peculiar species of organisms to which the etiology of the disease is usually ascribed, as *Bacillus typhosus* in typhoid fever, *Diplococcus pneumoniae* in pneumonia, *Bacillus tuberculosis* in tuberculosis, etc., and in addition, the symptoms are due, in part at least, to the destructive action of certain materials produced by complicating organisms which are always present in great variety and number.

Doctor Schafer points to the fact that the administration of bacterial vaccines to patients suffering from infection not infrequently fails of effect, because the truth of the foregoing assumption is not recognized, especially when the treatment, being based upon the opsonic theory, consists in the use of a vaccine made from a single species of organism isolated from the patient. Bacterial vaccines made from a single species or organisms proved successful in many cases, but the multiplicity of "combined" bacterial vaccines now in use points to the conclusion that the great majority of patients require something more than treatment with a vaccine made from one organism; the success attending the use of bacterial vaccines made from a number of different species, even when used in cases apparently due to one species, points to the likelihood of this theory being correct.

PREPARATION OF THE MIXED VACCINES.

Phylacogens are neither bacterial vaccines nor sera, as these terms are ordinarily understood. They are sterile, aqueous solutions of metabolic substances, or derivatives, generated by bacteria grown in artificial media. The process of preparation may be briefly described as follows: A large variety of pathogenic bacteria, such as the several *Streptococcus pyogenes*, *Bacillus pyocyaneus*, *Diplococcus pneumoniae*, *Bacillus typhosus*, *Bacillus coli communis*, *Streptococcus rheumaticus*, *Streptococcus erysipellatis*, etc., are planted in artificial media and incubated at 37° C. for seventy-two hours or longer. The bacteria are killed, a preservative consisting of 0.5 per cent. of phenol is added, and the material is

then filtered through porcelain, removing all bacteria. The sterility of the filtrate is assured by careful cultural tests. The various organisms used are present in the material before filtration in approximately equal proportions. The phylacogen made in this manner is the *basic* phylacogen used for the preparation of all of the other specific phylacogens so far prepared and subjected to clinical testing. To identify this basic phylacogen it has been named "mixed infection phylacogen." Its therapeutical indications will be referred to further on in this communication.

Mixed infection phylacogen is a true polyvalent preparation, since the organisms used in its preparation are not from one strain (source) of each given species, but are obtained from cultures made at frequent intervals, from different sources, and from a variety of pathological conditions caused by organisms of the same species. The results of these studies indicate that in most instances the blood of animals treated undergoes but slight change after receiving the phylacogen, the most notable change being in the number of cellular elements. Practically all tests show a slight diminution in the number of red cells; and a fairly constant leucocytosis, but usually without alteration in the size or condition of the corpuscles, was apparent following the injection. The hemoglobin content and the specific gravity were affected very little. A large number of blood pressure tracings have been made, indicating that a depressor (blood pressure lowering) principle is present in the remedy. The clotting time of the blood is slightly decreased.

ANAPHYLAXIS.

Laboratory studies were undertaken for the purpose of determining whether anaphylaxis, as ordinarily understood, or dangerous sensitization of animals, could be produced by injections of these phylacogens. No anaphylactic reactions were observed in our experiments.

AUTOPSIES.

Another series of experiments were made to ascertain what tissue changes follow injections. No macroscopic or microscopic changes were found in animals injected with quantities of phylacogen approximating the therapeutic dose. Clinical safety is, therefore, further established. Invariably injections of ten to thirty c. c. (nearly three times the minimum lethal dose) to each kilogramme of body weight were necessary to produce recognizable tissue changes. Such changes as were found were in practically every instance due to acute poisoning, evidently induced by the heavy burden thrown upon the circulatory system of taking care of three to four hundred c. c. of liquid, differing from the blood in specific gravity, viscosity, and chemical composition. Such doses are, obviously, many times as great as those used therapeutically.

DIAGNOSIS.

The successful application of phylacogen (Schafer) depends upon a correct diagnosis. Our clinical investigations have furnished evidence to support the contention of Doctor Schafer that when his mixed vaccines are administered, apparently without result, the case has been wrongly diagnosed, or the vaccines have not been used as suggested. In 854 cases on record in which the phylacogen has

been administered, the disappearance of symptoms has been surprisingly rapid and definite in 767 cases, or eighty-nine per cent. In this series a large number have shown no results; this led to a searching examination which disclosed errors in diagnosis and in a large percentage the corrected diagnosis was that of conditions not amenable to mixed vaccine therapy.

In cases where no apparent improvement follows subcutaneous injection, *small* intravenous injections are suggested. If after these have been tried and no results follow, a *careful reexamination* of the patient should be made, to ascertain if the first diagnosis is correct, and it is urged that bacteriological assays of any discharge be made to determine the character of the infecting organisms so that the *indicated specific* phylacogen may be administered. Surgical complications should also be thought of and searched for. In some instances pieces of necrosed bone must be removed; in biliary sinuses the presence or absence of stone must be accurately determined, etc.

METHOD OF ADMINISTRATION.

These vaccines may be administered in either of two ways: 1. Under the skin (subcutaneously) or, 2, directly into the vein (intravenously). The subcutaneous method is the one preferred. The intravenous method should never be resorted to, except in selected cases occurring among inmates of well regulated and equipped hospitals with trained assistants, or in cases in which the expected results are not obtained by repeated subcutaneous administrations, as has occurred in a few cases; and never *except by physicians* who are expert in giving intravenous injections.

In most instances the results obtained by the subcutaneous method are as good as those following the intravenous injection, but are not so strikingly rapid. The beneficial effect is produced as well by the subcutaneous administration as by the intravenous method, but a *longer course of treatment is required*. The intravenous administration generally produces sudden and decided relief of all symptoms, but is followed by constitutional reactions much more pronounced than those following the subcutaneous method. In *certain cases*, such as those complicated with grave heart lesions of long standing, or advanced arteriosclerosis, the *intravenous method is decidedly contraindicated* and may be dangerous.

SITE OF INJECTION.

The vaccines should be injected under the skin, not into the superficial fascia, nor into a muscle. Each injection may be made into a different area if desired, the first injection at the insertion of the deltoid muscle, the second in the back, between the scapulae, the third under the abdominal skin, a fourth in the thigh. In carrying out my treatment, I usually start with a small amount, two c. c. being the average initial dose, given subcutaneously. On the following day I give five c. c., which dose is repeated every other day until such time as the reaction is reduced to a minimum, when I increase to seven c. c. and continue, the same interval of time between doses as before. The dose is then increased to ten c. c., given at seventy-two hour in-

tervals. In no case have I found it necessary to give more than fourteen doses, the average in the cases treated being ten.

REACTIONS.

Clinical experience has shown that the subcutaneous injection of the mixed vaccines is followed by local and constitutional reactions, such as swelling, redness, pain, stiffness, and numbness. These may vary in intensity from very slight to quite severe reactions. It is not uncommon for patients to speak of stiffness or numbness at the site of the injection, or to complain of a "numb feeling" over the entire body. All of these symptoms are transitory in character, speedily disappear, and should cause no uneasiness on the part of the attending physician, who should warn the patient and his friends or relatives against needless alarm, and insist that the symptoms should be disregarded in view of the result to be expected.

GENERAL REACTION.

Abdominal pain, nausea, vomiting, frequent bowel movements, at times purging, feeling of great depression, bodily weakness, and a sense of numbness over the entire body have been met with, as well as a chilly feeling, and more rarely a distinct chill. It is believed, however, that most of these severe reactions follow the administration only of too large or too frequent doses, or the accidental injection into the vein. In two cases, abscesses have developed at the site of injection and have occasioned some alarm and a discontinuance of treatment, which was unwarranted. Phylacogen contains neither living nor dead organisms, and has been proved, by repeated bacteriological and physiological tests, to be sterile and incapable of causing infection. It has been suggested that in these cases oft repeated injections of unusually large doses into the same area may have produced pressure necrosis, having been slowly absorbed. Examinations of cases of this kind have disclosed the fact that the contents of the so called abscesses were sterile, seemingly corroborating the above explanation.

EFFECTS UPON THE HEART.

The phylacogen causes a distinct effect upon the heart and central nervous system, as evidenced by a rapid pulse, which may increase from ten to fifty beats above the rate before injection, and an increase in temperature of one to five degrees.

OTHER REACTIONS.

The general condition of the patient is usually promptly improved. The facial expression becomes notably better; the temperature, pulse rate, and number of respirations decline, and there is a decrease in blood pressure. Quite frequently nausea, vomiting, and diarrhea occur and, occasionally, stomatitis. In a number of cases herpes appeared around the mouth, the lips becoming cracked and bleeding. Certain patients are met with who do not respond to subcutaneous injections, no matter how long continued, but who do respond to *small* intravenous injections. There seems to be no way in which these patients may be distinguished before treatment. This peculiar resistance of some patients to subcutaneous injections, however, must therefore be borne in mind, and it is suggested that

before the phylacogens are pronounced a failure in a given case of this kind, that one or more *small* intravenous injections be administered.

CONTRAINDICATIONS.

1. *Intravenous method.* Terminal cases, those of patients already dying; hopeless cases; cases with severe and dangerous cardiac involvement; cases with pronounced arteriosclerosis, should never be treated with rheumatism phylacogen intravenously; cases which are recovering should not be so treated, as the results would be inconclusive.

2. *Subcutaneous method.* There are no contraindications to the subcutaneous administration of the rheumatism phylacogen.

It is urged that patients who are considered to be in a hopeless condition, patients who are already moribund, patients in whom there seems to be no

of the exact mode of action. We believe the clinical results obtained thus far fully warrant their use. It has been noted, as a result of treating a large number of cases, that those cases respond best to the treatment which react most strongly to the phylacogens. There seems to be a direct relation between the vigor of the reaction and the rapidity of the relief of the symptoms. The patients in whom no reaction occurred required the longest course of treatment, and some apparently received no benefit.

AGE.

Age alone presents no contraindication to the administration of the phylacogen. For infants and the aged the initial dose should be one fourth to one half the prescribed adult dose.

PERMANENCE OF RESULT.

Experience warrants the further statement that

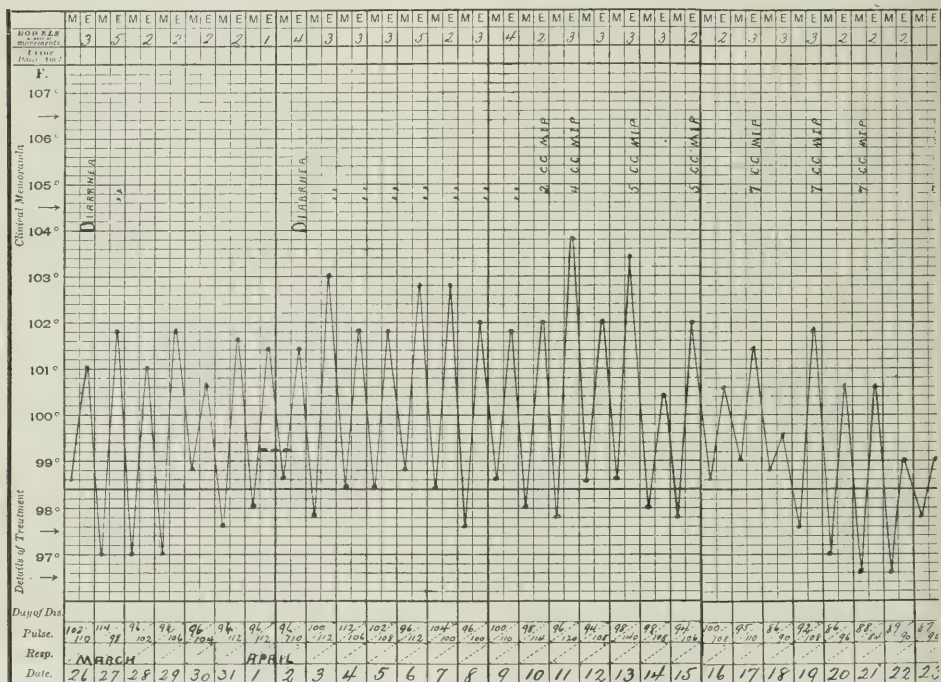


CHART I.—Pulmonary-tuberculosis, tuberculous enteritis (Case I).

possibility of recovery, under any circumstances, be not treated with phylacogen, either subcutaneously or intravenously. These are not fair tests, and if the patient dies no conclusion can be drawn as to the value or otherwise of the remedy.

PHYSIOLOGICAL ACTION.

The present use of the phylacogens, prepared according to the method originated by Dr. A. F. Schafer, may be objected to by some practitioners on the ground of empiricism, and criticised because there is, just now, no proved scientific explanation

patients who have been dismissed as cured, following the administration of two, three, or four doses of phylacogen, of as much even as ten c. c. at a dose, may relapse in a short time and require the reinstitution of treatment. A few of the first patients were discharged after three or four injections because of a total disappearance of all symptoms, which misled the attending physician into the belief that a miraculously sudden and complete cure had resulted. It now seems to be clearly established that *notwithstanding the complete disappearance of symptoms*, to insure the permanence of the cure and

to prevent relapses the patient must remain under treatment for at least six days, receiving each day one or more injections of the maximum dose, and the administration should be discontinued only when the symptoms have disappeared.

CASES.

Within the past year I have treated forty cases of advanced pulmonary tuberculosis with mixed infection phylacogen. Of these cases, four ended fatally, all of which were considered hopeless when treatment was instituted. During the first few weeks of treatment some improvement was noted, as evidenced by change in character of expectoration, lowered temperature curve, lessened cough, and general clinical appearance. Treatment was suspended during the absence of the writer in California. Upon his return it was noted that these four patients were again showing evidence of secondary infection. Upon treatment being again instituted it was found that they did not respond as before, and in due time they died. Just why the mixed infection phylacogen did not control the infection in the latter instance, I am at a loss to say at this time.

In eight patients the use of the mixed infection phylacogen was discontinued, three of them because they passed from under my control, due to seeking a change of climate; five because of the continued rapid progress of the disease.

Sixteen patients were much improved, and they are under treatment at the present time and give every prospect of making a recovery.

Twelve advanced cases have been discharged as apparent cures. No treatment has been given for more than nine months, and the majority of the patients showed no evidence of an active lesion after four months. Three of the apparent cures were of patients between the ages of eight and twelve years; the remainder between twenty and forty years of age.

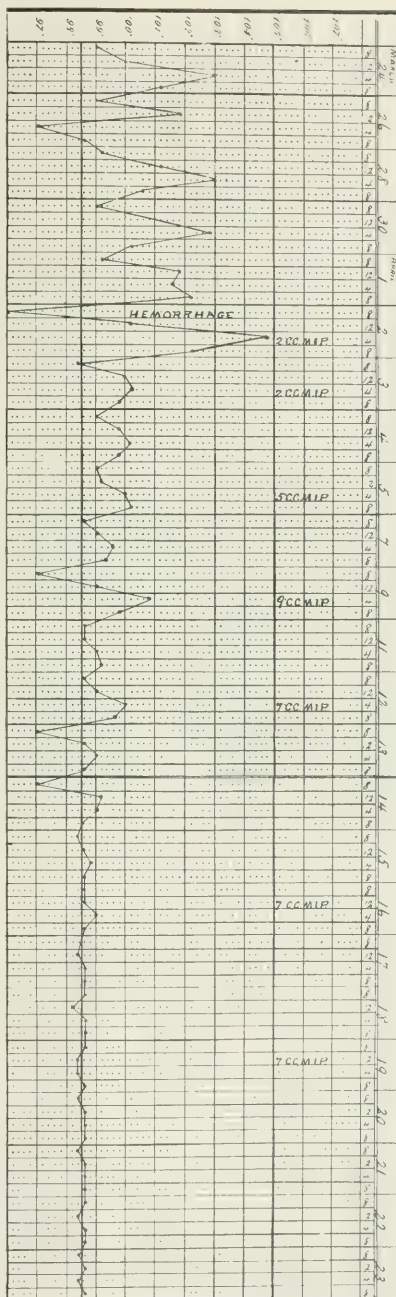
The following case histories are presented to demonstrate the type, reactions, etc.:

CASE I (28). A. R., aged twenty-six years, private patient. Diagnosis, advanced pulmonary tuberculosis with cavity formation and tuberculous enteritis. Family history negative. Previous medical history negative. Present trouble began two years ago with marked gastric disturbance and repeated attacks of diarrhea. Loss of weight and strength. Rise of temperature; no cough until six months ago, when he began to fail rapidly. With persistent cough a large amount of purulent expectoration, night sweats, chills, continued diarrhea, and rapid emaciation.

My first examination of this patient showed a far advanced pulmonary lesion, involving the upper half of both lungs, with cavity in upper left, and evidence of beginning cavity formation in upper right lobe. The characteristic symptoms of far advanced pulmonary tuberculosis and intestinal involvement were present. Tubercle bacilli were demonstrated in sputum and feces as well as other enormous pathogenic bacteria.

The ordinary methods of treatment were carried out from February 23 to April 10, 1912, in spite of which, the patient continued to grow progressively worse. On April 10, 1912, treatment with mixed infection phylacogen was instituted and continued as indicated on chart 1. Clinical improvement was noted from the beginning of treatment. Cough lessened, expectoration diminished and changed in character from purulent to mucous type. The temperature was lower on elapsing days, diarrhea ceased and bowel action became normal. Reexamination of sputum showed a marked diminution in number of tubercle bacilli and almost a complete absence of contaminating

Chart 2—J. G., advanced pulmonary tuberculosis (Case 11).



bacteria. Reexamination of stools showed a marked diminution in number of tubercle bacilli. No pus or blood. Examination of chest (April 24, 1912,) showed a great improvement in the physical signs.

CASE II (23). J. G., aged thirty-nine years, occupation painter. Diagnosis, advanced pulmonary tuberculosis; bacilli demonstrated. Family history negative. Previous medical history, diphtheria as a child, had had catarrhal condition nose and throat for six years, present trouble began one year ago with shortness of breath, weakness, loss of weight (sixty pounds in last four months). High temperature, but no cough.

March 24, 1912, I was called in consultation with Doctor Hodgkiss, with a view of controlling a pulmonary hemorrhage. Patient had had eleven hemorrhages pre-

berculosis phylacogen. Almost from the first a marked effect was noted upon the bowel movements, which became nearly normal in character and number. At the time of her discharge, October 28, 1911, repeated examinations failed to demonstrate bacilli in feces. Patient showed a marked gain in weight and in strength, movements normal in number and consistence, appetite good. February 18, 1912, patient still remained well. Reactions in this case were never marked, except change in temperature; local reaction slight. A very marked change for the better was noted after the fourth injection of mixed infection phylacogen, and the patient continued to improve from then on until discharged.

CASE IV (21). D. R., aged nine years. Diagnosis, pulmonary tuberculosis. History: Cough and expectoration,

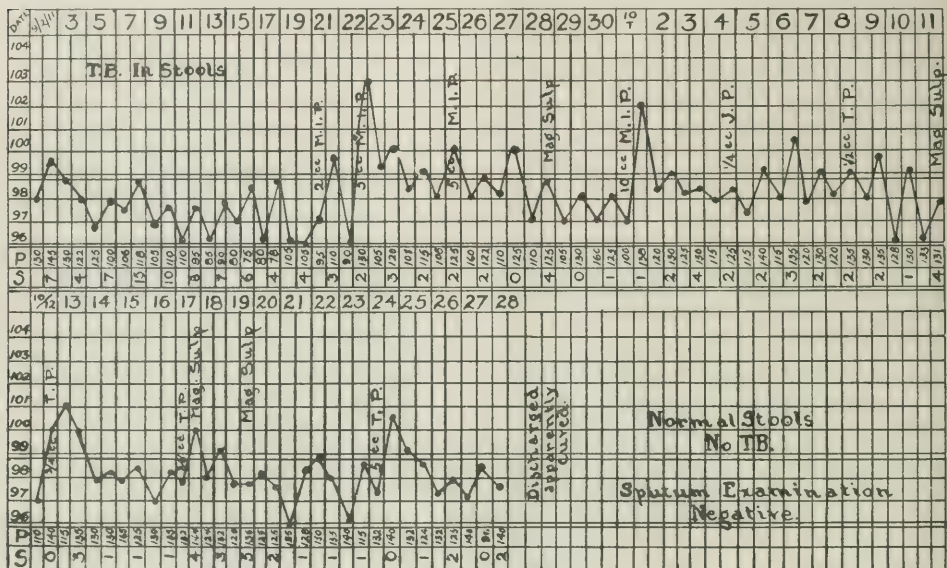


CHART 3.—Tuberculous enteritis (Case III).

viously, seven of which were copious, four ounces or more; cough and expectoration excessive during last four months.

Examination showed extensive involvement of both lungs to third and fourth rib on right and left respectively and to mid scapular line posteriorly. Extensive glandular involvement at base of both lungs along spine. Cavity, left apex, second and third rib. Following fourth injection a marked improvement in all clinical manifestations was noted. The treatment was continued until April 19, 1912, when he received his last injection. At this time there was no evidence of any active pulmonary lesion. Patient was up and around the house. Showed a gain in weight, no rise in temperature, cough, or expectoration; appetite fine. This patient has remained in good condition up to this date, June 15, 1912.

CASE III (6). Mrs. K. K., aged forty years. Passavant Hospital. Diagnosis, tuberculous enteritis. History: Owing to the fact that this woman was unable to understand English, the history was limited. Admitted to the hospital with a diagnosis of carcinoma of stomach, which was later changed to tuberculous enteritis. General condition on admission was very bad. Repeated examinations of sputum failed to demonstrate tubercle bacilli. September 9, 1911, bacilli were demonstrated in feces. Patient on admission had almost continuous bowel movement. Was rapidly losing weight; anemic. Respiration rapid at times, pulse rapid and not of good character. Treatment was instituted, using the mixed infection phylacogen and tu-

rise of temperature, night sweats for past two years. Previous medical history, ordinary diseases of childhood. Adenoids removed. Physical examination, April 8, 1910, showed enlargement of cervical glands, extensive involvement left base posterior. Tubercle bacilli were demonstrated in sputum. Ordinary tuberculosis treatment instituted until May 20, 1911, when patient was discharged as an apparent cure. Weight sixty-one pounds. January 13, 1912, returned with recurrence of pulmonary symptoms, temperature 99° to 101° F. maximum, weight sixty-one pounds, extensive involvement to base of right lung. Mixed infection phylacogen one c.c. given January 21, 1912, increased to two c.c. and then to five c.c. every fourth day approximately. February 17, 1912, patient was discharged in good condition; reexamination March 23, 1912, showed no evidence of any active lesion. Discharged apparently cured.

CASE V (22). E. G., aged thirty-three years. Diagnosis, advanced pulmonary tuberculosis. History, August 7, 1911, trouble began three months previous to this date, bronchitis, sore throat, cough, and some expectoration, general malaise, persistent areas of soreness, left upper chest anterior, occasional night sweats during the last nine months. Family history negative. Previous medical history, severe attack of typhoid fever nine years ago. Tubercle bacilli demonstrated in sputum.

January 8, 1912, examination showed disease progressing. Mixed infection phylacogen two c.c. given on this date and increased to five, seven, and ten c.c. at intervals

of four days. Improvement was noted following the fourth injection. After the seventh injection physical examination of chest showed a marked improvement. Repeated examination of sputum negative to bacilli.

February 17, 1912, examination of chest showed no râles. No cough or expectoration and patient was discharged April 8, 1912, as an apparent cure. (On June 15th, patient reported in fine condition.)

CASE VI (17). Diagnosis, pulmonary tuberculosis. Family History: One sister and two brothers died of tuberculosis. Previous medical history: Typhoid severe twelve years ago, never in good health since. Present trouble began seven years ago with hemorrhage. March 14, 1912, presented with cough and purulent expectoration, some pain in shoulder, shortness of breath, and loss of weight and strength. Physical examination showed extensive involvement both upper lobes and both lower lobes posteriorly. Mixed infection phylacogen treatment instituted March 19, 1912, beginning with a two c.c. injection, repeated at four day intervals, increasing from two c.c. to five, seven, and ten c.c. Improvement was noted following fourth injection. After receiving the ninth injection, April 5, 1912, patient was in excellent condition, no cough or expectoration, appetite improved. Physical examination at this time showed a very few small moist râles only. Still under treatment.

731 JENKINS BUILDING.

THERAPEUTICAL NIHILISM.

By MAXIMILIAN SCHULMAN, M. D.,

New York,

Instructor in Therapeutics, Columbia University; Chief of Clinic, Department of Applied Therapeutics, Vanderbilt Clinic.

There are several classes of therapeutical nihilists, and they are similar or agreed only on one point, i. e., that they are nihilists. One class comprises those men who have had much experience, have studied much, and thought deeply and then come to an honest conclusion and feel really convinced, that therapeutics is of little avail. They feel thus, act accordingly, but are rarely agitated, or bitter in denunciation of our art. We may disagree with them, but cannot condemn them. They are few.

Another class comprises those men who are always, in all matters, opposed to the existing order of things, and to the majority opinion, without having any ground for their belief—in fact, having no belief or opinion of their own at all; but who think it smart to affect pessimism, and everlastingly do so. They are not even natural pessimists; they are one type of humbug. These are the men that parade what they choose to call their opinions, and they are the men that work themselves up to an artificial pitch of misplaced enthusiasm. They are the most emphatic in their expressions, and do distinct harm, because they are the cause of the existence of a third class of therapeutical nihilists.

The third class comprises the men who are too indolent to exert themselves to learn anything that they have an excuse for shirking, and they find what seems to them a good excuse for an attitude of therapeutical nihilism, in the preachings of the second class. These men may be perfectly honest, but they are primarily lazy, and are content to accept opinions that make so much for their convenience. This class carries a large membership, and they are not to be altogether condemned, for their methods are at least possessed of a negative virtue. They are far less likely to do harm than the man equally lazy,

and equally or more ignorant, who is ready to try everything that the advertisements or detail men recommend, and who believes, when prescribing, that if one ingredient makes a prescription desirable, ten ingredients will make it ten times so. Such an optimist never gives a thought to the nature of his combinations, and Oh! what combinations he does make!

When speaking of the therapeutics of general medical conditions in adults and children (excluding surgical and all the special fields), we must obviously include general hygienic, dietetic, mechanical, and psychic measures, as well as medicinal. However, when a therapeutical nihilist is confronted with the argument that all the measures mentioned, apart from medicinal, are as much the province of therapeutics, and as much require the intelligent supervision of the practising physician as drug therapy, he promptly shifts his ground to the attack of drugs, feeling that there his position is strong and the attack most likely to result in victory. He usually very promptly allows the efficiency of the other measures, contenting himself with the statement that it does not require a doctor to apply them. I shall limit my remarks, therefore, to the defense of drug therapy, only again emphasizing that the other measures mentioned are so clearly valuable that even the pessimist allows them their due.

The position of the nihilist on the score of drug therapy is well illustrated by the following occurrence. When I asked such a doctor how many drugs he thinks he would not want to be deprived of, he promptly answered he could get along very well with six. After allowing him to think a few moments, he increased his demand to ten. I then told him I thought he would ask for three preparations of mercury alone—namely, corrosive sublimate, calomel, and blue ointment. He admitted he wants all three, but that they are all derived from mercury and hence to be counted as one drug. I allowed him this position and we proceeded to enumerate indispensable drug families. Within a few minutes we found ourselves burdened with over a score of them!

Now it is my purpose, in what follows, to enumerate, with very brief comment, the official drugs which it seems to me, no physician practising general medicine would be willing to be deprived of. I make this statement so broad because, personally, I know many more drugs than I here include which I find very welcome aids in the treatment of my patients, while I cannot imagine any one, doing a general practice, who does not at some time find an honest indication for the drugs enumerated, and who does not, at some time, feel that the drug employed truly helped in the relief of his patient. When hard pressed, the therapeutical nihilist, especially of the second classification, argues that we have hardly any drugs which directly cure disease—referring to specifics—and hence that there is no drug therapy worthy of consideration! Yet, I dare say, that were we limited in our drug therapy to the use of one drug, and compelled to yield all but one, most of us would ask to be allowed opium. Opium is a symptomatic remedy, but opium nevertheless helps cure many a patient. Let me only mention

the Ochsner treatment of appendicitis, and refer to the value of opium in saving the heart of a patient with pneumonia who is coughing his head off. Think what rank nonsense, from the viewpoint of the nihilist, to say that a patient with pneumonia, "a self limited disease," can possibly be saved by the judicious use of opium, a *symptomatic* remedy, if there is one.

The grouping which I have arranged is in no way orthodox and is open to many objections and criticisms, but is convenient for my purpose.

Group A, five drugs, *specifics*. 1. Quinine; 2, mercury; 3, thyroid; 4, antidiphtheritic serum; 5, antimeningococcus serum. The action of the drugs of this group is so clearly specific for malaria, syphilis, myxedema, and cretinism, diphtheria, and cerebrospinal meningitis, respectively, that no more than their mention is required.

Group B, nine drugs, *near specifics*. 1. Aspidium. 2. Santonin vermifugas, for tapeworm and roundworm respectively, are the most certain and most commonly employed drugs of their nature, and rarely, ever, when properly used, fail to effect the removal of the parasites. 3. Sodium salicylate is by many considered useful only to reduce pain and temperature, but more doctors consider it to have specific action in rheumatism, and certainly, in the acutely inflamed joints, when given in sufficient dose, it seems to have very markedly beneficial, if not specific, effect. The stomach will tolerate twenty grain doses every two hours, in the case of most adults, provided it be combined with twice the dose of sodium bicarbonate, and given in such doses, the effect sought is usually attained before any untoward symptoms of salicylism are manifested. 4. Colchicum does for the joint with acute gout what salicylate does for the joint with acute rheumatism. 5. Iron may be placed here, if only for its value in chlorosis. No matter how iron does its work, the fact remains that iron, given best as fresh Blaud's pill, is required in addition to the proper food, air, etc., in cases of chlorosis. Iron alone will do for the chlorotic patient more than all the hygienic and dietetic measures combined. 6. Arsenic would be missed to-day more than ever, for salvarsan has come to stay. 7. Iodides may be placed here, bearing in mind that even in tertiary syphilis, with manifest lesions, mercury outranks it, as it does salvarsan. 8. Digitalis is so clearly the remedy that is first thought of in heart disease, and has such marvelous effect when used in proper cases and in sufficient doses that it deserves to be called a near specific. 9. Ergot for its distinctive effect in causing contraction of uterine muscle, is also a near specific.

Group C, six drugs, *drugs acting on the respiratory tract*. 1. Menthol, used in the very beginning of acute coryza, is undoubtedly helpful. 2. Antimony, used in acute tracheitis, or first stage of acute bronchitis, when the cough is dry, the chest sore, and sibilant râles evident, has no substitute that is as useful. 3. Ammonium chloride as a stimulating expectorant, valuable in the second stage of acute bronchitis, is used by all practising physicians. 4. Creosote, in pulmonary tuberculosis, I, for one, would sorely miss. 5. Codliver oil might be called a food, but it is so much more easily digested than other forms of fat, and, especially by children, so

well taken that few of us do not at some time want it and feel we are doing good with it. 6. Calcium lactate I place here, for it finds its best field of action in pulmonary tuberculosis.

Group D, six drugs, *drugs acting on the digestive tract*. 1. Hydrochloric acid; 2, sodium bicarbonate; 3, magnesium oxide; 4, bismuth. It might be objected that I include three antacids, but any one treating gastroenteric diseases will recognize a need for all three: Soda for rapid symptomatic relief; magnesia, usually to be preferred, has more sustained but less marked action; and bismuth for its additional astringent effect on, and coating of ulcerated mucous membrane. I omit digestive enzymes from this list, though personally I feel that pancreatin serves a useful purpose, especially in the treatment of children. 5. Capsicum for alcoholic gastritis. This is our best aid in keeping this class of patients comfortable, without the "morning dram." 6. Turpentine, as one carminative and counterirritant. We would all miss a drug of such nature when our pneumonia patient gets a distended belly. Personally, for use by rectum, I prefer asafetida, but I am trying to include as few drugs as possible, hence choose one that may be effective when used on the abdomen as a stupe, as well as when used in enema.

Group E, four drugs, *cathartics, etc.* 1. Croton oil; 2, castor oil; 3, magnesium sulphate; 4, cascara. It might here be objected that we already have calomel, in mercury, but, when requiring an active purge, especially for a child, and the patient has some kidney irritation or perhaps inflammation, as in scarlet fever, mercury is contraindicated and we need castor oil. Again, castor oil and epsom salt are not interchangeable, and each has its own field, while croton oil, obviously, has its especial indications as a quickly acting drastic purge.

Group F, one drug, *emetic*. 1. Apomorphine. I include only this one emetic here, because antimony has already been mentioned, though in another connection.

Group G, five drugs, *stimulants*. 1. Strong ammonia water, for syncope; 2, camphor, as the best rapidly diffusible stimulant for hypodermic use, especially in critical conditions; 3, caffeine as a sure vasomotor tonic, for more continuous use; 4, strychnine still has not been definitely proved to be devoid of effect as a vasomotor tonic, while it surely is a nerve and medullary tonic. This drug has its function as a tonic where cerebral irritability would not permit the use of caffeine. 5. Epinephrine as a vasomotor tonic, especially in the surgical field, would be sorely missed. In addition, the man dealing with the upper respiratory tract would miss epinephrine, and so would many an asthmatic patient.

Group H, three drugs, *vasodilators*. 1. Nitrites; 2, alcohol; 3, chloral. This last is to replace nitrites when they are not well borne.

Group I, five drugs, *nerve depressants or sedatives*. 1. Antipyrine, to mention only one of the coaltar group; 2, belladonna and its derivatives, for peripheral nerve depression. It might here be mentioned that hyoscine hydrobromide is one of the most useful drugs in paralysis agitans. 3. Bromides require no explanation. 4. Triopal, to mention only one drug that is a distinct hypnotic and

not to be replaced by the formerly mentioned bromides or choral. 5. Aconitine, for its effect in trigeminal neuralgia, when all other drugs have failed.

Group J, one drug, opium, deserves to be classed by itself and requires no amplification.

Group K, three drugs, *anesthetics*. 1. Ether; 2, chloroform; 3, cocaine.

Group L, eight drugs, *antiseptics*. 1. Boric acid would be missed by eye specialists as well as general practitioners. 2. Copper sulphate may be classed here for its usefulness in trachoma. 3. Iodine, the favorite skin antiseptic to-day. 4. Hydrogen peroxide for pus cavities. 5. Silver nitrate would especially be missed by the genitourinary specialist. 6. Alum acetate for external inflammations cannot be replaced by any of the other drugs mentioned. 7. Betanaphthol, to mention one intestinal antiseptic; if its effect is controlled with the indican test on the urine, it will very often be found effective. 8. Hexamethylenamine is finding a constantly wider field of usefulness, as an internal antiseptic, and whatever may finally be left of all the wonders to-day attributed to it, its value in the urinary tract infections has been proved by the test of time, and its possible effect in cerebrospinal meningeal inflammations cannot be neglected, having been attested to by the careful and painstaking work of Flexner.

Group M, three drugs, *skin remedies*. I would here include only: 1. Zinc; 2, tar; 3, chrysarobin, in addition to antiseptics, etc., mentioned in other places, that are also useful in this field.

In the enumeration above made I have tried to limit myself to such drugs as all physicians in active general practice will at some time use, and feel that they are using something with qualities potential for good. I believe I have duplicated in my enumeration only one drug, i. e., ammonia, and I have allowed myself this, because strong ammonia water will never be used in place of ammonium chloride, nor vice versa, and they may, certainly as far as the therapeutic indication is concerned, be considered practically two drugs.

Limiting myself as strictly as I have done, it will be noted that there are still listed fifty-nine distinct drugs. It must further be noted that this list includes only official drugs. I do not care how strict a puritan one may be provided he be in the active practice of medicine, I am sure he uses more than one drug that has not yet found its way into the *United States Pharmacopæia*, and, being a puritan and using unofficial drugs, he must find them valuable. Still further, the list contains not one preparation of more than a single ingredient, i. e., none of the old and long tried combinations of the *National Formulary*, many of which have merit, and some few of which, most of us, at some time or other, think worth prescribing.

While I feel certain that my enumeration will offend many practising physicians by the omission of some of their favorites, I doubt if there are many, even among avowed therapeutic pessimists, who will find in this list many drugs that they have not at some time used, and used in the belief, as well as hope, that the drug will do their patient some good, either in the direct, specific way, or in a

more roundabout way. Why, then, so much talk about ten or a dozen drugs being all sufficient? Such talk does much harm to the undergraduate student, who finds the study of materia medica dry and burdensome enough, and is only too glad to hear statements that will warrant him in neglecting this branch of his studies. The injury done in this way is continued and aggravated by the ready made formulas of our hospitals and dispensaries. How many men, when they enter on private practice after graduating even from the *medical service* of our best hospitals, know how to write a prescription? How many, when doing duty in the hospital and dispensary order formula entitled "so and so," and do not know most of the ingredients nor their proportions, in the formula they are ordering!

220 WEST 111TH STREET.

THE EMPIRICAL TREATMENT OF SPIRIT AND DRUG NEUROSES.

BY T. D. CROTHERS, M. D.,
Hartford, Connecticut,

Superintendent, Walnut Lodge Hospital.

It is an interesting fact that every great advance in science and medicine, and every new discovery must pass through a stage of empiricism before it is recognized and finally accepted. Charlatans, both in and out of the profession, are alert to take advantage of any supposed new discovery and make it contribute to their personal interest, regardless of present and future consequences. While the disease theory of drink and drug neuroses has been asserted for many centuries, it attracted no attention until about 1850. In 1860 the first hospital for the treatment of inebriates as diseased, was opened at Binghamton, New York. This attracted a great deal of attention, and the question of disease was the subject of intense criticism, affirmations, and denials; finally the reality of it was recognized.

Then the empiric stage began. Charlatans of every degree rushed into the field with claims of having discovered remedies, plans of treatment, and methods of cure and prevention that were certain and absolute. One of the first and most widely known of these empirics picked out a statement, published in the *Journal of Inebriety*, in 1879, of the experience of a Moscow physician with strychnine nitrate used hypodermically. According to his own statement, he tried this remedy on himself, then on some of his friends, and announced that he had made a discovery of a new cure.

About this time a solution of gold was promoted in a hospital in London as a remedy for scrofula. A very careful study revealed the fact that it had very little value, and was inferior to iron and arsenic. This was published in this country, and the alluring name and mysterious possibilities suggested the combination with strychnine. Atropine sulphate was heralded about this time as a new drug of great potency and power, and this was appropriated in the cure. Then an accidental combination of circumstances raised this specific cure into great prominence.

The disease theory was heralded in a most dogmatic and positive way. It was assumed that the alcoholic and inebriate were suffering from the obsession to drink which, if broken up, would be followed by complete recovery. This specific was a discovery of a combination of drugs that would not only break up the drink craze, but restore the damaged cells and tissues so as to prevent any relapse. It was announced that this specific would produce positive immunity, and, like the vaccine of small-pox, put the person in a condition where he would never take spirits again. All the early and later empirics started from this theory, that inebriety was a disease and curable, and that they had discovered a drug, or combination of drugs, that would effectually stamp out the desire for spirits.

The theory assumed a half physical and half moral causation, giving greater prominence to the latter, also that when the obsession for spirits was overcome, the person was cured, and the permanence of the cure depended on his will power. This theory appealed to a large army of victims, and to moralists and others, as being reasonable and covering the entire field. The early empiricists seemed to have had a very high conception of the psychological value of methods of treatment. Thus the patient was required to pay in advance and to follow a distinct military plan of taking the drugs at intervals without fail.

Beyond this it was a question of faith and confidence. The statements of himself and others must be accepted; not religious faith nor mystical conceptions of the future, but positive belief in the drug taken, and the drug effects. As a control experiment, all sorts of whiskey were given freely, and the person was urged to use them. Care was taken that the spirits should contain some nauseating drug, and thus create and intensify a disgust which was ascribed to other causes.

Most emphatic assertions and theories were kept uppermost in the mind, that a revolution was going on in the system, all spirits would be abandoned forever, and a new life of sobriety was growing up, that would be perpetual. The mental atmosphere was delusional and delirious, and the patient was startled, astonished, and overwhelmed with the effects, particularly the tremendous disgust for both the taste and odor of spirits. There was psychic contagion in the air; patients, coming in and going out, illustrated the most profound revolutions of thought, motive, and activity. After four weeks, a control test was made with loaded spirits, which caused intense nausea, deepened and fixed the impression of cure, and developed a species of optimism that was delusional and failed to bear the test of time.

A large number of patients, after four weeks' treatment, exhibited defects of vision and degrees of palsy of the muscles of the nerves. Some of these conditions continued for a long time and were explained to be due to other causes, not to the drug taken. Disorders of the stomach followed, later insomnia, which was generally overlooked in the satisfaction and joy of having no taste for spirits. The uniformity of these peculiar physical symptoms, and their particular prominence in certain cases, indi-

cated simply the poisoning action of strychnine and atropine. The sensational success of the first empiric effort brought into the field armies of rivals, with all sorts of extravagant claims and pretensions, based on the same general theory that the disgust for spirits was the cure, all using practically the same drugs, as noted in their effects, and all appealing to the control tests, showing that spirits could not be taken again.

One of these great organized schemes spread over the country, opening institutions, treating free of cost the most incurable persons who could be found, and when they had reached the disgust stage for spirits, sending them out as agents to bring in persons who could pay for the treatment; going to large towns and cities and opening up cure houses near police stations and saloons in the lowest parts of the city, curing any one who would come and take four hypodermic treatments a day and some other drug. Then, having created great sensation and astonishment, companies were formed to sell the rights to physicians and others who hoped to share in the golden harvest to follow the use of these specifics.

In this way nearly every town and city of the entire country had empiric cures of some kind at one time, buying the drugs from the promoters, administering the remedies for a time, until the number of relapse patients destroyed all confidence in the permanency and value of the work. Some of these specific cures still exist, and a few physicians who bought the rights are still giving the drugs with uncertain and decreasing results. One of the greatest of these charlatan efforts to cure the drug and drink taker merged into a gigantic swindle, reached out into business circles and among the high financiers, holding out most extravagant promises, and literally absorbed several million dollars, based on the most credulous dishonesty.

These promoters, like the former, opened up cures in the slum districts of large cities, treating all who would come, taking their promissory notes and turning these in as assets. At one time they exhibited millions of dollars in this form of security as evidence of the enormous percentage on the investments and on this evidence sold large amounts of stock. Then came the day of judgment, the promoters disappeared, and the poor victims, chagrined at their losses and stupidity, dropped out and were heard of no more. Out of the wreck and ruins of this great scheme, a few persons are selling prescriptions, treating cases, and advertising to give exclusive rights to persons who will buy and use their drugs.

Every now and then a new discovery is made in this field, heralded by a new name, but pressed on the community with the same mysticism, secrecy, and dogmatism. Drugs from abroad have come in, claims of discoveries in German laboratories, in the missionary fields of India, or of the highlands of Africa, all starting from the most insignificant origin and promoted along the same lines, depending on the assertions and statements of far off people. Every now and then, a good physician is found entangled in some of the curious, specific drug combinations. Occasionally he will defend his position,

describe the drugs used and their remarkable effects, and yet, when these are tested along lines of exact treatment, they fail.

Combinations of drugs discovered by some unknown man are asserted to have accomplished certain results, and these claims are supported by statistics and assertions that likewise fail to bear the test of time, and sooner or later disappear. They all seem to be founded on the theory that breaking up the alcoholic obsession is the cure, and all fail to recognize that there are a great variety of drugs well known to the profession that have the same effect, and are practically nothing but substitutes. Within the last two years the empirics have proposed a new two weeks' treatment. This differs in no way from others, except that the motor palsies and the derangement of vision after the treatment are more pronounced and severe, sometimes extending many months after. The same enthusiastic delusions of cure follow, but after a time they die out, and the patient joins the great army of relapsed cases.

In the meantime, the thousands of spirit and drug neurotics who have tried the various specifics, here and there, have all been registered, and lists of their names and addresses are on the market for sale. The man who has discovered a new remedy has only to buy this list of names and send circulars to them, with the absolute certainty of securing many of them as patients. Home cures, cures without the patient knowing it, drugs that will break up the desire for spirits at all times and places, are promoted and urged in all the great centres. Formerly the newspapers were the great medium for these cures, but now the circular and the private letter convey the news and enlist the patient.

The last and most astonishing advance in this empiric field of treatment is the "Three Day Cure." This has appeared in different parts of the country and, like the original gold cure, its claims are still more startling and its methods appeal yet more strongly to the credulous who are looking for marvels and miracles. Patients who take this cure, pay from \$100 to \$150 in advance, and with the receipt of the money are impressed in the most positive manner with the absolutely permanent cure which this new method will bring about, also assurances that it is the last great advance in medical discoveries. No one drug is asserted to be active, but a variety of drugs which are given hypodermically. The patient is put to bed, and on the nearby sideboard there is abundance of spirits, tobacco, fruits, and everything to tempt his appetite. Very soon purging, sweating, nausea, and vomiting follow. The spirits become very disgusting and repellent, and the affable nurse and doctor insist that this is evidence of the growth of immunity and the dying out of the obsession for spirits. The hours go on, with increasing physical and mental disgust, nausea, and depression, broken only by fitful sleep. Baths, rubbing, the application of water bags, and frequent hypodermics go on continuously, hour after hour. The bowels, the kidneys, and skin keep up most energetic action, and foods and drinks, particularly spirits, are loathsome to sight and smell.

The attending physician explains this in the most

convincing manner as evidence of a revolution and change in the organism. Finally, on the evening of the third, or the morning of the fourth day, the cure is pronounced complete and the patient is taken home, pale, anemic, and exhausted. He is now a free man, going out into a new world, having dropped all the past. The gratitude and joy of his escape overcome all discomforts. The nausea disappears, rest and sleep follow, and the conviction of cure is deepened. Possibly he may go out as a defender of this new mode of treatment, and announce through what sacrifices and misery he has passed to accomplish the great result of cure. The curtain drops at this point and the restored victim is rarely seen after.

The horse serum theory, in which horses are given spirits, and the serum is used for injections, has had a following, particularly in Paris and London. Unknown drugs, from plants supposed to be of little value, are exploited as having remarkable powers of restraint over the damaged cell and nerve. Cinchona bark, forms of arsenic, and almost every member of the belladonna family have been brought into service and tested for their specific value, always with uncertain success. A failure of the drugs is explained to be due to moral conditions and the carelessness of the victim, who allows his grosser passions and instincts to prevail, and this appeals to reformers and receives support and endorsement. Drive out the craze for spirits; then appeal to man's will power, are the central battle cries of the empirics.

The promoters of these various specifics are very largely persons who have been victims of this disease, and for various reasons, both mercenary and delusional, they seek to perpetuate and develop methods for the cure of others. Their exaggerated conceptions of the conditions to be treated, and the delusional egoism growing out of their own experience, are hidden rocks upon which they all wreck.

The old theory, that from experience, no matter however bitter, there come strength, discernment, and ability to comprehend and meet the situation, is urged as absolute and positive. This is not seen in any other department of human activity. Persons who have been insane, or who have suffered from acute mental diseases, do not excel as specialists in the care and treatment of others suffering from the same disorder. Persons who have suffered from severe surgical operations are not fitted by this experience to operate on others.

The mask of secrecy, and the efforts to control the manufacture of the drug and prevent others from knowing what it was, received a blow in the suit of one of these specific cures against another for the infringement of a copyright. In this suit, sworn statements concerning the drug and its combinations simply confirmed the inferences that had been made long before, and, as the suit was thrown out of court on the basis that both parties were fraudulent, the beginning of the end of the quack schemes appeared.

Empiricism in the treatment of inebriety still exists. The former credulous stupidity is passing away and the modern efforts are shrewder and have more of the air of scientific work. There are per-

sons to-day, both in and out of the profession, who aver marvelous results from certain drugs or drug combinations, but the same old secrecy and mysticism seem to linger. Evidently the empiric stage, although passing away, has brought with it indirectly a great change in public sentiment. The drink and drug taker is forced to take some kind of a treatment, and the former efforts along moral lines are receding. The impression prevails that there is physical help through medicinal use of drugs and other measures, and the victim to-day is forced to make an effort to secure help along these lines. The quack principle of demanding of all these persons an advance payment has a psychological value, in creating a desire in the patient's mind to secure some return or equivalent for what he has paid out. Then absolute obedience to certain rules and regulations is still more valuable as a psychic agent. Beyond this, the extravagant statements and dogmatic assertions fail to materialize and thus go far to neutralize the effects of the first methods of treatment.

While the empirics are dying away, it is sad to see members of the regular profession trying to perpetuate and continue the irregularity of the quack. The assumption that the drink and drug neuroses are only a temporary condition, which a few weeks of active treatment can remove, is unmistakable evidence of a very limited knowledge of the subject. The substitution of drugs, or combinations of drugs, to overcome or neutralize the obsession for alcohol and opium is farther evidence. When the subject is better understood, the absurdity of supposing that the subsidence of the alcoholic craze is a cure, will be evident.

The history of the empiric stage is not yet written, but there are in every section of the country illustrations of the failures and successes, not only of quacks, but of regular physicians, who have sought to break up this psychosis and point out methods of prevention, which indicate startling future possibilities. The few specialists in the field have urged that the disease of alcoholism and inebriety is both physical and psychical, and the breaking up of particular symptoms is on a par with checking pain in any part of the body by means of opium.

Vast ranges of causes from the past covering the whole period of life must be known and studied. The patient must be placed where these studies can be carried on with great exactness, in sanitoriums, workhouse hospitals, on farms, and in changed surroundings, where all the exciting and predisposing causes can be seen and prevented. That these cases, growing more and more numerous, are nevertheless curable, is supported by a great variety of evidence, also that the drink obsession is self limited and dies out of its own accord, or changes to some other symptomatic display of degeneration, is also apparent. Any one drug or combination of drugs, any one measure or particular method of treatment, must of necessity fail, because it cannot reach out to a condition so complex and so dependent on such a wide variety of causes.

A very interesting chapter is yet to be written on this stage of the great advances in our knowledge of the neuroses and psychoses.

FURTHER NOTES ON THE SANITARY CONTROL OF PROSTITUTION IN SOME EUROPEAN CITIES.

By FREDERICK BIERHOFF, M. D.,
New York.

(Concluded from page 633.)

The examinations at police headquarters, as stated before, are made by the police physician. The examination and treatment of patients suffering with venereal diseases, who may present themselves for ambulant treatment at the public cost, are in the hands of twelve physicians, who are appointed by the communal authorities, and who receive the annual salary of 2,000 Danish kronen, paid from the public funds. Not all of these public physicians are specialists. Each of them is required to keep office hours for the reception and gratuitous treatment of venereal patients, six times weekly, and of these two sessions must be during the evening. Two of the physicians are women, who examine and treat women only. These public physicians are required to treat, free of any charge, all patients who may present themselves during the hours specified, irrespective of the financial status of the applicant, and although the treatment of the applicant may require a time longer than the hour set for the consultation.

The annual medical report states that of all new cases of venereal diseases reported, forty-six per cent. were treated in clinics.

The instructions issued for the public physicians are as follows:

INSTRUCTIONS FOR THE PHYSICIANS APPOINTED IN COPENHAGEN, ACCORDING TO THE LAWS OF MARCH 30, 1906, PARAGRAPH 12, DIVISION 2.

I.

The physicians who are appointed to treat, at the public expense, patients suffering with venereal diseases, are required to examine and to treat, in case this may be done without internation in a hospital, at hours which are approved by the department of health, every individual in Copenhagen suffering with a venereal disease who shall apply to them, or shall be referred to them by the city physician upon the notification of a private practising physician.

It is forbidden them to ask, or to receive a fee from these individuals for examination or treatment. Patients who are not residents of Copenhagen are, in so far as conditions will permit, to be referred to their homes for treatment, in which case information of the fact is to be sent to the public or visiting physicians of such home community.

II.

Patients whose economic conditions are such that it appears to the attending physician that they may not be assumed to be in the position to pay for medicines, etc., will receive, free of charge, in every apothecary shop of this city, medicines, suspensories, syringes, etc., if the attending physician makes requisitions for these articles upon prescription blanks specially provided for such cases. Such prescriptions are to be plainly marked with the same serial number under which the patient has been entered upon the records of the physicians.

III.

Should a patient, who has of his (her) own volition consulted the communal physician, remain away from treatment without permission, then a command in accordance with Paragraph 6 of the law of March 30, 1906 is to-

be given to him (her) (upon the white form) stating a definite hour at which the patient is to appear. Should he (she) not carry out this order, then he (she) is, in accordance with Paragraph 13 of the aforementioned law, to receive a command (upon the blue form) to appear at a definite time. These commands are, as a rule, to be sent in registered letters. Should the patient who remains away from treatment be one who was referred to the communal physician by the city physician upon notification from a private, practising physician, then the command is, at once, to be sent to him (her) (upon the blue form), according to Paragraph 13 of the law.

IV.

Failure to conform with the command given according to Paragraph 13 of the law, is to be reported either directly to the third police inspector, or to him through the city physician.

V.

The physicians are required to keep a record furnished according to the requirements of the department of health, in which the patients are entered under serial numbers, with an exact report of the name, occupation, and dwelling, and with information concerning the nature of the disease, the number of consultations, etc. Should a patient receive medicines or similar articles at the public expense, then the prescription is to be entered under a special heading.

The record is to be open to the city physician, upon his request as the representative of the department of health.

VI.

Should a patient be referred from the public, ambulatory treatment, to a hospital for treatment, a report is to be made concerning the matter to the hospital upon a form provided for that purpose. Should a patient not appear at the hospital within two days after the hospital has received this communication, the hospital will, after consultation in this regard with the physician, send back the above mentioned communication with the information concerning the failure of the patient to appear, after which the physician will send the communication in accordance with Paragraph 13 of the law (on the blue form), and eventually the further steps which may become necessary will be taken, in accordance with the circumstances.

VII.

In the course of the first week of every month, every one of the communal physicians is to send to the city physician a report concerning his activities during the past month, with a bill for the fee due the physician for that month. The report, as also the bill, is to be made out upon the form provided for that purpose. The salary due the physician will be paid at the principal treasury of the city (daily between ten and two o'clock), within a few days after the presentation of the bill.

VIII.

The annual report for the calendar year, containing an abstract of the twelve monthly reports, is to be sent to the city physician, during January.

IX.

Furthermore, the physicians are required carefully to observe the regulations contained in the law of March 30, 1906.

X.

All of the forms mentioned in the foregoing law in these instructions, are to be obtained in the bureau of the city physician.

XI.

These instructions become operative in place of the instructions of November 10, 1906.

THE DEPARTMENT OF HEALTH IN COPENHAGEN.

April 1, 1907.

A perusal of the foregoing laws and regulations will show that they are, perhaps, the most comprehensive, enlightened, and far reaching of any laws relating to venereal diseases and their transmission. As a result of their provisions, it should be possible to preserve public order; to prevent in a great measure the transmission of venereal diseases; to pro-

vide for the adequate treatment of all venereally infected individuals, and to obtain a fairly accurate idea concerning the prevalence of these diseases in the kingdom; and if these laws are properly administered there should be, as a result, a distinct diminution in the amount of venereal disease in the kingdom; and if the contentions of the abolitionists and antireglementationists are based upon fact, then the abolition of brothels and police regimentation should have the effect of reducing the prevalence of venereal diseases.

In order to obtain an intelligent idea upon this side of the question, I questioned three of the best known authorities upon this topic in Copenhagen, one of whom was formerly in charge of the hospital for venereal diseases in that city, and two of whom are still connected in their official capacities with the institutions dealing with these diseases. Of these, the first mentioned said that it was impossible to say definitely, but he thought that the abolition of brothels and regimentation had *not increased* the prevalence of venereal diseases. The second made a similar statement, with the addition, however, that he could not say that he had noticed a decrease in the amount of venereal disease; and the third stated that it was his opinion that the abolition of regimentation and brothels had *decidedly increased prostitution and its resultant ills*, and that its principal effect had been to spread the former inmates of the brothels all through the city, where they now plied their trade in secret, under cover of the subterfuge of earning their living as store keepers, masseuses, servants, etc., their favorite trick being to keep little tobacco shops or stationers' stores. In his opinion, furthermore, the establishment of public stations or consultation centres, for the treatment free of charge of any individuals, no matter what their financial station might be, by the physicians appointed by the city, *had not been an unmixed blessing*, nor had it been possible to get absolutely correct reports by physicians of all of the cases of venereal diseases which they were treating.

My own observation in Copenhagen showed me that, while flagrant, open solicitation upon the streets is rare, the prostitutes, nevertheless, promenade the principal streets and frequent the principal resorts, and they still signal to men, just as they do in other cities. This observation was corroborated by inhabitants, with whom I conversed about the subject. There are also notorious resorts within a stone's throw of the city hall, and their existence is known to the police, who are, however, prevented from cleaning out these places because of a lack of direct evidence and because the proprietors have profited by one or two experiences and manage to keep within the letter of the law.

It was my privilege to witness the methods of examination of arrested individuals at police headquarters, to inspect the arrangements for gratuitous treatment by the physicians appointed for this work, of the venereally diseased, at the stations maintained by the city authorities, at the different parts of the city, and to inspect the hospital arrangements provided for the treatment of the venereally diseased.

At police headquarters three classes of individuals are examined by the police physicians, and these examinations affect men and women alike.

In the first class are the women arrested upon the streets for solicitation, or for prostitution, and the men arrested for pimping.

In the second class are those individuals who, while known to the police to be prostitutes, or pimps, give notice to the police that they have resumed "honest labor," yet whose work is not deemed sufficient by the police to support them without prostitution, or pimping.

In the third class are those males, or females, who are reported to the police to have transmitted venereal infection, or who are suspected of having done so.

The examinations, which are made at police headquarters, are complete, although no microscopic or blood tests are made at the headquarters. If the suspicion is aroused that the individual in question suffers with venereal disease, he, or she, is sent to the hospital where the necessary examinations are made.

Patients who are to be sent to the hospital are sent alternately to the two city institutions receiving venereally diseased patients—that is, all patients presenting upon one day are sent to the Kommune Hospital; those on the alternate days to the Rudolf Berg Hospital. Of these two hospitals the former has 200 beds for the reception of patients affected with skin or venereal diseases, while the latter has from 100 to 130.

The police physicians are on duty daily at police headquarters, at specified hours, to examine those brought before them by the police.

I had an opportunity to see the working of the system of examination of both males and females, one case being that of a pimp who had been accused of infecting a woman who had been arrested for prostitution. He was found to be syphilitic, and to have had knowledge of this fact, since there were records to prove that he had been treated for this disease and informed of its character. He was held at once at police headquarters, and I was informed that he would be kept in confinement until the trial of his case and that his punishment would be four months in prison, with the additional sentence of bearing the costs of the treatment of the woman whom he had infected and the payment of damages to her.

Persons guilty of knowingly transmitting venereal diseases are held to be guilty of a crime, and may be interned either in the hospital, as prisoners, or in the jail, according to the gravity of the offense.

Should a female arrested for prostitution or solicitation be under eighteen years of age (the age of consent in Denmark is sixteen years), she must be examined by a female physician. Any woman who declines to be examined by a male physician must be examined by a female physician appointed by the police and pay a specified fee for each examination. I was told that in only two or three cases a year did women refuse examination by the male physicians.

I was informed, furthermore, that it is expected

that the coming revision of the laws of 1906 will contain provisions designed to make possible a sanitary control of the prostitutes (and of men also)—without inscription—and that it is desired that persons who are suffering with syphilis of less than three years' duration shall be compelled to remain under the sanitary observation of the police.

Some idea of the prevalence of venereal diseases in Copenhagen, prior to the laws of 1906, may be obtained from the appended table, which is taken from the city physician's report for 1910, this having been kindly furnished to me by City Physician Doctor Hoff. The figures for the years 1882 to 1906 are given in totals for periods of five years in the report, and I have been obliged, therefore, to strike averages during these periods, while from 1907 to 1910 inclusive the figures are given for each year.

Cases of disease reported.	Gonorrhea.	Venereal sore.	Syphilis acquired.	Syphilis infection.	Syphilis congenital.	Total.
1882-86	29,141	7,575	7,167	55	368	44,306
Yearly average.	5,828	1,515	1,433	11	73	8,861
1887-91	23,732	4,317	5,279	157	457	33,936
Yearly average.	4,746	863	1,055	31	91	6,789
1892-96	20,823	3,045	5,302	186	279	29,535
Yearly average.	4,164	609	1,060	37	55	5,927
1897-1901	23,371	3,685	7,976	359	470	37,801
Yearly average.	4,674	737	1,595	71	97	7,173
1902-06	25,004	2,733	4,763	237	419	37,856
Yearly average.	5,000	546	1,492	47	83	7,171
1907	5,684	728	1,869	39	93	8,383
1908	6,320	1,164	2,349	63	61	9,957
1909	6,029	1,034	2,168	57	52	9,286
1910	6,076	848	2,330	39	55	9,378

An examination of the curves of all three of these diseases reveals a steady rise in the number of cases of gonorrhea up to 1883, when the maximum of 22.5 per mille of population was reached. Following this there occurs a steady decline to 1891, after which there were slight fluctuations until 1905, when the minimum of 11.25 was reached. Since 1906 there has been a slight rise, up to 14.25 in 1908. Thus, during the period of inscription, with the existence of brothels, the curve rose to its maximum and fell almost to the minimum, while immediately following the abolition of the brothels there came a decline to the minimum. At once following the abolition of inscription there was a sharp rise. Somewhat similar conditions exist with regard to syphilis and venereal ulcer.

The supporters of relementation will say that the rise in all of these curves since 1906 has been the result of the abolition of relementation and inscription. The abolitionists will say that it has been independent of these changes in administration, and that the fluctuations have been the result of the fluctuations in the prosperity of the country. Personally, I believe that both factors have played a part, for while the total number of venereal diseases reported has been upon an average higher since 1906 than before that time, the maximum was reached in 1908, when Denmark experienced its greatest prosperity. I must again remark that up to the present all statistics concerning the prevalence of venereal diseases in any country must be inaccurate, since so great a discrepancy exists in the methods of examination employed in diagnosing the diseases in question. Until all physicians reporting cases of venereal diseases shall have learned to base their diagnoses upon the exact examinations demanded by modern science, many

cases will be erroneously reported and many will escape detection.

A study of the conditions existing in Copenhagen cannot fail to impress one with the fact that the Danes have attempted to grapple with the problem of venereal diseases in the most enlightened and advanced fashion. They have made the venereal diseases reportable, yet not by name or address. They have made the knowing transmission of these diseases offenses punishable with imprisonment and liability for damages to the infected individual. They have made the treatment of these diseases compulsory and have provided adequate facilities for the ambulant cases, as well as for those requiring hospital treatment. Patients interned for treatment under such conditions are treated not as criminals and law breakers (unless they are convicted of a crime), but with the same consideration shown to other hospital inmates. They have provided for the compulsory examination of all individuals arrested for solicitation or prostitution, and compulsory treatment for those found to be venereally diseased. They have, therefore, done apparently all that can be done to provide for an intelligent fight to check the ravages of venereal diseases. What effect, if any, these provisions will produce, only years of patient work can show.

The fact remains, however, that the laws which are in existence in Denmark with regard to prostitution and venereal diseases and the transmission of the latter, are, in reality, relementation, and that of the crassest and most far reaching type. They are, however, the most just, I believe, of any of the laws in regard to this problem, since they make no distinction with regard to sex, social or financial position—which is as it should be.

Had the misinformed and misguided opponents of our Page law not succeeded, unfortunately, in having this law abolished before it could receive a fair test, it might have become possible for us to have brought about, eventually, the adoption of laws similar to those of Denmark. The Page law was, in fact, similar in its provisions to that portion of Denmark's laws which provides for the compulsory examination and treatment of those arrested for solicitation and prostitution, with the difference that the Page law's provisions were applied *only after the offender had been tried and convicted for the offense*.

The department of health of New York has recently passed a resolution in part as follows:

Resolved,

First, that on and after May 1, 1912, the superintendent or other officer in charge of all public institutions such as hospitals, dispensaries, clinics, asylums, charitable and correctional institutions, including all institutions which are supported in whole or in part by voluntary contributions, be required to report promptly the name, sex, age, nationality, race, marital state, and address of every patient under observation suffering with syphilis, in every stage, chancroid, or gonorrheal infection of every kind (including gonorrheal arthritis), stating the name, character, stage, and duration of the infection, the date and source of contraction of the infection, if obtainable, and

Second, that all physicians be requested to furnish similar information concerning private patients, under their care, excepting that the name and address of the patients need not be reported.

Third, that all information and all reports in connection with persons suffering with these diseases shall be regarded as absolutely confidential and shall not be accessible to

the public, nor shall such records be deemed public records.

In the letter accompanying the resolutions, the secretary of the department says, in conclusion: "It is realized that there is a large amount of work to be done in controlling these diseases, but it is felt that the steps above outlined constitute a firm foundation and represent a distinct advance over existing conditions."

I believe that I am able in the foregoing resolutions to detect the fine touch of one of our well known agitators in this field of endeavor, and I very much regret that the first steps of the authorities, in the attempt to obtain administrative control of these diseases, should have been of such a character that they are almost certain to defeat the ends sought. At the date of writing (May 23, 1912), the matter is under advisement in several institutions of which I have knowledge, and legal advice is being taken concerning the legality of the measures proposed. One authority has informed me that the measures are not legally enforceable as they stand. In spite of the assurance by the department of health that all information will be held absolutely confidential, I have serious doubts whether any physician, public or private, will be willing to report the *name and marital state and address of the patients* or the sources of the contraction of the infection in the particular cases, as the resolution requires. If these reports were required for statistical purposes alone, then the initials of the names without the addresses of the patients would have answered fully as well and would not lay the physician or institution making the report open to the possibility of suits for damages; and with regard to the reporting of the sources of infection, it may be said that the patient who gives this, with the knowledge that the information is to be transmitted to a city department, will not be likely willingly to lay himself, or herself, open to the possibility of suits for damages, involving, as such suits necessarily would, should a case of this sort be brought to trial, the necessity for bringing proof that the source given was really and positively the source of the infection; and I feel certain that if hospital patients should once get the knowledge that they are being reported by name and address to the city authorities, they would do everything possible to avoid that hospital treatment which is so much to be desired in cases of this character, and which those who come much into contact with venereal patients have been working so hard to obtain. The only ones to profit by the strict enforcement of the measures adopted by the department will be, it seems to me, the quacks.

It has also been reported that the department of health has obtained an appropriation for the establishment of a special hospital for venereal diseases; but, up to the date of writing, this project is chiefly noticeable for its nebulous character.

It seems to me that the first steps for the department of health to take, if it really wishes to be considered sincere and honest in its attempts to grapple with the problem of venereal diseases, should be the establishment and equipment of a hospital for the reception and proper treatment of patients of both sexes, and of all ages, afflicted with

venereal diseases, who may not be able to find accommodation in other hospitals; the passage of *unfortunates* from to compel every hospital, which requires financial support out of the city funds, to accept and treat cases of venereal diseases, without about the passage of *unfortunates* from providing for the medical examination of all individuals, men as well as women, arrested on the charge of venereal (which includes prostitution, solicitation, pimping, etc.), and to provide for the compulsory hospital treatment of individuals of this class found to be infected with venereal diseases. When this has been done, we might proceed to the reporting of all cases of venereal diseases, but without women.

The problem of the possibility of exerting a sanitary control over the factors responsible for the rapidly increasing spread of venereal diseases is too serious to permit of off hand decisions by individuals who have had no experience along these lines, and whose only knowledge of the subject has been gathered from the utterances of "news authorities."

It might be of value to the department of health, and to the health of the city, if the department detailed one of its members to make a personal and accurate study of the methods in use in various foreign countries to cope with the diseases in question.

I am greatly indebted to various authorities, medical and legal, in the different cities visited, for their kind assistance in the gathering of the material for this article—particularly to Dr. H. Levy, of Copenhagen, who generously devoted considerable time to aid me in the translation of the Danish laws and regulations—and I take this opportunity to thank them for their kindness and help and their many courtesies.

10 WEST SIXTY-FIRST STREET.

IMPORTANCE OF THE EARLY TRAINING OF MOTHERS IN THE CARE OF BABIES.

BY SIMON A. AGATSTON, M. D.

New York.

To appreciate fully the conditions which play an important rôle in the etiology of malnutrition, digestive disorders and high mortality of infancy and childhood in the poor and congested districts of the city, it is necessary to observe them, not alone by doing clinical work, but also by visiting the homes. Some years ago, while a member of the summer corps of the health department, I was strongly impressed by the absolute ignorance of the mother in the proper care of her children, which, it seemed to me, was the strongest etiological factor in summer diarrhea. It may be interesting to mention some of the gross errors committed by these mothers.

Regularity of feeding is practically never observed. If you ask the average mother how often she nurses her baby, the usual answer is: "Every two hours, every hour, whenever the baby is hungry." They generally answer in a manner that seems so likely that they think your question is irrelevant and has no connection with the baby's illness. The older infants are fed with the same

frequency as the younger ones. It is not uncommon to see gastrointestinal trouble in babies who get nothing outside of breast milk. The trouble may first begin through overfeeding or some disturbance of the breast milk on account of illness of the mother, nervous shock, etc. The baby will first suffer from indigestion and colic, which will cause it to cry frequently. Then, the mother, in her anxiety to quiet the baby, will put it to the breast as often as it cries, which, while pacifying the child for the moment, will make things worse. Irregularity of feeding in bottle fed babies will cause trouble more readily than in the breast fed. It sometimes happens that a nursing baby cries frequently owing to the above mentioned cause. Without consulting a physician, the mother decides that the baby is hungry owing to insufficient amount of breast milk, and proceeds to start the child, between the breast feedings, on artificial feeding of her own selection, with disastrous results.

Another gross error committed by the mother, is the indiscriminate feeding of babies with all sorts of improper foods, such as raw fruit, cake, candy, vegetables, insufficiently boiled cereals, etc. It is of common occurrence to see a young infant sitting in a high chair at the dinner table being fed by different members of the family who think it great fun to give the baby a taste of almost any article of diet, including even tea, coffee, and beer.

The dread of the second summer, which is accepted as a source of unavoidable evil, is almost universal. Some mothers refuse to wean their babies until the sixteenth or eighteenth month, expecting thus to meet the dangers of the second summer. They do not seem to realize that the mixed feeding is at all a factor in making the second summer dangerous. They may be giving the child at once breast milk, bottle milk, and mixed diet, yet they feel that the fact that it has not been weaned altogether protects it from the evils of the second summer. The constant use of pacifiers is another source of trouble, especially as these are anything but scrupulously clean. The artificial feeding consists principally of store milk, canned condensed milk, and Straus's pasteurized milk.

In the face of these facts, it is no wonder that the gastroenteritis, rickets, scurvy, and malnutrition, all of which contribute toward the high mortality, are so commonly found among these babies. To combat these existing conditions successfully, it is necessary to educate the mothers persistently and systematically. This cannot be attained by lectures, which the mothers who are most in need of enlightenment will not attend, but by individual instruction. This can be easily accomplished by the health department, which could send their inspectors to the homes from which births are reported, within three weeks following the report. Only the homes in the poor districts, where medical attention is inadequate, would have to be visited.

The proper care of infants could be taught in a brief and concise manner. The following points must be strongly impressed:

1. Daily bath.
2. Plenty of fresh air.
3. Feeding at regular intervals of not less than three or four hours; nothing except water between feedings. When the baby cries it does not always mean hunger.

should be no meat, nor meat soups, for several months; this means fish, beast, or fowl, no tea nor coffee, and if these rules are carefully observed, good results should follow.

REIMPLANTATION OF THE PATIENT'S CARTILAGE AFTER SUBMUCOUS RE- SECTION OF THE SEPTUM FOR CORRECTION OF OBSTRUC- TIVE LESIONS.*

*Preliminary Communication with Presentation of
Patients after Operation.*

BY SAM GOLDSTEIN, M. D.,
New York.

With no pretense of originality, but rather the desire to invite discussion and criticism upon the results so far obtained in a small number of cases operated in recently, before the presentation of the patients, I will preface, in a rather sketchy manner, the simple operative technique with the cause of its adoption, and what the operator, theoretically at least, anticipates as end results. In repeating the statement that no claim of originality is made the writer wishes to say, that if this procedure has been employed by other surgeons he had no knowledge of the fact. He has simply applied and broadened the suggestions of Dr. P. G. Goldsmith, of Toronto, who replaces a part of the septal cartilage when a buttonholing of the mucoperichondria results during the resection; he also does this in the plastic operations for old perforations of septal cartilage.

During the operation in my first case of this series (on one of my assistants, Doctor R.) on January 27, 1912, two months ago, I found the septal mucoperichondria riddled with small birdshot-like perforations and a one quarter inch ulceration of the right mucoperichondrium, in which naris the greater deflection appeared, about its posterior middle portion. Great care had to be exercised in the elevation of both mucoperichondria to avoid lacerations, especially about the ulcerated area.

The thought then occurred to me that there could be no logical reason why I should not replace the entire removed septal cartilage to protect, as much as possible, these perforated mucoperichondria, instead of employing the customary procedure of introducing a small piece to fit in at the ulcerated site. As part of the technique customarily followed, I placed the removed septal cartilage in warm normal saline solution, and at the completion of the operation, before applying my splints to the mucosa, I carefully replaced the patient's entire cartilage between the perichondria, and then dressed the nares as I had done in all of the previous resections. I explained to the doctor that if any untoward symptoms, pressure or ulceration should ensue, the cartilage could be readily removed by reopening the initial incision.

When you examine this case, you will observe that this simple procedure employed in the resection of two months ago with the replaced cartilage still *in situ* has markedly assisted in obtaining a good

result, so far, at least, preventing perforations, adding to the strength of the bridge, improving the appearance of the mucous membranes, and with no sacrifice of the alignment of his septum. With this result in mind there seemed no adequate reason why, if this procedure proved so successful in so severe a test, I should not employ the septal replacement as part of the technique in future resections. After waiting a reasonable length of time to judge of the result in the case mentioned, I began to carry out this plan in all suitable cases. Later I will present the patients operated upon in this manner. At that time I wish that you will observe particularly that healing has resulted as perfectly as in those cases where no replacement of cartilage was employed. To summarize:

1. As we remove all bony deflections and irregularities of the vertical plate of the ethmoid and vomer and deformities of the maxillary ridge, and then replace the removed cartilage, our septal line is straight and should result, if the cartilage remains where placed, especially where a considerable portion of the cartilage is removed as in high deflections, in a stronger bridge than where this is not done, and prove a source of greater security against a possible sunken or froglike nasal deformity.

2. We should operate with less fear of risk in children if we could replace their removed cartilage with any assurance of its permanence. We have always exercised great care in septal operations in children before the face has reached full growth, in consideration of the fact of the small chance of cartilaginous reproduction when the cartilage focal growth islands have been removed. McKenty's septal resection in children is a splendid conception, but it is a difficult and bloody procedure, entailing the employment of a general anesthetic for its successful performance, while we seldom are required to do this in the majority of our septal cases.

3. We must clearly keep in view the fact of the very meagre vascular supply of the cartilage, that there are no intrinsic nutrient bloodvessels except from the adjacent perichondria and bony attachments.

4. Having repeatedly observed an improved collateral circulation following septal resections, enriching to a surprising extent the former anemic septal mucosa, may we not reasonably anticipate in time, with proper postoperative care, that offshoots from the septal perichondria and the bone nutrient vessels might nourish the replaced cartilage?

5. Should there be any reason for not replacing the cartilage in the exact state as when removed, we can trim it to suit the conditions present.

6. As I have stated, the usual operation having been performed, the removed cartilage (if possible with a Ballenger swivel knife in one piece and very little handled) is then placed in warm normal saline solution, and upon completion of the operation, and nares having been cleansed, the patient's cartilage is carefully replaced through the initial incision, between the perichondria. Suture the flaps, if you desire, and place packing in nares with as little disturbance of the mucoperichondrial flaps as possible (especially if not sutured).

7. In conclusion, I may add that should the cartilage be absorbed in time and replaced by fibrous tissue, as reported by some observers, by this pro-

*Presented before the Clinical Society of the New York Throat, Nose, and Lung Hospital, March 12, 1912.

cedure of replacement we have assuredly provided a stronger bridge (simulating an imaginary builder's jack in some cases).

As the other five cases are before you for observation and discussion, I will not take up the time of the meeting by reading their histories. I hope, however, to present at some future time these patients, as well as others operated upon in the same manner, so that we may better judge if our anticipations have been realized.

1211 MADISON AVENUE.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXVI.—How do you treat bronchial asthma? (Closed September 16th.)

CXXVII.—How do you treat pruritus vulvæ? (Answers due not later than October 15th.)

CXXVIII.—How do you treat infantile convulsions? (Answers due not later than November 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to Question CXXV was awarded to Dr. Estill D. Holland, of Hot Springs, Arkansas, whose article appeared on page 642.

PRIZE QUESTION CXXV.

THE TREATMENT OF GONORRHEAL RHEUMATISM.

(Concluded from page 643.)

Dr. Dwight Gordon Smith, of Washington, D. C., remarks:

The treatment of gonorrheal rheumatism should be considered from various angles, as so many factors are involved that the condition presented becomes a very complicated one. The treatment of any disease demands prophylactic measures; hence, in order to prevent this disease which is of gonococcal origin, we must stamp out all sources of gonorrheal infection. This is accomplished by educating the public to the dangers of venereal diseases and also to their prevention. The prevention of gonorrhea after exposure as practised in the United States navy should be taught.

The exciting cause must be eradicated by thoroughly curing all lesions in the genitourinary tract acute and chronic. If this is not carefully carried out the urethral tract will become a nidus of infection, constantly sending emissaries of disease and destruction to the various joints. Dr. Eugene Fuller believes that most cases of gonorrheal arthritis are

caused by seminal vesiculitis. This must be cleared up, therefore, before we can expect a cure of our cases. This is not the place to take up a full description of the treatment of urethral gonorrhea. Suffice it to say, all lesions of the urethral tract must be treated by appropriate measures, such as irrigations, instillations, or even operation, if indicated. No cure is complete until the genitourinary system is free from infection.

The treatment of the arthritis resolves itself into two divisions: Symptomatic, and the use of bacterin. Four severe symptoms are usually noticed, pain, fever, rigidity, and swelling, all of which require immediate attention. Rest is absolutely necessary. The patient should be put to bed, a restricted, but nourishing diet ordered, and a saline aperient given. If he is suffering great pain, a hypodermic injection of morphine may be given, or opium by mouth. Hospital treatment, if feasible, is better. The joint should be immobilized with pillows, at first, and dressings soaked in cold lead and opium wash applied. Ichthyol ointment may be used during this stage. If fluid appears in the joint in a later stage, various therapeutic measures are employed, such as steaming the joint, dry heat with the hot air apparatus, the Biers's hyperemic treatment by vacuum cups and air pump, and the thermocautery. The choice of these depends on the case and its state of progress. If fluid persists, or a septic condition intervenes, the joint should be opened under the strictest asepsis, irrigated with bichloride solution, and closed.

I employ the bacterin treatment in all cases of gonorrheal rheumatism, acute or chronic. When I first see the patient I usually inject fifty million of the Neisser bacteria. If the reaction is not intense and the improvement not marked, at the end of five days I inject one hundred million of the dead bacteria, and in five to eight days, two hundred million, and sometimes carry it up to four hundred million, depending entirely on the case. The bacterin is generally administered at intervals of five to fourteen days, according to the nature of the case. The site of injection selected is in the muscles of the buttocks. I sterilize the skin with tincture of iodine and inject the bacterin. I am very enthusiastic over the bacterin or, as some call it, the vaccine treatment, and hope that further improvements will make it a specific for gonorrheal rheumatism.

To resume: 1. Rest in bed; 2, local support, splints, etc.; 3, general hygienic treatment; 4, prophylaxis; 5, relief of pain; 6, operation, if necessary; 7, local measures, such as massage, passive movements, dry heat, etc.; 8 bacterin or vaccine treatment.

Dr. Louis J. Spivak, of Philadelphia, writes:

In cases with systemic manifestations, rest in bed, internally calomel, plenty of water to drink, and salicylates may be tried, though unavailingly; locally, applications of cold, a solution of lead water and laudanum. Put the joint on a splint, or even better, strap it with adhesive plaster. Blistering with cantharidal collodion has done good. Later, as inflammation recedes, you institute massage to free from adhesions. If the joint suppurates you will have to open and drain it.

In the chronic cases there is little use bothering with internal treatment. Treat the joint condition with applications of hot water; ichthyol ointment, twenty-five per cent.; baking; strapping. Bier's method of passive hyperemia has done good. In both the acute and chronic cases you must treat the gonorrheal condition of urethra, prostate, or seminal vesicles. In conjunction with this treatment, or entirely alone, you may use either the antigonococcic serum or the antigonococcic vaccine. Both are to be injected with aseptic precautions; it is best to use an all glass syringe and inject either subcutaneously, or better intramuscularly, using the gluteal muscles.

Antigonococcic serum is made by repeated inoculations of, first, dead gonococci, and then living ones into the ram or horse. When the serum is deemed of sufficient strength, the animal is bled, and the serum separated from the clot. This serum is put up in ampoules of two c. c. capacity, one ampoule constituting a dose.

A reaction usually follows after the injection, which may consist of localized pain at the point of injection, or of a feeling of malaise, anorexia, or sometimes of a constricting sensation around the chest. Sometimes an urticaria develops. Reinjections are made with an interval of two to three days, depending on reaction and the effect on the disease. Later, as symptoms are controlled, injection may be given once a week for a month to several months until cured.

The serum treatment will not shorten the febrile period, neither will it give immunity, as other joints later become involved after a series of injections. The same is true of the vaccines.

Antigonococcic vaccines or bacterins are dead gonococci that are specifically prepared for injection. There are two kinds, the polyvalent and the autogenous. For polyvalent vaccines, the gonococci are obtained from one or more cases other than that of the patient on whom they are to be used; the autogenous vaccines are made from gonococci or mixed cultures, grown from the secretion or discharge of the patient himself. A little secretion is collected from the urethral discharge, or after prostatic massage, and cultured on blood smeared agar, or Loeffler's medium. A twenty-four to forty-eight hour growth at 37° C. is used. The growth is washed off with two c. c. of normal salt solution and an emulsion is made. The bacteria in one c. c. are then estimated by taking a little drop of this emulsion and a drop of blood, of which the red blood count is known, mixing the two, spreading and staining and then counting the ratio between bacteria and cells. Heat your emulsion to 60° C. for an hour and your vaccine is ready for use. I inject the vaccines as near as possible to areas involved, if not just over the lesions themselves.

After the injection, the negative phase, or reaction develops. This may vary from a feeling of malaise to profound depression and a rise in temperature. Renewed urethral symptoms may appear, with discharge and/or urine, cloudiness of urine, and even posterior involvement with development of prostatitis, epididymitis, or orchitis.

Locally in the joint there may be seen an increase of swelling and pain. This subsides in one or two

days, and then the positive phase appears, when the patient feels a great deal better and all symptoms lessen.

Small doses do as much good as large ones. Five to ten, or even up to fifty million gonococci, every three or four days for several injections, and then less frequently as symptoms subside, have done wonders. Always be sure to wait until the negative phase has disappeared before giving another injection.

In the intervals between the injections it is best to give massage to the joint, electricity, and tonics internally.

Summing up then, if the patient has acute symptoms order him to bed, place him on palliative measures mentioned, and use the antigonococcic serums or vaccines. The consensus at present seems to be to use the serum in acute cases with gonococchemia, and the vaccines in the chronic cases.

In using the vaccines while good results have been noted with both the polyvalent and autogenous varieties, the autogenous bacterins have a shade the better of the argument. The serum and vaccine have been used, interchanging from one to the other in both acute and chronic gonorrheal rheumatism. In addition be sure to treat the genitourinary condition by irrigations with potassium permanganate one to 3,000, etc. Also massage the prostate gland, which not only clears up the clogged up secretion, but also sets free numerous gonococci into the blood, forming a self made autogenous vaccine. Massage the joints and muscles to break up adhesions. If ankylosis has formed no treatment will avail.

Dr. S. J. Essenson, of New York, observes:

Treatment is usually more palliative than curative, and each and every case must be treated on its own merits. But generally, it is my system to pay special attention to the local affection of the urethra and continue to treat the urethritis, for the sooner the latter improves, the sooner the "rheumatism" will yield. As a rule the pain is severe enough to keep the patient in bed and the rest in bed is imperative. Morphine hypodermically is sometimes necessary to quieten the pain. I usually inject the antigonococci serum; the vaccine did not work as well in my cases. In many cases the severity of the inflammation and pain will be lessened by the injection. If the discharge is stopped I let the urethra alone and administer urinary antiseptics internally. In affection of the knee or ankle joints immobilization is often the best. Red heat or Paquelin cautery, leeches, or other counterirritation must sometimes be resorted to and is often very serviceable. After the acute stage is over, electricity, faradization, or static electricity is indicated. Especially after immobilization, the joint must be massaged to relieve the ankylosis.

Internal treatment consists of a strict milk diet during the stage of severe inflammation. Mercury and potassium iodide are prescribed by many physicians, but I think is of little value in gonorrheal affection of the joints. Anemic people ought to have iron, arsenic, strychnine, etc., but in gouty and rheumatic individuals the salicylates must be given. Each case must be treated in accordance with the constitution of the patient, for which no hard and fast rules of treatment can be outlined.

Correspondence.

LETTER FROM EDINBURGH.

Edinburgh University: Retirement of Professor Greenfield.—New Professor of Pathology.—Aberdeen University: Chair of Medicine.—British Dental Association Meeting in Glasgow.—Medical Service in the Highlands.—Edinburgh Royal Infirmary and the Insurance Act.

EDINBURGH, September 12, 1912.

Dr. W. S. Greenfield, professor of pathology in the University of Edinburgh, has tendered his resignation to take effect from the end of September. The chair has been given to Professor J. Lorrain Smith, of Manchester. The new professor comes to Edinburgh with an excellent record of good scientific work, and there is no doubt he will ably fill the place of the very popular professor who is retiring.

The chair of medicine in Aberdeen University has also fallen vacant through the retirement of Dr. D. W. Finlay. Dr. Ashley Watson Mackintosh, an Aberdeen man, has been appointed regius professor of medicine in Doctor Finlay's place. Doctor Mackintosh has been lecturer on clinical medicine at the Aberdeen Royal Infirmary, and has made numerous contributions to medical literature, which have dealt chiefly with neurology.

The thirty-second annual meeting of the British Dental Association was held in Glasgow in the early part of August. Thirty-five years have elapsed since this body last met in Glasgow, and the welcome given to the 350 delegates who attended was very cordial. Mr. W. A. Rhodes, of Cambridge, was unanimously made president elect of the association. The executive committee submitted a memorandum on the importance of dental treatment of tuberculous patients and the conditions of appointment of dental surgeons to institutions. Reference was made to legislation relating to dental practice and to the bearing of the insurance act on the work of the dental profession. The report concluded with a reference to the inspection and treatment of school children, stating that while it was pleased with the sympathetic attitude of Sir George Newman, chief medical officer of the Board of Education, it was, nevertheless, unhappily true that the needs of the great majority of the six million school children of the United Kingdom were still unprovided for.

A committee recently appointed by the treasury to investigate the adequacy of medical service in the Highlands of Scotland has been holding meetings in some of the more northern centres. Much of the evidence taken has had reference to tuberculosis, which is very prevalent in the outlying parts of the Highlands. Phthisis is one of the most important difficulties to be faced in connection with the question of adequate medical attendance, in regard not only to its early detection, but to its adequate treatment. It appears that many of the cases seen by medical men in those parts are too advanced for recovery, and it has been suggested that special tuberculosis officers be appointed with a view to detection of early cases. The question of adequate medical service in other directions is also an acute one. Homesteads are scattered, and in winter dur-

ing the severe snowstorms so prevalent in that region, the hardships undergone by medical men are very severe, and the remuneration is most inadequate in the circumstances.

The board of management of the Edinburgh Royal Infirmary have decided, after considering representations made to them by the medical and surgical members of the honorary staff, to effect important changes in the administration of the institution, in order to meet the new conditions which the National Insurance Act has created. In order to safeguard the institution from exploitation by unscrupulous persons, especially now that the question of medical benefit under the act is in a critical state, it has been decided as follows: 1. Members of the honorary staff shall not be under any obligation to meet in consultation with any outside practitioner; 2, to consider carefully the question of reviewing or inquiring into the circumstances of those who apply for admission to or assistance from the infirmary; and, 3, that insured persons, since they are entitled to the medical benefits provided in the act, should not be attended to in the outpatient departments of the institution. It is provided that assistance, attention, and treatment shall not be withheld in cases of urgency and accidents, and that consultations may be undertaken in suitable cases.

Therapeutical Notes.

Turpentine in Obstetrics.—Bonnaire and Charrier, in *Quinzaine thérapeutique* for April 25, 1912, recommend the use of oil of turpentine as a disinfectant of the uterine cavity, particularly in cases where iodine has failed to give the expected results. The turpentine is applied to the endometrium with sterile gauze, and a stream of sterile water kept running through the vagina during the procedure in order that any of the oil escaping from the uterus will not come in contact with the vaginal mucous membrane. Charrier has used turpentine in this way in a number of cases without ever noting untoward effects of any kind. A pronounced fall of the temperature often followed the treatment, and the fetid odor of the lochia very promptly disappeared. Involution of the uterus was observed to occur more quickly than after the use of iodine.

Removal of Freckles.—*Paris médical* for April 27, 1912, recommends that the freckled areas be washed, morning and evening, with about a teaspoonful of the following solution:

R	Hydrargyri chloridi corrosivi,	1 gramme;
	Zinci sulphatis, ..	.....2 grammes;
	Plumbi acetatis, ..	.....2 grammes;
	Alcoholis,	50 grammes;
	Aquæ destillatæ,	300 grammes.
M.	ft. solutio.	

An ointment containing zinc oxide should be kept in contact with the parts overnight.

Treatment of Fissured Eczema.—G. Norman Meachen, in the *Practitioner* for May, 1912, refers to this condition as a troublesome type of eczema seen upon the hands, aggravated by cold and exposure to irritating substances, including soap. Very small fissures may be filled in with collodion, while

slightly larger ones can be painted with pure phenol. The latter agent causes a little pain, but this soon passes off and the numbing effect of phenol asserts itself. Lassar's paste (Pasta zinci Lassar, N. F.) may then be applied, the hand being wrapped up in lint or at least covered with a glove.

Ichthylol and salicylic acid are both useful in eczema of the palms, while in the case of the fingers, Unna's zinc and sulphur paste, kept constantly in contact with the parts, is often most beneficial. It is made by mixing equal parts by weight of zinc oxide, precipitated sulphur, prepared chalk, linseed oil, and lime water, and should be rubbed in at night, the hands being covered up with gutta percha tissue and the whole fixed with a bandage.

Treatment of Empyema.—Henri Dufour, in *Bulletins et mémoires de la Société médicale des hôpitaux de Paris*, June 20, 1912, presents a new method of ascertaining the indications for pleurotomy in empyema, which takes into account a fact brought out in 1906 by Widai and Gougerot, viz., that in pneumonic and cardiac patients an aseptic purulent pleurisy sometimes develops, the prognosis of which, without operation, is entirely favorable. Although this form of empyema is particularly characterized by an absence of degenerative changes in the polymorphonuclear cells, Dufour finds it simpler to decide for or against pleurotomy according to the presence or absence of micro-organisms. Smears of pus obtained by exploratory puncture are fixed and stained with carbolized methylene blue and examined. If bacteria, which, when present, are numerous, are found, pleurotomy is indicated. If not, the operation is unnecessary; at most, a simple puncture, to give the patient relief for the time being, may be required in a certain proportion of cases.

While Dufour does not aver that these indications hold good absolutely in every case of purulent pleurisy, since, to his knowledge, a patient with putrid pleural disease recovered without pleurotomy, he presents evidence in the form of case records to the effect that exceptions are but rarely met with, and states his belief that the simplicity of the procedure advocated will render it of value to the general practitioner.

Treatment of Dilatation of the Aorta.—Decloux and Gauduchau, in *Bulletins et mémoires de la Société médicale des hôpitaux de Paris*, May 9, 1912, report two cases of dilatation of the aorta, in a man of forty-seven and a woman of fifty-two years, respectively, in which injections of 0.2 gramme of salvarsan caused prompt and complete disappearance of the severe endothoracic pains from which these patients suffered. The Wassermann reaction was positive in both cases; hence the changes in the aorta were probably due to syphilis. In the first case, the pain reappeared at intervals of one and two months after injections of salvarsan, three injections in all having so far been given; two months after the third injection, pain was still absent. In the second case there was five months' freedom from pain before a second injection had to be given. The size of the aortic dilatations was not reduced by the salvarsan treatment; the relief procured was apparently due to some influence exerted

by the drug on the accompanying periaortitis, itself the chief cause of the pain. Queyrat, discussing these cases, advised that the salvarsan injection be followed by a course of potassium iodide in large doses, in order to reduce the size of the dilated vessel.

Treatment of Spastic Bronchitis.—F. Göppert, in *Berliner klinische Wochenschrift* for April 22, 1912, reports good results in the bronchitis associated with a spastic condition of the musculature of the air passages in young children from the use of ethyl carbamate (urethan). The pronounced restlessness and cyanosis accompanying the condition are especially favorably influenced by the drug. In infants less than three months the dose recommended for internal use is 0.5 gramme, in the first year 1.5 gramme, and in the second year two grammes. Where the drug is given by rectum, the dose should be increased from fifty to 100 per cent. Repetition of the dose is permissible after forty-five minutes. The drug is both effective and devoid, for practical purposes, of the dangers attending the use of chloral hydrate.

Treatment of Acute Gonococcal Arthritis.—Félix Ramond, in *Progrès médical* for April 13, 1912, reports having obtained good results in cases of acute gonococcal arthritis of moderate severity by subcutaneous injection of the fluid obtained by puncture from the involved joint. After disinfecting the skin with tincture of iodine, the joint is evacuated and ten c. c. of the fluid obtained set aside. Sterile air is injected into the joint in amount equal to the fluid removed, and also into the periartritic cellular tissues. The subcutaneous injection of fluid from the joint is then given, after which the joint is firmly bandaged and placed at rest in a trough. As soon as pain permits, mobilization and massage of the joint are practised. The puncture and subcutaneous injection of fluid are repeated every six or eight days, if required.

The effect of the treatment is to diminish the pain and swelling, cause the effusion to disappear, and prevent ankylosis and atrophy in all but rare instances. Some cases were cured by a single injection; only exceptionally were favorable results not noted after the third injection.

The danger of infecting the patient by injecting the intraarticular fluid is but slight, as it is well known that the gonococcus disappears from the joint within a few days after its involvement. All risk, moreover, can be eliminated by heating the fluid to be injected to 45° C. for half an hour; the fluid preserves its biological properties, but contains no more living gonococci.

Treatment of Obesity.—E. Borron, in *Progrès médical* for May 11, 1912, observes that many obese patients, when subjected to dietary restrictions, suffer considerably from the sensation of hunger. This may be allayed either by the ingestion of more or less large amounts of salad or by taking one or two of the following powders.

R. Calcii carbonatis præcipitati, 2.0 grammes;
Magnesii oxid., 0.1 gramme.
M. et pone in chartulam No. 1. Ft. tales No. 25.
Sig.: Take one or two powders in one quarter of a glassful of water.

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THE MILK QUESTION IN LARGE CITIES.

In his monograph on the Milk Supply of New York City, Commissioner Lederle introduces facts and conclusions of vast interest to public welfare. A review of this praiseworthy document, a part of which was read before the recent Congress of Hygiene and Demography, being impossible within the space at our disposal, we shall comment briefly upon those of its features which appear to us of special interest.

The system of grading the milk supply, which Doctor Lederle advocated as far back as 1907, is an ideal one. As the result of a careful inspection by members of our editorial staff of plants in which the intents and purposes of the system are carried out rigorously, we can vouch for the efficiency that such a system entails. Every resource that human ingenuity has so far devised is brought to bear to such a degree that "Grade A, for Infants and Children," can truthfully be said to meet the most exacting requirements. Grade B, notwithstanding the inferiority its class suggests, is none the less entitled to the fullest confidence. The milk is supplied by farms subjected to frequent inspection. It is then strained and filtered, and the cans and bottles are sterilized by steam in central plants in which

every detail of the process is carried out by trained men in a manner which would do credit to medical men of a high class hospital. Nothing is left to chance, the milk being subjected to constant bacteriological supervision. The public is served and the health of infants and children is protected as our commissioner would have them served and protected. This is the plan *par excellence*. Plants such as those visited are available models for all those who assume the great responsibility of supplying milk to the public. No milk inferior to these would doubtless exist, were it possible, in keeping with the commissioner's programme, to enforce adequate and uniform standards throughout the State. But insufficient appropriations by the latter render this impossible for the time being, and although much progress has been made (the number of inspectors, for instance, having risen from two in 1904 to fifty-six in 1912), much of the milk admitted into New York city, even though graded A and B and sold under permits granted by the board of health, is still sufficiently subject to suspicion to impose the need of pasteurization. The latter process removes what lurking danger may exist and thus furnishes a comparatively safe milk for the masses at a price within their means.

When we come to Grade C, a remarkable paucity of precautionary measures is noticeable. Apart from the perfunctory and often wilfully misleading statements incorporated in applications for permits to sell milk and cream, this grade is exempted of all requirements which render the higher grades safe for consumption. "Milk of this grade may be sold," according to the sanitary code, "to restaurants, hotels, and manufacturing plants only." What quantities of polluted, infected, and infectious milk must reach the stomachs of restaurant and hotels patrons—including, obviously, infants—under such conditions, may be surmised. Indeed, cans containing Grade C milk, reads the code, "shall be painted red on necks and shoulders," an appropriate color to denote danger! We can readily understand Commissioner Lederle's hope to witness "practically universal pasteurization" under these conditions. Grade C milk is a public menace of no mean order.

What the future has in store for New York as a result of her commissioner's efforts may in a measure be predicted. The development of ideal plants such as those visited by us will be encouraged, in order to insure, under adequate supervision, an ever increasing production of what no one sufficiently informed would refuse to consider as the most sanitary of all milks, those graded "A, certified or guaranteed and inspected (raw)," and "B, selected (raw)." In the meantime, all suspicious

milks, including especially Grade C, will be subjected to pasteurization—a process which the city itself might well undertake, charging a small fee for each gallon thus treated to avoid absolute dependence upon maintenance appropriations.

That pasteurization is but an expedient not devoid of disadvantages, however, is well known. Laboring under the impression that it will render milk harmless whatever happens, the farmer becomes careless, less particular, and indifferent, thus defeating all efforts calculated to improve his dairy methods. Any milk, whether fouled or infected, swill milk, etc., is the equal of pure milk in his eyes, after the "cooking" process is over. Again, while destroying what germs are present, pasteurization enhances the efficiency of milk as a culture medium by reducing its bactericidal properties—a fact which causes it to become harmful much sooner than raw milk under similar conditions. While raw fresh milk was found by Evans and Cope, for instance, to show an actual bactericidal effect when artificially inoculated, the number of bacteria (the streptococci, the staphylococci, and *Bacillus coli*) showing an actual decrease up to the eighth hour, no reduction occurred, excepting in the case of the streptococci, in the same inoculated milk when it had been previously heated up to 55° C., which is five degrees below the minimum temperature required for pasteurization. When we add to this that it does not destroy toxines or other harmful products of bacterial growth, it is obvious that pasteurization is but a temporary though valuable makeshift which must eventually be set aside when Commissioner Lederle's plans are fully carried into effect.

SOME PHASES OF THE INTERNATIONAL CONGRESS ON HYGIENE.

On the whole, the International Congress on Hygiene and Demography, held recently at Washington, may be characterized as a great success. Perhaps there was somewhat of a plethora of papers, and in consequence no time for discussion, decidedly a matter for regret; but, on the other hand, the general arrangements were excellent. The provision of books containing adequate abstracts of the papers to be read and given out before the sessions opened, was a departure highly to be commended. The personal concern evinced by the President in the proceedings of the congress was greatly appreciated by all, especially by the foreign delegates, and this appreciation was intensified by the eloquent and practical speech delivered by Mr. Taft in opening the meeting. Particularly were

his remarks anent the creation of a National health department approved by the American delegates, and his suggestion that the splendid Public Health Service might be taken as a nucleus from which such a department might be formed was received with acclaim. The President's hearty support of the meeting from the social point of view added the éclat necessary for its complete success.

The programme was very long, but naturally there were points of outstanding interest. The sections most remarkable for papers of living, vivid moment were those dealing with diseases of occupation, with child hygiene, and with certain preventable diseases of children. In this age, so given over to industry, the study of the causes and prevention of industrial disease is obviously a question of the first importance, and it may be said that the subject of diseases of occupation was fully threshed out by some of the most eminent authorities of the world.

Perhaps, of all the sections, that devoted to child hygiene was the most important, as it was the fullest and most diversified. There is no more hopeful sign in these material times than the awakening of the public conscience with regard to the care of the child. The fact is now thoroughly recognized that as the trend of population is toward the cities, upon the proper upbringing of the child depends the future of the race; thus it is not so much an awakening of the public conscience as a realization of the disastrous effects which must assuredly follow a continuance of a neglectful policy with respect to the child. In the large cities of France, Great Britain, and Belgium this constructive work regarding the child has been carried on for some considerable time with most satisfactory results.

Another question of paramount moment is the relation of infant mortality to the employment of mothers, and this branch of infant hygiene was treated at the recent congress with the consideration which is its due.

An especially interesting feature of the congress was, not so much its cosmopolitan character which was to be expected, but the dominance almost of the German element. Of the foreigners present the Germans were the most numerous by far, and German hygiene was represented by some of her most distinguished exponents. The meeting throughout was marked by good feeling, and the axiom that science has no country was well exemplified. America has every reason to feel proud of the success of the meeting just over, and also of the fact that she has amply demonstrated to the world that she occupies a position in the van, so far as preventive medicine is concerned, and that her teachers of hygiene are second to none.

THE TRANSMISSION OF POLIOMYELITIS.

One of the most important announcements made at the recent International Congress on Hygiene and Demography was that of Professor M. J. Rosenau, concerning his successful experiments on the transmission of poliomyelitis. Like most others who have studied the epidemiology of this disease, Rosenau began by believing poliomyelitis to be spread more or less directly from person to person, and this view received strong support from the work of Flexner, who demonstrated the presence of the virus in the nose and throat of infected individuals. The first circumstance which shook Rosenau's faith in the correctness of this theory was a series of eighteen negative results in attempts to prove the presence of the virus in the nose and throat; other observers had also had many negative results. The second fact was that children in all stages of the disease could be kept in open wards of a hospital or in an institution among other children without causing the disease to spread. Especially striking was the observation that when children brought from a rural district where the disease had been contracted, were placed in the open wards of a city hospital, the disease would not spread therein, but might continue to spread in the country district whence it had come. Rosenau's experience with yellow fever caused him to turn back to the hypothesis of an intermediate host, and this despite the fact that negative results had already been reported with fleas, lice, and bedbugs. After considerable experimental work, he finally achieved successful transmission through the bite of the common stable fly, *Stomoxys calcitrans*. These flies exist everywhere, though they are usually more common in the country. They are vicious, voracious, bite through thick clothing, and suck considerable blood, swelling up to large size.

In his experiments Rosenau exposed infected (poliomyelitis) monkeys in all stages of the disease to these flies in a large screened cage, and thus caused the flies to drink the blood of the infected animals. After this, the infected monkeys were removed and healthy monkeys exposed to the same flies. It should be said, in passing, that healthy monkeys cannot contract infection by being placed in contact with infected ones and certainly not merely by being placed in a cage which has previously been occupied by the latter. Out of twelve healthy monkeys exposed to the bite of infected flies in the manner just described, six subsequently showed symptoms of poliomyelitis, three in a virulent form. The diagnosis was confirmed by autopsy. Three other monkeys had some milder symptoms more or less charac-

teristic; of these no autopsy results are yet available. In three of the six monkeys showing symptoms, there was diarrheal and some gastrointestinal disturbance. This is certainly of interest, for it resembles the clinical course of the disease in children.

Rosenau emphasized the fact that this is not a mere mechanical transmission of the virus, for it requires several weeks' incubation within the body of the fly after feeding on an infected monkey, before the fly is able to transmit the disease to healthy monkeys. In this, conditions resemble those which obtain in malaria and yellow fever. It is interesting, in this connection, to recall what was said above concerning the negative results in attempts to transfer the disease through the bite of fleas, lice, and bedbugs.

In the very animated discussion which followed Professor Rosenau's announcement, Nuttall, of Cambridge, pointed out the tremendous significance of the experiments, and said that the facts presented appeared to offer the correct solution of the transmission of poliomyelitis. Loeffler spoke in a similar vein, but pointed out that this mode of transmission did not preclude the transmission by other means, and that these other means should still be borne in mind in combating the disease. Petterson, of Stockholm, called attention to the fact that outbreaks of poliomyelitis had occurred in the northern part of Sweden, in very cold weather, and doubted whether in these the stable fly could have played any part. Landsteiner agreed with Loeffler in believing that there might well be several natural modes of transmission, including the one described by Rosenau, but cited outbreaks of poliomyelitis occurring north of the sixtieth degree of latitude in winter. Flexner said that these successful experiments represented a tremendous advance in our knowledge, and would lead to important renewed activities all along the line.

SMALLPOX IN THE UNITED STATES.

The *Public Health Reports* for September 20, 1912, contain an interesting review of the smallpox question as it appeared in the United States during the year 1911. During this year twenty-nine States and the District of Columbia sent in reports. We find that in these States there was a total of 21,768 cases with 134 deaths. Compared with 1910 and 1909 we find the following numbers for these two years: 25,598 cases with 403 deaths; 20,679 cases with 132 deaths. For 1911 the case rate, based upon the population, would be, in a thousand inhabitants for Connecticut, 0.02, the lowest proportion, while Utah leads with 4.31 in a thousand. The death rate shows a proportion of 0.61 for each

hundred cases. While usually the disease was of a mild form, in fact so mild that undoubtedly many cases were pronounced to be chickenpox, there appeared during 1911 a virulent form in Texas, with twenty-seven deaths in 102 cases; in Kansas, twenty-three deaths in 143 cases; in Los Angeles six deaths in twenty-five cases. The mild type of the disease seems not to be peculiar to our country, as other governments also report only mild forms.

----- THERAPEUTICAL NIHILISM.

A foolish epigram often upon the lips of the unthinking physician is to the effect that he could satisfactorily practise medicine with some half dozen drugs. The communication of Dr. Maximilian Schulman in this issue of the JOURNAL will open the eyes of the reader to the fallacy of any such belief. Fifty-nine preparations are enumerated in this communication, all official, and none containing more than one drug, that few physicians would care to do without, while, as the author points out, there are many unofficial and even proprietary preparations of which every practitioner is glad from time to time to avail himself. No mention is made, moreover, of the increasing number of preparations from the endocrin glands, nor of the vaccines and sera rapidly becoming indispensable.

----- SOME USEFUL MONOGRAPHS.

The Department of Health of the City of New York has recently undertaken the publication of a series of monographs which will prove of great value to the practising physician. Seven of these monographs have already appeared. Numbers one and two, by Dr. John S. Billings, Jr., are devoted to certain aspects of tuberculosis; number three discusses typhoid fever in New York city, and number six the hygienic features of New York; both these are by Dr. Charles F. Bolduan; number four, by Dr. S. Josephine Baker, takes up the department of child hygiene; number five, by Dr. Ernst J. Lederle and Mr. Russell Raynor, the milk supply of the metropolis and its control by the department, and number seven embodies the suggestions of Dr. Hermann M. Biggs regarding plans for hospital construction. These monographs are a worthy addition to the valuable literature already published by the department.

----- SOUR MILK IN THE OLD TESTAMENT.

In a very interesting article on the origin of oriental curdled milk, Dr. N. Moissides, of Constantinople, in *Janus* for July, speaks also of the mention of sour milk in the Old Testament, which Metchnikoff used to fortify his statement that the use of sour milk is one of the great secrets of prolonging life. Doctor Moissides remarks that Metchnikoff has followed the translation of Ebstein on medicine in the Old Testament, but with this translation our author disagrees, for the Septuagint, as well as Ostervald, used the word *butter* instead of *sour milk*. Of

much more importance than sour milk during the Græco-Roman and Byzantine times was curdled milk, *orygala*, a word mentioned by many old writers, such as Strabo, Plutarch, the elder Pliny, Paul of Egina, and many others, down to Ptochoprodromos, a Byzantine poet of the twelfth century. The word of the old Greeks is still used in Greece, Cyprus, and Turkey by modern Greek authors, while the Turkish word is *yagourth*, derived from the verb *yagourmak*, signifying fermented.

----- Medical Law.

V. RIGHTS AND LIABILITIES OF THIRD PARTIES.

The case of Hood vs. Gerrick, 125 Pacific Rep. 956, is another action by a physician for services rendered to an injured employee.

In this case the injuries to the employee were of a serious nature. His right leg was crushed from the knee down, requiring immediate amputation. His left leg between the knee and ankle, his right arm between the elbow and shoulder, his right clavicle, and two ribs were broken; he received an injury to the spine, severe contusions on various parts of the body, and a severe scalp wound.

At the time of the accident neither of the employers was present, but some person in no way connected with the employers called the physician to attend the injured employee. He responded to the call, gave medical and surgical aid, procured temporary hospital quarters, and engaged the services of a professional nurse. Some five days later one of the employers appeared at the place where the injured man was being cared for, and, according to the physician, made an arrangement for his future care. The physician testified that he explained to the employer the desperate nature of the employee's injuries, the necessity of keeping a nurse with him at all hours of the day and night, the number of nurses that would be required for that purpose, and the cost of their services; that the employer, knowing these facts, arranged with him to continue the care and treatment and employ such assistants as he found necessary, and promised that the employer's firm would pay the expenses.

The physician continued to attend the employee until he left the hospital, and then rendered his bill to the employer's firm, a small part of which was paid. He then sued for the remainder of the bill for services of himself and the nurses he employed for the entire period of service, those performed before the appearance of the employer, as well as those rendered afterward. The employers denied liability for any part of the services. The trial resulted in a judgment in favor of the physician for the value of his services and the services of the nurses rendered after, but not before the time of the conversation between the physician and the employer.

An appeal was taken by the employers to the Supreme Court of the State of Washington, which affirmed the judgment, and in doing so commented on the case as follows:

The contention is made that the evidence is insufficient to support the judgment as a whole, and it is complained particularly that the recovery is too large. But on both

these questions we think the findings of the trial court are justified. No recovery was allowed for the services of the plaintiff and the nurses prior to the time the agreement was had between John Gerrick (one of the employers) and the respondent (the physician), and the respondent in his proofs had some difficulty in segregating the value of his services at that precise time; but his evidence shows services performed subsequently to that time of the reasonable value allowed by the court.

X. THE PHYSICIAN AS WITNESS.

In the case of Acme Cement Plaster Co. vs. Westman, 122 Pacific Rep. 90, a physician was called in a personal injury case to give his opinion as to the extent and permanency of the injury of plaintiff, and also as to the necessity for the performance of a surgical operation which had been performed on plaintiff's head. In the course of his testimony he was permitted, over objection of defendant, to testify to statements made to him by plaintiff in relation to his condition, sensations, and feelings in the past. This ruling was objected to; upon appeal, and in passing upon it, Mr. Justice Beard, of the Supreme Court of Wyoming, said:

The rule seems to be quite well settled that such statements of the party injured, narrative of the past conditions or sufferings, made by the ordinary witness, are inadmissible; but a physician may, however, testify to a statement or narrative given by a patient in relation to his condition, symptoms, sensations, and feelings, both past and present, when such statements were received during, and were necessary to an examination with a view to treatment, or when they are necessary to enable him to give his opinion as an expert witness.

This evidence was admissible for the purpose of affording the jury the means of determining the weight to be given to the opinion of the physician, but not as evidence tending to prove the actual condition of the plaintiff at the time of which he spoke, and the jury should have been cautioned. For the purposes indicated, there was no error in admitting the testimony.

News Items.

Annual Conference of State Sanitary Officers.—The annual conference of sanitary officers of the State of New York will be held in Syracuse on Wednesday, Thursday, and Friday, December 4th, 5th, and 6th.

The Wesley M. Carpenter Lecture.—This lecture was delivered by Dr. Max Rubner, professor of physiology in the University of Berlin, at the New York Academy of Medicine, on Thursday evening, October 3d, his subject being Concerning the Life of a Cell.

Saratoga County Medical Society.—This society held its annual meeting in Ballston Spa on Tuesday, September 10th, and elected the following officers to serve for the ensuing year: President, Dr. J. B. Ledlie, Saratoga Springs; vice-president, Dr. John R. McElroy, of Jonesville; secretary, Dr. James T. Sweetman, Jr., of Ballston Spa; treasurer, Dr. T. E. Bullard, of Schuylerville.

Diphtheria Epidemic in Camden, N. J.—It is reported that an epidemic of diphtheria prevails in the eastern section of Camden, N. J. The public schools have been closed, and no services will be held in the churches until the local board of health has succeeded in getting the epidemic under control. Vigorous measures are being taken by the board of health to prevent a farther spread of the disease.

A New Building at Johns Hopkins Hospital.—A new building for the use of private patients is to be erected at the Johns Hopkins Hospital. It is a gift to the hospital from the heirs of Charles L. Marburg, and will be called the Charles L. Marburg Memorial Building. Nearly a year has been spent in developing the plans for the building, and it will be built according to the most approved standards. The work of construction will begin at once.

Harvey Society Lectures.—The first lecture in the series for 1912-1913 will be delivered this evening at the New York Academy of Medicine by Dr. Max Rubner, professor of physiology in the University of Berlin. His subject will be Modern Steam Sterilization.

American Association of Obstetricians and Gynecologists.—The twenty-fifth annual meeting of the association was held in Toledo, Ohio, September 17th, 18th, and 19th, under the presidency of Dr. X. O. Wender, of Pittsburgh. The following officers were elected to serve for the ensuing year: President, Dr. Miles F. Porter, of Fort Wayne, Ind.; first vice-president, Dr. Charles N. Smith, of Toledo, Ohio; second vice-president, Dr. James E. Sadlier, of Poughkeepsie, N. Y.; secretary Dr. E. Gustave Zinke, of Cincinnati, reelected; treasurer, Dr. Herman E. Hayd, of Buffalo. Providence, R. I., was selected as the place to hold the next annual meeting.

Smallpox.—During the week ending September 27, 1912, there were reported to the United States Public Health Service 287 cases of smallpox in the United States. Of these 13 occurred in Kansas, 74 in Minnesota, 35 in New York, one in North Dakota, 37 in Ohio, 97 in Washington, and 30 in Wisconsin. There were no deaths reported. From foreign countries cases of smallpox were reported as follows: Algeria, 46; China, 1; Great Britain, 1; India and IndoChina, 7; Portugal, 12; Spain, 8; Russia, 13; Straits Settlements, 1. In Java about ten cases are reported daily. The mortality from smallpox was very low, there being only 30 deaths reported during the week, of which 11 were in Constantinople. During the first three months of this year the number of cases of smallpox in the Philippine Islands numbered 366, with no death.

Personal.—Dr. Don R. Joseph, formerly associate in physiology and pharmacology at the Rockefeller Institute for Medical Research, has been appointed associate professor of physiology at Bryn Mawr College. Dr. Alvin R. Peebles has been appointed head of the newly established department of preventive and experimental medicine in the University of Colorado. Doctor Peebles was formerly professor of the theory and practice of medicine in the institution.

Personal—A Correction.—In our issue for September 28th we stated that Dr. William T. Shoemaker had been appointed assistant professor of ophthalmology in the Women's College, Philadelphia. This is incorrect. Doctor Shoemaker has been appointed *associate* professor of *clinical* ophthalmology in the Woman's Medical College.

Physicians' League of Brooklyn.—At a regular meeting of the Physicians' League, the attendance of which was representative of the whole of Brooklyn's medical profession, held at the County Medical Society building, September 27, 1912, beside the regular business of the league, a very interesting and animated discussion as to the abuse of medical charity occupied the evening. The discussion was quite general among those present, and being more or less extemporaneous was varied in its trend. A motion was made by Doctor Bartley, and unanimously carried, that the chairman be required to appoint a committee to tabulate the more conspicuous abuses of medical charity and the most promising of the suggested remedies, so that these can be acted upon serially at the next meeting, which will take place October 18, 1912. The cooperation of all medical men will be sincerely welcomed.

Eastern Medical Society.—A stated meeting of the Eastern Medical Society of the City of New York will be held at the Café Boulevard building on the evening of October 11th, under the presidency of Dr. Samuel J. Kopectzky. The following programme has been arranged: Report of a case of Cæsarean Section, by Dr. E. K. Brown; Symposium on the report of Recent Advances in Surgery and Their Practical Applications, consisting of the following papers: Use of the Secondary Blood Clot in Mastoid Surgery, by Dr. R. Johnson Held; Bone Transplantation in General Surgery, by Dr. A. A. Berg; Bone Transplantation in Special Surgery of the Nose, by Dr. William W. Carter; Surgical Treatment of Meningitis, by Dr. Irving S. Haynes; The Sluder Operation for the Removal of Tonsils, by Dr. Charles J. Imperatori. The discussion will be opened by Dr. Robert T. Morris, Dr. Charles A. Elsberg, Dr. Wendell C. Phillips, Dr. Duncan MacPherson, Dr. Seymour Oppenheimer, and others.

Cholera in Russia.—For several years cholera was epidemic in Russia, except during the colder months of winter. In 1908, there were 17,000 deaths from this disease officially reported; in 1909, 28,000. From May 8, 1910, to February 4, 1911, there were 216,796 cases, with over 100,000 deaths recorded. During the year 1910 practically all parts of Russia were invaded, except the northernmost provinces. During the summer of 1911 the disease subsided very markedly, and from April 1st to September 13th there were only 2,003 cases, with 1,018 deaths reported.

Meetings of Local Medical Societies.—During the coming week meetings of medical societies will be held in New York as follows: Monday, October 7th: Clinical Society of the New York Throat, Nose, and Lung Hospital; German Medical Society; Brooklyn Hospital Club. Tuesday, October 8th: New York Academy of Medicine (Section in Public Health); New York Obstetrical Society (annual). Wednesday, October 9th: New York Pathological Society; New York Surgical Society; Medical Society of the Borough of the Bronx; Alumni Association of the City Hospital; Alumni Association of the Norwegian Hospital; Brooklyn Medical and Pharmaceutical Association. Thursday, October 10th: New York Academy of Medicine (Section in Pediatrics); Society of Sanitary and Moral Prophylaxis; West Side Clinical Society; Brooklyn Pathological Society. Friday, October 11th: New York Academy of Medicine (Section in Otolaryngology); New York Society of Dermatology and Genitourinary Surgery; Eastern Medical Society of the City of New York; Society of Clinical Serology; Society of Alumni of St. Luke's Hospital; Society of Ex-Internes of the German Hospital, Brooklyn. Saturday, October 12th: Therapeutic Club, New York.

Buffalo Academy of Medicine.—A complete programme of the meetings of the Buffalo Academy of Medicine, with the topics selected for discussion, for the session 1912-1913, has just been issued. This programme shows that on Tuesday evening, October 1st, a meeting of the Section in Surgery was held, the programme including the following papers: The Life Cycle of *Trichomonas pallidum* and Syphilis, by Dr. Hideyo Noguchi, of the Rockefeller Institute, and Isopathy in the Twentieth Century, by Dr. Roswell Park. Next Tuesday evening a meeting of the Section in Medicine will be held, the paper of the evening to be read by Dr. Louis J. Hirschman, of Detroit, on the Treatment of Chronic Colitis. Meetings are held every Tuesday evening to June 10, 1913. The present officers of the academy are: Dr. W. Scott Renner, president; Dr. Harry R. Trick, secretary; Dr. Lawrence Hendee, treasurer; Dr. Thomas F. Dwyer, trustee for one year; Dr. John Pryor, trustee for two years; Dr. James W. Putnam, trustee for three years; Dr. Carl S. Tompkins, chairman of the Section in Medicine; Dr. H. A. Smith, chairman of the Section in Surgery; Dr. Frank Ransom, chairman of the Section in Obstetrics and Gynecology; Dr. Guy L. McCutcheon, chairman of the Section in Pathology.

Mortality from Cholera and Plague.—Reports received by the United States Public Health Service during the week ending September 27, 1912, show 424 deaths from cholera, occurring as follows: In China, from July 7th to August 10th, 49 deaths; Dutch East Indies, May 26th to June 22d, 43 deaths; India, July 1st to August 24th, 231 deaths; Indo-China, July 30th to August 12th, 84 deaths; Zarzibar, 17 deaths, the outbreak occurring in the native prison. No deaths from cholera were reported in either Japan or Russia, but three steamships from Shanghai were held in quarantine by Japan on account of several cases of cholera on board, and the Japanese authorities have taken measures against the importation of cholera from Shanghai, which is recognized as a cholera infected port. Turkey in Asia has been officially declared free from cholera.

Deaths from plague were reported during the week as follows: Azores, 2; China, 21; Dutch East Indies (Java), 13; Egypt, 5; India, 37; Indo-China, 13, making a total of 111 deaths. During the first week in September the steamship *Bellaïsa* from Rosario via Cape Verde Islands was held in quarantine at Hamburg, Germany, on account of two cases of plague on board. There were also reported five deaths from plague at Porto Rico, which occurred on September 12th, 13th, and 14th.

Insanity in England.—The sixty-sixth annual report of the Commissioners of Lunacy for England and Wales shows that on January 1, 1912, there were under treatment in these two countries 135,661 insane persons, an increase of 2,504 over the previous year. The average annual increase for the past ten years was 2,495. Of the total number of insane patients, 91 per cent. were paupers. The average ratio for the whole population was 2.41 in a thousand of population, London furnishing the highest ratio, 5.97 in a thousand. Of the total number reported, 46.5 per cent. were males and 53.5 per cent. females. The criminal insane patients number 1,125; 857 men and 268 women.

County Tuberculosis Hospitals.—In a letter to Dr. Paul B. Brook, chairman of the Public Health Committee of the Chenango County Medical Association, the Hon. James W. Wadsworth, Jr., former speaker of the Assembly, expressed his unqualified approval of the county tuberculosis hospital. In the course of his letter he says he believes that every county should have one of these institutions. Mr. Wadsworth was one of the leaders of the legislature when the law was passed permitting counties to establish tuberculosis hospitals.

"The leaders of the legislature at that time," writes Mr. Wadsworth, "determined that it would be unwise and impractical for the State itself to establish tuberculosis hospitals and that it would be better to enact a permissive law enabling the counties of the State to meet the problem by the erection of such tuberculosis pavilions as the necessities of their respective conditions made advisable. I believe that every county should have a pavilion where patients may receive thoroughly good treatment, be made to feel comfortable and at home, accessible to their relatives and friends, and assured of a reasonable prospect of recovery. The possibilities for the relief of suffering, the reduction of nonemployment and poverty, and the decrease in the burden now borne by the taxpayers can hardly be measured. Any step toward the prevention of tuberculosis and its elimination is a step for the increased prosperity and happiness of society."

Eight Per Cent. of Poverty Said to be Due to Tuberculosis.—That tuberculosis is responsible for one third of the sickness that reduces families to dependency is indicated by a study just completed by the New York Association for Improving the Condition of the Poor; the association says that the facts obtained also indicate that this disease is the cause of over eight per cent. of the destitute homes in New York city. The 6,565 families which sought the association's aid between October 1, 1911, and June 30, 1912, were selected for the study. It was learned that of these families 1,605 were forced to seek aid because of illness. In some the income had been hampered or cut off by the illness of the father or mother. In others sickness of one or more members had exhausted savings and heavily taxed earnings.

Tuberculosis was the disease found in 555 or thirty-four per cent. of these families. Rheumatism forced 187 other families into dependency. The remaining were classified as follows: Illness attending childbirth 161, kidney and heart disease 156, anemia 156, operations resulting from injuries 106, pneumonia 90, children's contagious diseases 48, paralysis and epilepsy 48, eye and ear diseases 45, cancer and other growths 44.

The results of this study plainly show the urgent necessity for more adequate care of tuberculous patients, especially those in impoverished homes. The facts justify the effort now being made by the association to devise a practical plan for the treatment and cure of the disease in the home. The fact that no unfavorable conditions have been noted thus far leads to the belief that the association will before long be able to offer a more speedy and economic plan of wiping out the disease than is now employed. Moreover, the association is, for the first time in the history of relief work in this country, providing on a comprehensive scale, adequate relief, care, and treatment for tuberculosis in the tenement homes of the poor.

Some plan of effective home treatment must be found, for it will be many years before there will be enough hospitals and sanatoria to accommodate all tuberculous patients, despite the excellent work now being done to meet demands. A comparison of the hospital provisions in the United States with the needs and growth of population shows that the demand is increasing twice as fast as the supply.

Pith of Progressive Literature.

MEDIZINISCHE KLINIK.

August 4, 1912.

1. O. KÖRNER: Diagnosis and Treatment of Nasal Tuberculosis.
2. G. SCHREIER: Significance of Rare Hypertonias.
3. A. T. JURASZ: Perforations of Esophagus by Foreign Bodies.
4. ANTON STICKER: Use of Radium in Surgery.
5. ARMIN STEVETMAL: Hysteria and Practice.
6. BRÄNDL: Treatment of Ulcera cruris by the Quartz Lamp.
7. ALEXANDER ERNST: Purpura Epidemic.
8. WILLIE DOCKHORN: New Hypnotic, Luminal.
9. J. SCHULHOFF: Pyocyanase.
10. RICHER and KNAPE: Microscopical Observations on Action of Salvarsan and Neosalvarsan in Blood Stream of Living Animals.
11. ROBERT BING: Diseases of Meninges.

August 11, 1912.

12. EMIL MATTASCHKE: Dementia senilis.
13. SCHILLING: Anemia Following Tropical Diseases.
14. VOLLMER: Diseases of Skin and Baths.
15. ESELER: Results of Operative Treatment of Chronically Infamed Annexa.
16. ROTHSCHEIDT: Blood Pressure in Thermal Baths and Thermal Douche Massage.
17. SCHLICHTING: Death from Whiskey Containing Methyl Alcohol.
18. MAX BOMDI: Transitory Blindness after Observing Sun Eclipse.
19. FRANZ BRUCK: Worthlessness of Positive Wassermann Reaction in Local Diagnosis.
20. REIMANN and UNNA: Improved Stain by Fixation of Tissue with Chloride of Zinc.
21. BARTK: Oological Diseases of Meninges.
22. KURT KAYSER: Genesis of Gallstones.
23. PELTESOHN: Nature and Cause of Deformities.

August 18, 1912.

24. ESCHWELER: Ear and Acute Infectious Diseases.
25. CARL FURCK: Causal Therapy of Diabetes (*To be continued*).
26. HACCUS: Salvarsan Treatment of Syphilis.
27. SCHULHOFF: Hemorrhages and Tepid Thermal Cures.
28. KRONE: Calcium Assimilation in Digestive Disturbances.
29. ENGELHARDT: Is Citiell's Filling of the Frontal Sinuses Ad-
visible?
30. MAYER: Treatment of Seborrhoe Alopecia and Propylactic
Treatment with Preparations of Sapalcol.
31. HELMHOLD: Determination of Pupillary Distance.
32. ERSTEIN: Anaphylaxis, Noncoagulability of Blood, and Ferment
Poisoning.
33. DUTOIT: Serological Pathogenesis of Sympathetic Ophthalmia.

August 25, 1912.

34. PINCUS: Neosalvarsan.
35. HEIMANN: Present Status of Serum Therapy in Streptococcus
Infections.
36. ARNDT: Diagnosis and Differential Diagnosis of Progressive
Paralysis.
37. CARL FURCK: Causal Therapy of Diabetes (*Conclusion*).
38. FABRY: Treatment of Syphilis with Neosalvarsan.
39. CARL SCHÜTZER: Calcium Constituents of Mineral Waters.
40. CITRONBLAT: Diagnostic Significance of Antitrypsin Content of
Blood Serum in Cancer and Other Diseases.
41. PERICIC: Treatment of External Anthrax.
42. MÜLZER: Use of Choccolins in Acute Gonorrhea and Complica-
tions.
43. CMUNT: Action of Gelatin on Viscosity of Blood.
44. MANKIEWICZ: Pyelitis.
45. HIDAKA: Experimental Investigation of the Bacteria Content of
the Skin.

2. **Rare Hypertonias.**—Schikele says that patients suffering from hypertonia find their way to the neurologist and gynecologist. The latter usually cures on account of the menorrhagia. These patients further complain of irritability, headache, flashes of heat, flushed faces that change to pallor, restless eyes, slight tremor and dermatographia, moist skin, and rapid heart, 110 to 120. Blood pressure increased from 150 to 180 mm. Hg. Lymphocytosis exists, also increased eosinophilia in blood. The patients are usually women between the ages of twenty-nine and forty years. The foregoing symptom complex is primarily due to the increased internal secretion of the ovary, which aids in controlling blood pressure. The menorrhagia is due to the increased blood pressure and is not dependent upon anatomical changes in the uterus or mucosa. If patients are given ovarian or corpus luteum extract, symptoms partially subside. Thyroid extract has a similar effect. This proves that organs with internal secretion must have some sub-

stance in common. Abnormal hemorrhage from the uterus is not due to a single cause. It is best to regard cases systematically from the viewpoint of internal secretion without losing sight of the possibility of organic disease.

4. **Radium in Surgery.**—Sticker thinks that radium should not be used in the treatment of those tumors which are still operable, if this procedure postpones operation. In certain cases, by systematic and prolonged treatment, he has been able to inhibit or reduce growths. Flat cutaneous cancers are the most amenable to treatment. Also lupus erythematosus, nævi, and warts are easily removed and show no tendency to recur. Of all deeper lying tumors multiple lymphomata give most satisfactory results. Radium therapy is also important in treatment of scar tissue and recurring enlargement of lymph glands after carcinoma extirpation. The treatment is not so promising in inoperable mucous membrane carcinomata, especially of the stomach and rectum. Better results will probably be obtained with a more perfectly developed technique. Oscar Hertwig showed that radium affects the nuclear substance of the cell. One of the chief differences between the normal and malignant growth of tissue is the increased power of growth and division of the nuclear substance. The elective action of the radium must be sought in its inhibitory effect upon the growth and development of the nucleus.

5. **Hysteria and Practice.**—Steyerthal enumerates the ten prevailing theories of hysteria and refutes them all. He asserts that there is no single and indivisible disease "hysteria," only certain characteristics, a symptom complex, which has been designated in times past as "hysterical." The hysterical fit is among the first of these characteristics. The stigmata hysterica were added later. All of these so called hysterical symptoms are concomitant with a great number of the most diversified diseases; they are not characteristic of one disease. Therefore what we call hysteria is a vast array of overlapping *Krankheitsbilder*, which have nothing in common except a few unimportant symptoms. Congenital idiots and those suffering from nervous debility recruit the army of the so called hysterics. The word hysteria from a scientific viewpoint is worthless. The use of it in practice can only lead to misunderstanding. Thus to root out this unhappy term from the language is not only a commandment of humanity, but also an irrefutable demand of science.

8. **Action of Luminal.**—Dockhorn reports the use of luminal on twenty-one patients for the past eight weeks in cases of restless and quiescent insomnia. It is best administered in tablets or powder, one to two grammes; it is slightly soluble in water, bitter to taste, is changed in the intestine to a sodium salt, possesses twice the strength of veronal, and has no detrimental action on heart or kidneys after prolonged use. The action is rapid, and sleep lasts from five to eight hours. Patients feel refreshed and bright after its use.

9. **Pyocyanase.**—Schulhof has tried pyocyanase, the first disinfectant which destroys microorganisms, checks their development, but leaves the surrounding tissues wholly intact. Its active substance is a

bacteriolytic and proteolytic enzyme, obtained by the process of filtration from the liquid cultures of *Bacillus pyogenes*. Pyocyanase resembles tincture of iodine in appearance, is slightly fluorescent, has a peculiar smell, has the power to kill, and even when diluted, to check the growth of all bacteria, especially the pathological strains. The author has used it successfully in croupous angina, tonsillitis follicularis, pharyngeal diphtheria, suppurative otitis media, ulcerative gingivitis, phlegmonous ulcers of the legs, etc. He uses it in the form of spray, on gauze, on tampons, or daubs the affected parts directly.

22. **Genesis of Gallstones.**—Kayser reviews the literature of this subject and shows Naunyn's theory for the formation of gallstones (congestion and inflammation) is no longer tenable in the light of modern investigation. The Aschoff-Bacmeister experiments seem to show that gallstones can be formed in the congested gallbladder without the presence of inflammation. The stones in these cases consist of pure cholesterolin, which is formed from the increased cholesterolin content of the gallbladder. The latter is not constant and depends on the assimilation processes. When inflammation supercedes congestion, other stone building substances are added, thus giving rise to variegated stones. Beer adds to the causative factors; an increased cholesterolin diatheses as the third factor in the causation of gallstones.

26. **Salvarsan in the Treatment of Syphilis.**—Haccius treated 220 cases of syphilis with intravenous injections of salvarsan. The results were eminently satisfactory; ninety per cent. of the patients showed no recurrences, and from sixty to seventy per cent. had negative Wassermann reaction soon afterward. The best results are obtainable when treatment is begun in the early stage. This method is convenient for the patient since it does not necessitate interference with daily work.

40. **Antitrypsin in Cancer.**—Citronblatt arrives at the following conclusions: 1. The study in the increase of the antifermentative power of the blood serum of cancerous subjects must be followed up, since the same power is increasingly present in other diseases; 2, antitrypsin increase in the blood of cancerous patients is almost constant, ninety per cent. of the cases, therefore, with other symptoms point to positive diagnoses; 3, there is no parallel between the size of the lesion and the amount of antitrypsin in the blood, nor is there parallel between the state of nourishment and hemoglobin on the one hand, and the trypsin content on the other; 4, cases with leucocytosis show no increase in trypsin content; 5, in sarcoma trypsin increase is less frequent than in sarcoma.

42. **Chocolin in Gonorrhea.**—Mulzer has tried the new cathartic, chocolin, for the past four months in cases of acute male gonorrhea, and found it better than any other cathartic heretofore used in his clinic for that purpose. The movement occurs without griping; the dose is three to six drachms in milk. The drink is liked and well borne by the patients. The efficiency of the preparation is not lessened by its continued use. Almost all patients gained in weight, which was not true of the patients taking other cathartics. Altogether choco-

lin had proved a good dietetic adjuvant in gonorrhea.

45. **Bacteria of the Skin.**—Hidaka asserts that: 1. *Oleum rusci*, pyrogallie acid, ichthol have the greatest power of diminishing the bacteria of the skin, while resorcin, chrysarobin, salicylic acid, sulphur, tumenol are less active in this respect; 2, direct application of these remedies in alcoholic solution shows more thorough and penetrating action than the same remedies in the form of salves or oily solutions.

PRAGER MEDIZINISCHE WOCHENSCHRIFT.

August 1, 1912.

1. CAMPHAUSEN: Therapeutics of Diseases of Respiratory Organs with Thioivinal.
2. GUSTAV WAWOR: Twenty Years of Gynecological Practice in Country (*To be continued*).
3. THURE HELLSTRÖM: Diphtheria and Phlegmonous Angina (*To be concluded*).
4. KLEMENS BERGL and ERWIN KLAUSNER: Condition of Cerebrospinal Fluid in Luetics.
5. GUSTAV WAWOR: Twenty Years of Gynecological Practice in Country (*To be concluded*).
6. THURE HELLSTRÖM: Diphtheria and Phlegmonous Angina (*Concluded*).

August 15, 1912.

7. A. KLUG: Radioactivity of Spas at Johannesburg and Their Therapeutics.
8. GUSTAV WAWOR: Twenty Years of Gynecological Practice in Country (*Concluded*).

August 22, 1912.

9. HANS ZICKLER: Xanthohemangiofibroma.
10. ARNO LEHNDORFF: Existence of Bilirubin and Urobilin in Human Blood Serum and in Serous Fluids.
11. EBERHARD ALBRECHT: Answer to E. Hoke's Remarks on So Called Respiration Reaction of Heart.

August 29, 1912.

12. H. GUTH: Papillomata acuminata.
13. N. LURJE: Therapeutics of Edema of Lungs.
14. F. LENNEMALM: Chronic Arsenic Poisoning Especially in Apartments (*To be continued*).
15. MICHAEL URBAN: Friedrich Hebbel in Marienbad (*To be continued*).

1. **Thioivinal in Diseases of the Respiratory Organs.**—Camphausen gives the constituents of thioivinal as follows: Guaiacol, 4 grammes; extract of thyme, 35 grammes; extract of eucalyptus, 5 grammes; syrup, 40 grammes; and distilled water, enough to make 100 grammes. He has used this compound in all diseases of the respiratory organs and is well satisfied with it. He has also used it in whooping cough in children, where it is a good prophylactic, as it shortens the attack and lengthens the intervals between attacks. He does not mention the dose used.

4. **Cerebrospinal Fluid in Luetics.**—Bergl and Klausner report cases from which we get the well known picture of the early disarrangement of the meninges in syphilis. They found the proportion of the polynuclears vastly increased, if the meningitis becomes chronic, the number of nuclears decreases, while the lymphocytes and plasma cells increase in number.

10. **Existence of Bilirubin and Urobilin in Human Blood Serum and in Serous Fluids.**—Lehndorff bases his study upon the observation of von Jaksch, who emphasizes the fact that in disturbances of the liver it is necessary to examine not only the urine for bilirubin, but also the blood serum. He was thus able to demonstrate in forty-two cases, which included chronic nephritis, icterus, syphilis, cirrhosis of the liver, cholelithiasis, pleurisy, pneumonia, bronchitis, arteriosclerosis, epidemic cerebrospinal meningitis, and carbon dioxide intoxication, bilirubin in blood serum in every case,

while urobilin he could demonstrate only twice in the serum, once in a case of fibrinous pleurisy and again in a case of cholelithiasis. He furthermore observes that in nephritis the quantity of cholesterol was diminished in the serum.

WIENER KLINISCHE WOCHENSCHRIFT.

August 1, 1912.

1. MORIZ WEISZ and ALFRED WEISZ: Use of Urochrome Reaction in Indications for Tuberculin Treatment.
2. ALEXANDER BARON and THEODOR BÄRSONY: Spastic Hourglass Stomach in Duodenal Affections.
3. KARL ROTKY: Infection with *Micrococcus gangethanicus*.
4. R. POLLAND: Lichen ruber planus Cured with Salvarsan.
5. LEOPOLD LÖW: Therapeutics of Syphilis.
6. FELIX POLLAK: Cholera in Austrian Maritime Countries during 1911 and Effective Quarantine.

August 8, 1912.

7. CHVOSTEK: Edmund von Neusser.
8. K. BUDINGER: Surgical Treatment of Acute Circumscribed Phlebitis.
9. FELIX DEUTSCH: Examination of Functions of Kidney with Phenolsulphophthalein.
10. RUDOLF POLLAK: Erythema nodosum and Tuberculosis.
11. B. ROMAN: Pyelonephritis in Nephrolithiasis through Bacterium paratyphi B.
12. MAX FISCHER: So Called Accessory Milk Glands.

August 15, 1912.

13. G. IZAR: Synthetic Antigens for Miotagmin Reaction in Malignant Ulcers.
14. ROBERT LICHTENSTERN: Central Innervation of Bladder.
15. W. BENQUE: Case of Persistent Umbilical Vein together with Other Anomalies Simulating Banti's Disease.
16. M. URETEIN: Manic Depressive and Periodical Insanity as Symptom of Catatonia.
17. S. OMBT: Fight against Malaria in Italy.

August 22, 1912.

18. JOSEF SORGO: Surgical Treatment of Phthisis.
19. HERBERT KOEBEL: Rupture of Trachea and Perforation of Esophagus in Rupture of Larynx.
20. KARL BAUER: Eruption of Lymph Gland in Arcus aortae.
21. R. GOLDMANN: Case of Acute S. manganismus Produced by Diseased Tooth Cement.

1. **Use of Urochrome Reaction an Indication for Tuberculin Treatment.**—Moriz and Alfred Weisz base their conclusions upon the examination of twenty-three cases. The appearance of urochromogen in the urine is a contraindication to tuberculin injections. It is therefore necessary to make repeated examinations of the urine for urochromogen during treatment with tuberculin injections.

2. **Spastic Hourglass Stomach in Duodenal Affections.**—Baron and Bärsony observe from two cases and from the literature that spastic hourglass stomachs are very often found in affections of the duodenum. If, beside hourglass stomach, there exist other symptoms characteristic of duodenal affections, and if the stomach is empty after six hours, the diagnosis may be made that there exists affection of the duodenum which is not complicated with organic changes of the stomach.

4. **Lichen ruber planus Cured with Salvarsan.**—Polland speaks of several diseases of the skin which he has subjected to salvarsan treatment. Psoriasis, which he states is cured with the usual arsenic medication (?), gave no favorable result with salvarsan, but in lichen ruber planus salvarsan seemed to act as a specific. Polland reports a case of a woman, forty-seven years of age, who received two injections intravenously of 600, one of 0.3 and the other ten days later of 0.4 gramme. She was cured of the disease after fourteen days.

6. **Cholera in Austrian Maritime Countries during 1911 and Effective Quarantine.**—Pollak gives an interesting review of the cholera as it appeared in the Austrian countries bordering on the seashore and the quarantine which effectively isolated the attack.

9. **Examinations of Functions of the Kidney with Phenolsulphophthalein.**—Deutsch has subjected thirty-two patients suffering from diseases of the kidney to a thorough examination with phthalein. He concludes that it is possible with the help of phenolsulphophthalein to diagnosticate a number of affections of the kidney; anatomical and functional disturbances seem to correspond to the excretion of phthalein. This coloring matter also indicates the size of the total function of both kidneys as well as of a single kidney, thus being of value in diagnosis as well as prognosis.

14. **Central Innervation of the Bladder.**—Lichtenstern reviews our knowledge of the central innervation of the bladder. Stimulation of the hypothalamus produces contraction of the bladder; the conducting nerves are the erigents which leave the spinal cord between the second and third sacral vertebrae. No influence upon the uterus or seminal cord has been observed. Extirpation of one or both hemispheres of the brain does not prevent the contraction of the bladder after stimulation of the hypothalamus, a fact which demonstrates the independence of this nervous centre.

17. **Fight against Malaria in Italy.**—Obst gives an interesting review of the fight waged by the government of Italy against endemic malaria. Italy, according to Celli, was up to 1897 statistically the second largest malaria country in the world, Greece having first place. Beside protection against the mosquito, drainage of the soil and restitution of large tracts of land to agriculture are the two main acts of prophylaxis. Hand in hand goes with it a general use of quinine. It has been found that this drug in hydrochloric, bisulphuric, or tannic combination is well absorbed without great disturbances of digestion. The dose for children up to two years is 0.15 gramme of quinine or euquinine, while adults receive between 0.4 and 0.6 gramme.

18. **Surgical Treatment of Phthisis.**—Sorgo states that artificial pneumothorax produces the most favorable condition for a cure of the diseased lung through collapse and compression, but it is possible that such an artificial pneumothorax will have an unfavorable effect upon the other lung. He therefore advises the use of this procedure only in cases where the other lung is entirely or nearly normal, and where the disease is restricted to the apices only. Prognosis will depend upon the condition of the other lung.

ZENTRALBLATT FÜR GYNÄKOLOGIE.

August 24, 1912.

1. A. STEBEL: Attempted Abortion in Absence of Pregnancy.
2. W. STOECKEL: How May Permanent Results in Operations for Cervical Carcinoma Be Improved?
3. H. THALER: Explanation of Results Following Radical Operation in Inflammatory Disease of Uterus.
4. G. SCHUBERT: Vaginal Defect with Formation of Vagina from Rectum.

August 31, 1912.

5. D. GRÜNBAUM: Limitation of Internal Examination by Midwife: Influence on Morbidity of Puerperium.
6. G. LINZENMEIER: Calcium Content of Human Blood.
7. KOWNATZKI: Delivery of Child by Means of Vacuum Cup.
8. K. HOLZAPFEL: Wash Basin Carried for Operating and Delivery Rooms.
9. F. LEHMANN: Action of Hypophosphated Esters.

2. **Operation for Cervical Carcinoma.**—Stoeckel lays stress on the necessity of the thorough

removal of the lymph nodes, as it is in them that recurrence generally makes its first appearance, and recommends the following steps in the operation: 1. Lumbar anesthesia, cauterization of the carcinoma, disinfection of vulva, vagina, and abdominal wall. 2. Laparotomy through a median incision to remove the iliac and hypogastric lymph nodes and their extensions. Closure of the wound without drainage. 3. Second incisions from the anterior superior spine to the mons veneris. Careful extirpation of the inguinal nodes and their extensions, both above and below, in continuity. 4. At the point where the two inguinal incisions meet, an incision is made at right angles over the mons veneris downward to the urethra; from here, a circular incision around the vulva. 5. A thorough dissection of the vagina and vulvovaginal tissues from the urethra, rectum, and pelvis. 6. Closure of the wounds with several drainage tubes and a catheter in the bladder.

5. **The Midwife and the Morbidity of the Puerperium.**—Grünbaum brings up two points: What percentage of deliveries can be successfully handled, without injury to the mother or child, by the midwife without an internal examination being made? What relation exists between the morbidity in the unexamined and that of the examined? In answer to the first it is stated that seventy-five per cent. of all deliveries can be handled throughout by the midwife without making an internal examination. In the second instance it was found that out of 741 mothers in whom no examination was made, there were sixteen who became ill, twenty-one per cent. Out of 259 examined, seventeen became ill, a percentage of 6.6.

9. **The Action of Hypophyseal Extract.**—Lehman reports a number of cases in which the extract was used as a uterine stypic with good results. He then presents two cases, one of herpes genitalis and one of pruritus vulvæ, both of which promptly ended in recovery after the administration of the remedy. He concludes that it has an influence in increasing the ovarian hormone, in raising the blood pressure, in causing contractions of smooth muscle, and also that it stimulates the labor pains. He suggests that it may have a favorable action on psychic disturbances originating from sexual disturbances.

MONATSSCHRIFT FÜR KINDERHEILKUNDE.

August, 1912.

1. FRITZ ZYBELL: Empyema in Infants.
2. S. SAMELSON: Salt Fever.
3. PAUL HEIM: Experiments on Dogs with Cane and Milk Sugar.

1. **Empyema in Infants.**—Zybell's twenty-two infants were all under one and a half year old; nineteen of these patients were under one year of age. His article is a general review of empyema in infants, with a very long bibliography attached. All of these cases came to operation and show very clearly how great is the mortality in empyema in infancy. There were fifteen deaths among the twenty-two cases. Bacteriologically, twenty cases were examined; fourteen showed the pneumococcus in pure culture; three the streptococcus, and one a mixed infection of streptococcus and staphylococcus; two of the cases were sterile, one of which proved on autopsy to be tuberculous. As the best operative procedure, Zybell advises introducing a trocar and needle and removing as much pus as possible.

Resection causes the greatest mortality, because infants stand the shock of the operation very badly.

2. **Salt Fever.**—Samelson comes to the following conclusion in regard to the appearance of fever after the subcutaneous injection of saline solutions in infants: 1. There is no "salt fever" after the subcutaneous injection of saline solutions in young infants. The so called salt fever is due to the bacteria toxins which are contained in the water. If freshly distilled water is used, no fever results. Water free from bacteria and the toxins of bacteria should be used in giving saline infusions to infants.

3. **Sugar in Dogs.**—Heim recalls that, in the March 23d number of the *Monatsschrift*, Saintmont reported experiments made on dogs concerning the action of cane and milk sugar (abstracted in this JOURNAL for May 11, 1912). He came to the conclusion that milk sugar was better borne than cane. Heim performed similar experiments, and does not agree with Saintmont. His conclusions are in accord with those of Leopold, who has shown that milk sugar is much more likely to cause diarrhea than cane sugar.

PRESSE MÉDICALE

August 28, 1912.

1. ANDRÉ BINET: What the Physician Should Know of Ischemic Muscular Contracture.
2. H. J. CZEISZEWICZ and G. LAURÈS: Cysticercosis of Fourth Ventricle in Man.

1. **Ischemic Muscular Contracture.**—Binet advises, in the prophylaxis of this condition, that constricting bands applied to the upper extremity after trauma be never allowed to remain longer than two hours, and that after supporting apparatus has been applied, the condition of the limb be carefully noted one hour later and once again in the succeeding twenty-four hours. If any one sign, or all of the signs of excessive compression appear, viz., loss of tactile sense, loss of power of voluntary motion in the fingers, cyanosis or pallor, swelling and pain, the dressing should be removed, the limb placed vertically and treated with hot water or air, and active and passive movements of the fingers, practised together with massage. In the operative treatment of Volkmann's contracture, Binet prefers to any other procedure resection of both bones of the forearm. Enough of each bone is removed to allow of complete extension or even hyperextension of the fingers, and the forearm and hand held in plaster in hyperextension for four to six weeks. Subsequent massage is not advisable, as excessive callus formation might result. Normal muscular action should instead be restored through electric stimulation and passive and active movements.

SEMAINE MÉDICALE.

September 4, 1912.

- R. DE BOVIS: Rôle of Gonococcus in Etiology of Pyosalpinx.

The Gonococcus in Pyosalpinx.—De Bovis contrasts with the hitherto generally accepted view of the overwhelming preponderance of the gonococcus as the causative microorganism in pyosalpinx the statistics recently put forth by Pankow and others, based on bacteriological and histological studies and showing only forty-three to sixty-six per cent. of cases to be of gonococcal origin. De Bovis calls attention to the fact that in the differentiation of the causes of pyosalpinx through the histological changes considerable opportunity is afforded for bias on the part of the observer. Since

the value of bacteriological findings is now likewise impaired because of the fact that many cases are operated in late, when the pus has become sterile, the author considers it best for the present to rely on the findings made by Menge about twenty-five years ago, when all cases were operated in so early as to yield virulent pus; at that time eighty-five per cent. of cases of pyosalpinx showed gonococci.

BRITISH MEDICAL JOURNAL.

September 14, 1912.

1. E. A. SCHÄFER: Nature, Origin, and Maintenance of Life.
2. L. HILL: Influence of Muscular Exercise and Open Air on the Bodily Functions.

1. **Origin of Life.**—See editorial article, page 646.

2. **Muscular Exercise and Open Air.**—Hill has shown experimentally on animals and man that it is not the supposed chemical impurity of the air of enclosed, ill ventilated, stuffy places which causes the various forms of discomfort experienced when we are forced to remain under such conditions, but that it is the relative moisture, heat, and the absence of motion in the air which are to blame. Man can withstand very marked increase in the amount of carbon dioxide in the air and considerable diminution of the oxygen without being at all aware of the changes if the air is kept in motion. He further finds, by means of the extremely delicate anaphylactic reaction, that exhaled air does not contain any proteid material which is absorbable through respiration. As to muscular exercise, its beneficial effects are innumerable; it relieves the heart through muscular emptying of the veins, it replaces fat by muscle and thereby prevents the stagnation of blood in tissue which does not spontaneously expel it, it increases oxygenation of the tissues, and many other good results accrue from indulgence in it, including a marked improvement in digestion and tissue metabolism. The brain worker or the desk man accelerates his heart by his work, and his blood pressure is raised, but he has neither muscular movements accompanying changes of posture, nor the respiratory pump to aid the heart in the maintenance of the circulation. Hence a high blood pressure is maintained for long periods by vasoconstriction of the arteries in the lower parts of the body, and thus perhaps arise those degenerative changes in the circulatory system which affect men tireless in their mental activity. Long continued high arterial pressure, with systolic and diastolic pressures approximately the same, entails a stretched arterial wall, and this must impede the circulation in the vasa vasorum, the inflow of tissue lymph, and nutrition of the wall. The maintenance of a high degree of resistance to bacterial infection is greatly dependent upon sufficient exercise in the open air and the proper education of the body to respond to temperature changes in the surrounding air. It is not low temperature which causes "colds," but low resistance to temperature changes.

LANCET.

September 14, 1912.

1. J. HINSHELWOOD: Eye Symptoms and Early Diagnosis of Disease of Nervous System.
2. J. HENDERSON: Septicæmia with Local Endocardial Lesions.
3. E. H. KETTLE: Carcinoma and Sarcoma of Same Breast.
4. W. BILLINGTON and B. G. GOODWIN: Acute Pancreatitis.
5. E. O. HUGHES: Chronic Edema of One Leg in Child.
6. R. KNOX: Prophylactic Use of X Rays before and after Operation for Malignant Disease.
7. T. G. LYON: Care of Consumptives.

8. E. G. STANLEY: Subcutaneous Rupture of Kidney.
9. H. W. MCCONNELL: After Care under National Insurance Act.
10. A. E. HORN: Health of Europeans in East Africa.

3. **Carcinoma and Sarcoma.**—Kettle reports an interesting case of association of both types of neoplasm in a single breast at the same time. The greater part of the breast was occupied by the carcinoma, while beneath this, in the deeper part of the organ, there was found a broad, firm band of sarcomatous tissue which involved the pectoral muscle in its growth. The nature of the tumors was confirmed microscopically after the removal of the breast. The operation included a thorough cleaning out of the axilla. About two years later a mass of glands was removed from the region above the corresponding clavicle. This was found to be metastatic growth of the carcinoma. No glands, at the first or second operation, showed any signs of metastatic involvement by sarcomatous tissue. Post mortem examination some months later also failed to show any metastasis of the sarcoma. Kettle has been able to find only three cases reported in the literature of both carcinoma and sarcoma in a single breast. He is of the opinion that the carcinoma was secondary and arose in response to stimulation of the glandular tissues by the primary sarcomatous growth, or else that the simultaneous presence of the two was a mere coincidence.

4. **Acute Pancreatitis.**—Billington and Goodwin treated two cases of this disease by drainage with tubes of both the pancreatic region and the pelvis. With this they combined appendicostomy and introduced large quantities of saline into the large intestine to combat the shock. One of the patients absorbed 8.5 pints of saline from the intestine in each of the two succeeding days after operation, the other twenty-three pints in three days. Recovery was prompt.

5. **Chronic Edema in One Leg.**—Hughes's patient was six years old, and there was no discoverable cause for the edema. The blood, the kidneys, and all other organs were normal so far as could be ascertained. The edema was firm and pitted. It varied but slightly with postural changes. There was no sign of inflammatory involvement in the region of the femoral or iliac veins. The edema extended up on the abdomen involving the drainage area of the corresponding superficial epigastric vein. There was no disturbance of function. All therapeutic measures failed to influence the swelling. While it corresponded to the effects of obstruction of the external iliac vein, there was no known cause for this obstruction, and the author is tempted to class this case under the head of the vague group known as the "trophedemas."

6. **Prophylactic Use of X Rays.**—Knox advocates the use of x rays prior to operation for the removal of cancer, and also subsequent to the operation, in order to further minimize the liability to recurrence. He bases his suggestions on the known beneficial or even curative action which this method of treatment has in inoperable cancer. He believes that sufficient exposure, both as regards extent and number of times, will accomplish much in destroying small foci of metastases which may have been left because inaccessible on account of location, or because too small for recognition. A further advantage to be gained by the use of irradiation before the operation, is seen in the case of the breast.

Here the application of the rays to the axilla will cause depilation, materially assist in the prevention of infection, and add to the comfort of the patient, as it reduces sweating through its action on the sudiparous glands.

8. Rupture of the Kidney.—Stanley was forced to treat a case of traumatic subcutaneous rupture of the kidney in a purely expectant and medical way. In spite of marked internal hemorrhage and shock, together with the formation of blood clots in the bladder, the patient made a good recovery and was able to leave bed at the end of the third week after the injury.

JOURNAL OF LARYNGOLOGY, RHINOLOGY, AND OTOTOLOGY.

August, 1912.

1. JOHN SENDZIAK: Favorable Influence of Rhinological or Pharyngorhinological Operations on Exophthalmos and Hypertrophy of Thyroid Gland. Contribution to Treatment of Graves's Disease.
2. GEORGES GELLES: Teaching of Otorhinolaryngology in France.

1. Nose and Throat Operations of Benefit in Graves's Disease.—Sendziak cites numerous instances in which the various symptoms of Graves's disease have been greatly relieved, or have entirely disappeared, following the correction of pathological conditions within the nose or nasopharynx. In the majority of the cases the treatment instituted was the cauterization of hypertrophied turbinates; nasal polypi, however, septal crests, adenoids, and tonsils were removed with the same beneficial effect. In two of the author's cases, the application of vibratory massage to the diseased mucous membrane also proved successful.

CANADIAN MEDICAL ASSOCIATION JOURNAL.

September, 1912.

1. ARTHUR GILES: Address in Surgery.
2. F. G. FINLEY: Typhoid Pleurisy.
3. D. A. SHIRES: Deep Injections of Alcohol for Trifacial Neuralgia.
4. N. C. SHARPE: Action of Drugs on Uterus.
5. M. W. A. McNAUGHTON and LAWRENCE J. RHEA: Typhoid with Uncommon Lesions Due to *Bacillus typhosus*.
6. H. GODDIEB MACKID: President's Address at Annual Meeting of Association.
7. A. B. AITHERTON: Abdominal Surgery.
8. E. STANLEY RYERSON: Acute Fat Necrosis; Operation; Recovery.

2. Typhoid Pleurisy.—Finley thinks that pleurisy occurs in from one to two per cent. of the cases of typhoid fever, that it is due usually to the typhoid bacillus, that there is a preceding lesion of the lung in many cases, that it is usually benign, and that it does not add materially to the danger of the disease.

3. Deep Injections of Alcohol for Trifacial Neuralgia.—Shires reports successful results in the relief of pain in about two thirds of his cases. Of twenty patients treated in this manner, five years ago, nine are still free from pain. The diagnosis needs to be accurate, for there are neurasthenic conditions which bear close resemblance to trifacial neuralgia, and if such cases are operated in, the resultant paresthesias become very irritating, and the condition of the patient is made worse. In trifacial neuralgia the paresthesias cause little if any discomfort, perhaps because the patient is less sensitive to minor sensory disturbances than the normal individual.

5. Uncommon Lesions Due to *Bacillus typhosus*.—McNaughton and Rhea report two cases, one of acute purulent pericarditis, the other of acute hemorrhagic pleuritis, both caused by *Bacillus ty-*

phosus. Both ended fatally. The organisms isolated from the pericardial and the pleural cavities were identified by their staining properties and cultural changes in the ordinary laboratory media, as well as the various sugars.

BOSTON MEDICAL AND SURGICAL JOURNAL.

September 10, 1912.

1. FRANKLIN S. NEWELL: Indications for Major Obstetrical Operations.
2. WILLIAM F. BOOS: Salvarsan-Calomel Treatment of Syphilis.
3. EDWARD H. PLACE: Bacteriological Diagnosis, Intubation, and Antitoxin Treatment of Diphtheria.
4. HENRY D. CHADWICK and HARRY S. WAGNER: Significance of Symptoms in Pulmonary Tuberculosis.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

September 21, 1912—Part One.

(Part two contains thirty-six original communications on diseases of the eye, ear, nose, and throat, only.)

1. JOSEPH L. MILLER: How May Science of Therapeutics Be Advanced?
2. WILLIAM L. CLARK: High Frequency Desiccation, Fulguration, and Thermoradiotherapy. Uses in Therapeutics.
3. C. J. HUNT: Bacillary Dysentery; Epidemiology.
4. ROBERT N. WILSON: Eradication of Social Diseases in Large Cities.
5. RAY LYMAN WILBUR and THOMAS ADDIS: Urobilin: Clinical Significance.
6. ELLIOTT P. JOSLIN: Experience with Diabetic Patients Living Ten or More Years.
7. C. C. BASS: Successful Cultivation of Malarial Plasmodia.
8. B. S. OFFENHEIMER: Routine Method of Opening Heart with Conservation of Bundle of His and Sinoauricular Node.
9. H. McCURE YOUNG: New Urethrotomy.
10. CLIFFORD G. GRULEE: Relation of Parathyroid Gland to Infantile Tetany.
11. JAMES P. MARSH: Cesarean Section Done under Spinal Anesthesia for Eclampsia.
12. EARLE DRENNEN: Subclavian Aneurysm with Successful Endoaneurysmorrhaphy.
13. G. M. OLSON: Sporotrichosis in North Dakota: Probable Infection from Gophers.

1. How May the Science of Therapeutics be Advanced?—See this JOURNAL for June 15th, page 1290.

2. High Frequency Desiccation, Fulguration, and Thermoradiotherapy. Their Uses in Therapeutics.—See this JOURNAL for June 15th, page 1291.

3. Bacillary Dysentery; Study of the Epidemiology.—Hunt concludes that bacillary dysentery should always be a reportable disease, and health authorities should have full power to investigate and abate any suspected source of this disease. The nomenclature should be broad enough to include all types of the disease; bacillary dysentery will include dysentery and paradyentery. Varied diagnoses such as "diarrhea," "winter cholera," "intestinal grippe," "grippe," "gastric fever," "intestinal disorder," and many others evidence an apparent, notable ignorance of the etiology and probably of the pathology of cases infected by members of the dysentery group, resulting in a longer continuance of the infecting source and a higher mortality. When casually associated with *Bacillus typhosus*, epidemics of bacillary dysentery may be followed within ten to twenty-one days by an increased number of typhoid fever cases. This happened in five out of nine instances in Pennsylvania and may serve as a warning of the presence of the more serious infection; a decrease in the morbidity and mortality due to typhoid fever would follow the abatement of the sources. That we have no definite collective knowledge concerning the morbidity and mortality of bacillary dysentery is due to the facts that the majority of cases of bacillary dysentery are mild in character; that the sporadic cases outnumber those occurring in epidemics;

that sporadic cases may account for deaths under two years of age being returned as cholera nostras, dysentery, diarrhea, and enteritis; that the disease is reportable in only seven States and Territories; and that in the latter the law is not enforced.

5. Urobilin; Its Clinical Significance.—Wilbur and Addis find that valuable approximations may be drawn as to the amount of hemoglobin broken down within the body by simultaneously estimating the urobilin and urobilinogen in the feces and urine, allowing, meanwhile, for the state of the liver and intestinal peristalsis. In alcoholics with enlarged and tender livers urobilinuria may be used as an early indication of impaired hepatic function. While the persistent failure to obtain positive urobilinogen reactions in the urine of a jaundiced patient, by present methods usually indicates absolute closure of the duct, it has not been wholly proved that the only source of urobilin is from the reduction of bilirubin in the intestine, since the presence of not inconsiderable amounts of urobilin in the stools of patients in whom very little bilirubin (closure of the common bile duct or no bilirubin; closure of the common duct and a biliary fistula) reaches the intestines. We should study more closely the urobilinuria and urobilinemia of pneumonia, as the presence of urobilin as such in the blood is apparently, by the present methods, found during life only in this disease, and it may indicate peculiar relations between urobilin and the factors accompanying cyanosis. A careful search for all possible factors producing blood destruction or parenchymatous or obstructive disorders of the liver should follow the discovery of a persistent urobilinuria.

6. My Experience with Diabetic Patients Living Ten or More Years.—See this JOURNAL for June 8th, page 1225.

7. Successful Cultivation of Malarial Plasmodia.—Bass has obtained positive cultures of plasmodia from twenty-nine cases of estivoautumnal malaria, six cases of tertian, and one of quartan. He has carried the cultures on as far as four generations from the parent culture. In his cultures he has only observed the asexual cycle of the parasite. The plasmodium develops readily in the red blood corpuscle, and apparently digests the substance of the corpuscle. Segmentation can be followed satisfactorily in the cultures.

MEDICAL RECORD.

September 21, 1912.

1. APOSTOLOS G. APOSTOLIDES: Etiology and Pathogenesis of Bronchial Asthma.
2. J. MADISON TAYLOR: Negro and His Health Problems.
3. MARGARET A. CLEAVES: Derailed Forces.
4. HERBERT C. CLAPP: Worry as Cause of Arteriosclerosis.
5. G. A. FRIEDMAN: Tentative Diagnosis of Aneurysm of Hepatic Artery, and Findings at Operation.
6. PETER K. OLITSKY: Amenorrhea Due to Thyroid Insufficiency.
7. ISAAC W. BREWER: Are Present Methods of Disposal of Human Excrement Satisfactory?

1. The Etiology and Pathogenesis of Bronchial Asthma.—Apostolides concludes that idiopathic bronchial asthma is due to a congenital excitability of the cortical respiratory centres, produced by a toxemia arising from alterations of the internal secretions of certain glands (thyroid, thymus, etc.), and adds that indisputable evidence of the actual existence of this mechanism has been proved in at least two cases under his personal care. In support of this theory, he recalls the experiments of

Weichardt and Besche who, by injections of different forms of albumin (horse serum), have shown that essential bronchial asthma is usually a manifestation of local cellular anaphylaxis of the lungs. The serum treatment of bronchial asthma and the observations of Landerer and Schittenhelm that asthmatic attacks were always produced whenever horse serum injections were given, strengthens the theory of a local cellular anaphylaxis.

2. The Negro and His Health Problems.—Taylor hinges this whole matter upon the question "Whether members of a tropical race, evolved through thousands of years in hot countries, whose characteristics have gradually become adapted to local climatic conditions, are capable of flourishing or even surviving in a climate wholly at variance with the circumstances of their racial adaptations." Intimate contact of two or more races evolves hybrids. Hybrids are well known to be inferior to the original stock physically and morally. With hybridism comes a lower normal defense to degenerative diseases, lessened inhibition, and a greater rapidity of degenerative processes, increasing as the alien blood weakens and the stronger influences prevail. The health problems of the negro are intimately interwoven with the industrial. The education of the young in principles of citizenship is an obvious need, as it implants the seeds of self respect, of industry, of responsibility, and of obedience to constituted authority. The sale and distribution of delirifacient poisons (alcohol, cocaine, morphine) should be controlled by legislative enactment, as these things craze the negro and cause him to run amuck, and bear heavily on collateral health problems (susceptibility to tuberculosis). Climatic causes are inimical to the negro of the north. Many centuries, says Taylor, will be requisite for the negro to become adjusted to cold climates, and as he is racially unfit to flourish above Mason and Dixon's line, he should never attempt to remain farther north than the Carolinas. It is a noticeable fact that the race is ignorant of its physical or hygienic needs (ventilation, temperance, and wholesome living). Autochthony, an important condition of racial advance, is better assured since freedom, and is to be welcomed as making for racial betterment.

LANCET-CLINIC

August 3, 1912.

1. T. D. CROTHERS: Old Age from Higher Point of View.
2. N. J. STOLL: Telescopic Spectacles, Their History, Practicality, and Future.
3. E. O. SMITH: Complement Fixation Test for Obscure Gonococcal Infections.
4. JOHN K. SCUDDER: President's Address to Ohio Medical Teachers' Association.

August 10, 1912.

5. J. C. LARKIN: President's Address to Highland County Medical Society.
6. O. M. CRAVEN: Medical Inspection of Schools in Cincinnati.

August 17, 1912.

7. LOUIS STRICKER: Work of Cincinnati Association for Welfare of Blind and Its Attitude toward Prevention of Blindness from Venereal Disease.
8. W. S. KENDRICK: What Must Medical Examiners Do to Protect Interests of His Company, and How Does He Do It?
9. JOSEPH KARSCHNER: Lectures Extension to Simple Fracture of Femur.
10. R. L. THOMAS: Value of Delicate Teaching.

August 24, 1912.

1. PAUL W. GOLDSBURY: Skin Tension and Air Bathing.
2. ROBERT H. BARBOCK: Cardiac Syphilis with Special Reference to Aortic Aneurysm and Regurgitation, and Value of the Wassermann Reaction in Determining Etiology and Treatment.
3. WILLIAM STRUHLMAN and MARION H. FISCHER: Contraction of Catgut and Theory of Muscular Contraction.

August 3, 1912.

11. A. RAY, D.: Case of Tetanus.
12. ALBERT H. FARRAR: Treatment of Strabismic Squint.
13. ALBERT H. FARRAR: Diphtheria Bacillus Carriers and Staphylococcus pyogenes aureus.

3. **The Complement Fixation Test for Obscure Gonococcic Infections.**—Smith's technique is the same as that used in making a Wassermann test, except that the gonococcic antigen is used instead of the syphilitic antigen. If the gonococci can be demonstrated by the use of the microscope, this test is unnecessary. It is valuable in obscure cases to determine whether symptoms are due to gonorrhea and also whether or not it is a case of chronic gonorrhea cured. Smith has used this test as a means of differentiation in pus tubes of endocarditis, prostatitis, and vesiculitis. Again, he believes this test is of value in determining whether a man is cured of chronic gonorrhea and whether it is safe or not for him to marry. It will detect with certainty cases of uncured gonorrhea when there are no positive clinical or bacterial findings.

12. **Cardiac Syphilis, Aortic Aneurysm, and Regurgitation; Value of the Wassermann Reaction in Determining Etiology and Treatment.**—Babcock is emphatic in his opinion that all cases of aortic aneurysm and probably the overwhelming majority, if not all instances, of aortic insufficiency (regurgitation) of the vascular type as distinguished from those of endocarditic origin, may be regarded as caused by syphilis and should be energetically treated accordingly, either with or without other indicated medication.

13. **Contraction of Catgut and Theory of Muscular Contraction.**—Strietman and Fischer essay the establishment of a colloid, chemical theory of contraction in striated muscle. They report a series of experiments on the swelling and contraction of catgut, and show that these phenomena are not only identical with the physical phenomena of contraction in striated muscle, but the chemical conditions are identical in both cases.

16. **Diphtheria Bacillus Carriers and Staphylococcus pyogenes aureus.**—Bell calls attention to the discouraging results obtained from the use of the usual methods in cases of diphtheria bacillus carriers. Two cases of persistent Klebs-Loeffler bacillus are reported by the writer, in which the throats were swabbed with fresh broth cultures of *Staphylococcus pyogenes aureus* every morning by the physician, and the remainder of the culture placed in an atomizer to be used as a spray in the throat by the patient, every two hours during the day. A fresh culture in broth is made each morning, no culture over twelve hours old being used. By this treatment the desired results are obtained in days instead of weeks. It should be used during convalescence when all signs of active inflammation have disappeared.

AMERICAN JOURNAL OF SURGERY.

August, 1912.

1. HAROLD BARCLAY: Appendicular Dyspepsia of Insidious Onset with Few or No Focal Symptoms.
2. RAYMOND J. SELIVAN: Hyperthyroidism.
3. A. MONTE LESSER: Cauterization of Dogbites, etc., an Error in Minor Surgery of Major Importance.
4. SYLVAN H. LIPSON and HERBERT SCHÖENRICH: Salvarsan, with Special Reference to Its Relation to Wassermann Reaction.
5. LEIGH F. WATSON: Office Treatment of Hemorrhoids.
6. FREDERICK EMIL NEFF: Surgical Essentials.
7. "O. W. HOWER": Résumé of Treatment of Infertilitas femininis.
8. WILLIAM FRANKS CAMPBELL: Preoperative Treatment of Acute Abdominal Lesions.

1. **Appendicular Dyspepsia of Insidious Origin.**—Barclay has seen forty-one cases of chronic indigestion in which a diagnosis of chronic appendicitis was ultimately reached and the symptoms entirely, or almost entirely, cleared up after appendectomy. These cases could be divided according to their symptoms into four classes. The first class, including twenty-two cases, was characterized by constipation, with or without vague gastric symptoms such as epigastric discomfort, generally after meals. The second type, nine cases, was characterized by periodical headache, with occasional attacks of nausea and vomiting, and more or less persistent constipation. The third type, three cases, simulated gastric or duodenal ulcer, presenting pain referred to the epigastrium, variously described as gnawing or gripping, coming on at definite intervals two or three hours after food, and occasionally relieved by vomiting. In the remaining cases diarrhea was the prominent symptom. From his study of these cases Barclay concludes that a chronic lesion of the appendix may exist without ever producing an acute attack; in some instances such lesions may be present without giving any focal signs, such as local tenderness. Clinically, these pathological changes are characterized by gastric atony, pylorospasm, or interference with the intestinal motility; the latter may be either depressed or stimulated. It is often impossible to make a diagnosis, save by exclusion or exploratory laparotomy.

3. **Cauterization of Dogbites, etc.**—Lesser condemns the common practice of cauterizing the bites of dogs and many other animals, including insects, venomous and otherwise, on the ground that sepsis frequently follows and that cauterization closes the channels of exit from the wound, thereby preventing elimination of virus locally and favoring its absorption. He advises, instead, that the wound be allowed or encouraged to bleed as freely as possible for several minutes, then covered with a wad of cotton saturated with a mild antiseptic solution, such as a mixture of equal parts of alcohol and water with a small percentage of iodine; only such pressure should be used as is required to control the bleeding and protect the wound from further infection, and the cotton should be kept moist. When the area is small, the application of an antiseptic wool fat ointment after the bleeding has been controlled may be of use. Where the wound does not bleed, a suction pump (similar to a cupping pump) should be applied, or, if there is none at hand, cautious suction with the lips may be made, any danger which might attend this being eliminated by holding in the mouth the alcohol, water, and iodine solution already mentioned, while the lips are held over the infected area. When suction does not produce bleeding, the blood capillaries have not been injured, and the poison is being carried in the lymph channels; in these cases the antiseptic wool fat ointment should be applied. After the wound has been dressed remedies may be given to relieve pain or induce general stimulation, if required. In the average case Lesser gives 0.6 gramme of sodium salicylate in combination with 0.05 gramme of caffeine sodium salicylate every three to five hours. This is alternated with an acid pepsin solution, each dose containing 0.3 gramme. The effects of most

poisons are much reduced by lavage of the stomach and enterocolitis.

4. **Salvarsan and the Wassermann Reaction.**—Likes and Schoenrich find that salvarsan influences the Wassermann reaction more strongly than any other form of antisyphilitic treatment. It became negative in thirty-one per cent. of their cases after one injection. Cases resistant to one injection usually responded to a second or third. From the therapeutic standpoint, one injection of salvarsan is not sufficient; the remedy should be repeated from time to time, the Wassermann being used as a guide.

ARCHIVES OF INTERNAL MEDICINE.

August, 1912.

1. JOHN M. SWAN: Influence of Carbonated Brine (Naheim) Baths on Blood Pressure.
2. HARLOW BROOKS and JOHN H. CARROLL: Effects of Sleep and Rest on Blood Pressure.
3. CHAS. W. FROTHINGHAM, JR.: Arterial Lesions Found in Persons Dying from Acute Infections, and Attempts to Produce Arterial Lesions in Animals by Noninfectious Toxines.
4. LORENA M. BREED: Clinical and Experimental Observations with a Saccharomycete.
5. GARRETT LUSK: Note on "Case of Pancreatic Diabetes mellitus" by Herman O. Mosenthal.
6. Pellagra in Illinois; Condensed Report of Illinois Pellagra Commission (Part I).

1. **Carbonated Brine Baths and the Blood Pressure.**—Swan, in observations on eighty-one patients, found that carbonated brine baths have no constant effect on the blood pressure. Since, however, the systolic pressure was raised more frequently than lowered, one may say that the tendency of the baths is to raise the pressure. Although in some cases with high blood pressure a course of baths was followed by a lower systolic pressure, in others the pressure was higher; the converse was true in cases with originally low pressure. There is no method of determining in advance whether a rise or fall will result. In cases of fibroid myocarditis the systolic pressure was lowered more often than raised; but the pulse pressure was raised oftener than lowered. Swan considers it dangerous to use the baths in this condition, since his observations showed that the effect might be an increase of systolic pressure as great as twenty-two mm. of mercury, or an increase of pulse pressure of thirty-two mm. In other disorders of the heart, a similar uncertainty of results was observed, except that in mitral regurgitation the pulse pressure was uniformly reduced and in aortic regurgitation the diastolic and mean pressures likewise always lowered. In arteriosclerosis and interstitial nephritis the rises of blood pressure observed in some of the cases studied might lead to untoward results. Swan concludes that the benefit in the subjective symptoms which follows a course of carbonated brine baths in heart disease is not dependent on the influence of the treatment on the blood pressure.

2. **Effects of Sleep and Rest on Blood Pressure.**—Brooks and Carroll studied this question in sixty-eight patients showing average systolic pressures, in thirty with low pressures and in twenty-nine with abnormally high pressures. The results are, in a general way, illustrated in the cases with average pressure, in which readings taken between one and two hours after the beginning of sleep showed an average drop of twenty-four mm. Hg. Three hours after the awakening in the morning there was still an average depression of twelve mm., and from this time the pressure gradually rose

during the day until usual highest level was reached in the afternoon. The greatest nocturnal fall in pressure took place in those individuals having the highest initial systolic reading. Disturbance of patients during the first sleep was found to delay, but not necessarily prevent the maximal fall in pressure; frequent interruption did, however, prevent it. Special tests were made to determine whether the sleep drop could be artificially increased in order to secure a lower general pressure curve in cases of hypertension; potassium bromide in doses as high as 120 grains, and chloral hydrate, up to fifty grains each night, did not, however, increase the degree or persistence of the fall. Physical rest in general did not appear to alter materially either supernormal or normal blood pressure; but the authors were led to believe that in mental or psychic rest profound changes in pressure occur, and that this factor largely determines the undoubted benefit derived from rest in cases of high pressure.

3. **Severe Arterial Lesions in Acute Infections.**—Frothingham examined the arteries in forty-eight fatal cases of acute infectious disease and found in eight instances severe degenerative lesions characterized by necrosis of the vessel wall, fibrin formation, and cellular invasion. The arterial lesions were fairly well distributed throughout the different organs. They seemed to occur chiefly in infections caused by, or complicated with the pyogenic cocci.

BULLETIN OF JOHNS HOPKINS HOSPITAL.

August, 1912.

1. JULIAN MARX WOLFSOHN: Cutaneous Reaction of Syphilis.
2. GERALD E. WEBB: Studies in Tuberculosis.
3. EUGENE R. GORSON: John Bell, Surgeon.
4. SAMUEL TIGHEBOLD: Some Suggestions to Those upon Whom Aid Success of Ophthalmic Surgeon, in Considerable Measure, Depends.

1. **Cutaneous Reaction of Syphilis.**—Wolfsohn carried out the luetin test, strictly following the method advised by Noguchi, in 150 cases of syphilis. He concludes that the reaction is specific for this disease. It is of greatest value in the latent and tertiary stages. In some treated cases of secondary syphilis the reaction is positive. In parasyphilitics with the cardiovascular manifestations of the disease the reaction may be delayed for from nine to thirty days. The test is helpful in the diagnosis of latent syphilis in pregnancy. In many cases of tertiary and latent syphilis the site of the control injection given shows almost as marked a reaction as the place of injection of the luetin; this appears to be due to the susceptibility to trauma of the skin of syphilitics late in the disease.

2. **Studies in Tuberculosis.**—Webb thinks it necessary to recognize two forms of immunity in tuberculosis, the apparent immunity of the infected to reinfection, and what may be termed true immunity. In the latter no reaction to tuberculin can be expected, and it would appear to be the ideal form of immunity to be sought. By inoculations of gradually increasing numbers of living tubercle bacilli, at first in monkeys, later in children, Webb believes that he has been able to produce the true form of immunity. In forty volunteers for treatment of tuberculosis with inoculations of the living bacilli, some benefit seemed to be produced and no harm ever resulted. In the diagnosis of the disease in children Webb considers the endodermal test more reliable than the von Pirquet; in his experi-

ence not so many children reacted to the latter test as the autopsy records seemed to require. In view of the difficulty experienced in having children submit repeatedly to the endodermal test, he modified it as follows: Old tuberculin is dried on hypodermic needle points; the points are moistened with a drop of pure water placed on the sterilized skin, plunged through the skin and given a twist as they are withdrawn. The resulting pain is very slight. Such tests were found positive in some cases where the von Pirquet was negative. The reaction is characterized by a definite lump, probably an actual tubercle. Slight temperature elevation occurred in two out of 100 tests. The best site of injection was found to be over the radial muscles.

INTERNATIONAL JOURNAL OF SURGERY.

August, 1912.

1. J. C. O'DAY: Pancreatitis.
2. J. FORMICHELLI: Puncture Operation in Treatment of Tuberculous Peritonitis.
3. H. D. MURKIN: Tuberculous Peritonitis Treated by Intraperitoneal Use of Oxygen.
4. H. S. LOTT: Clinical Talk on Ectopic Gestation.
5. C. M. HARPER: Syphilis. Report of International Congress in Rome.
6. DWIGHT H. MURPHY: Proptitis and Its Probable Etiological Factors. Results of Treatment (*To be continued*).
7. J. C. SHAW: Immunity.
8. J. C. WALTON: Static Electricity as Therapeutic Agent.
9. HERBERT P. COLE: Injuries to Elbow Joint.
10. F. A. WEBB: Organization: Each Surgeon as a Factor.

3. **Intraabdominal Use of Oxygen in Tuberculous Peritonitis.**—Meeker reports a case of tuberculous peritonitis in a boy of ten years in whom, after removal of the ascitic fluid, the incised peritoneum was sutured with the exception of a small area through which oxygen was passed into the abdominal cavity by means of a blunt glass tube. The abdomen was distended until the wall was moderately tense, the tube withdrawn, and the wound closed. The ultimate result was excellent, recovery taking place. The author performed experiments in cats which justified the following conclusions: Oxygen is completely absorbed from the abdominal cavity, more rapidly when warmed; it acts slightly as a respiratory and cardiac stimulant, has but little effect on blood pressure when given under moderate pressure, and hastens recovery from anesthesia. It tends to prevent the formation of adhesions more effectively than an inert gas, quickly changes dark blood to scarlet in the presence of anoxemia, and stimulates intestinal peristalsis. Webb has administered oxygen intraperitoneally in a number of additional cases in human beings, with beneficial results such as to entitle the procedure, in his opinion, to an established position in surgical therapy. He warms the gas to about 100° F. After ascertaining that the liver is not adherent to the abdominal wall he distends the abdomen until liver dullness is obliterated. A tendency to collapse after the oxygen had been absorbed, *i. e.*, after twenty-four hours had elapsed, was observed in some patients whose condition was very poor. In employing the measure, this tendency should be guarded against.

LONG ISLAND MEDICAL JOURNAL.

August, 1912.

1. FREDERICK TILNEY: Treatment of Cerebral Hemorrhage at Time of Onset.
2. GLENDON R. BELLER: Treatment of Two Modes of Death in Lobar Pneumonia—Cardiac Paralysis and Vasomotor Paralysis.
3. M. J. LINDER: Case of Emphysema thoracis Complicating Typhoid Fever.

1. Treatment of Cerebral Hemorrhage.

Tilney lays stress on the usefulness of blood pressure estimations, both for diagnostic and therapeutic purposes, in cerebral hemorrhage. Whenever the pressure is observed to rise steadily and tends to exceed 250 mm. Hg. the withdrawal of blood to the extent of ten or twelve ounces will prove beneficial. Drugs are preferably given by the mouth, when possible. Tilney advises the use of tincture of aconite in five minim doses or fluidextract of the same drug in doses of 0.5 to two minims, given hourly under careful supervision, until a fall of at least twenty or thirty mm. in the blood pressure has occurred. The pressure should then be maintained at the lower level. Veratrum viride may be substituted for aconite; it is more especially indicated in cases complicated by uremia. Where the patient cannot swallow, Tilney gives hypodermically crystalline aconite, grain 1/150, or gelseminine hydrochloride, grain 1/25 to 1/15, dissolved in as small an amount of water as can be conveniently used. In cases presenting convulsions, restlessness, vomiting, or hiccup, nerve sedatives should be given to prevent unnecessary physical exertion. After forty-eight hours, fluid nourishment, consisting of milk and gruels, with or without sugar and eggs, may be given by mouth, at first by means of a dropper or spoon, if the patient is able to swallow; if marked dysphagia is present, rectal feeding is indicated. Other necessary measures include appropriate catharsis, the use of some mildly acid mouth wash, the removal of excessive salivary secretion by swabbing or inhibition of it with small doses of atropine, the application of pads to prevent bedsores, and light splinting of the paralyzed limbs. In nephritic patients with stupor and convulsions, lumbar puncture and phlebotomy are especially helpful.

2. **Treatment of Lobar Pneumonia.**—Butler recommends that when the pulse rate equals or exceeds the blood pressure, in millimetres, from two to five grains of caffeine be given hypodermically every four or six hours. Where further evidences of vasomotor failure appear, fifteen minims of one to 1,000 adrenalin solution should be given in addition, intramuscularly, every two or four hours. Where the abdomen is distended the application of a couple of ice bags will often slow the pulse rate as well as lessen the tympanites.

Proceedings of Societies.

INTERNATIONAL CONGRESS ON HYGIENE AND DEMOGRAPHY.

Fifteenth International Meeting, held at Washington, D. C., September 23-28, 1912.

The President, Dr. HENRY P. WILCOTT, of Massachusetts, in the Chair.

Address of President Taft.—The President said it was his pleasant and honorable duty, on behalf of the people and Government of the United States and by the direction of Congress, to welcome this great convention to Washington. Prevention was better than cure. The science of medicine and surgery had made wonderful growth in

the last forty years, but in that time it would seem as if the sciences of sanitation, hygiene, and preventive medicine had come into being from nothing. Prevention and cure came from the intense energy, industry, application, keen discrimination, and the high enthusiastic aims of the benefactors of human kind who were now devoting their lives to research and to the investigation of the causes of disease, its transmission, and its antidotes, and they were proceeding *pari passu* with such rapidity and success, that we must expect to find that fountain of youth and perpetual life which was sought for in this country by some of the earlier discoverers. We needed to develop under the governmental auspices a bureau or a department in which the funds of the government should be expended for research of every kind useful in the practice and enforcement of hygiene and preventive medicine. That something of this sort might grow out of the present United States Public Health Service there was reason to believe, but it would need far greater appropriations and a widening of its scope of duties before it filled the place that the medical profession of this country had a right to expect the general government to create in the progress of hygiene and demography.

The problem of enforcing health regulations against the will of ignorant people, whose natural laziness and resentment made their enforcement most difficult, required a strong government, and the reason was to be found in taxation to maintain an adequate health service. These were problems in the tropics that our government must meet. There was no difficulty in running a government if we limited its functions to the mere matter of preserving peace and the administration of justice, but if we proposed to add to this adequate systems of education, government hygiene, and other internal improvements, we must look about for sources of revenue which were not always forthcoming, and the absence of which retarded progress in the interest of the people.

The President considered it a proud record of the American army that, through its medical corps engaged in hygienic work in the tropics, so many important discoveries as to the transmission of disease and the methods of stopping its spread had been given to the world, and all of this dated chiefly from the time of the Spanish War. He could not conceive of any congress of more useful character than the one which it was his honor to welcome. It was useful, first, because of comparison of the ideas and the discoveries and the theories of men engaged in the same hunt for the truth, and the same delving into the mysteries of Nature, with a view to discovering her secrets in the matter of the cause and cure of disease, must result in a general benefit to all who partook in such a congress.

It was delightful to contemplate this phase of the congress, because it was one of those shining instances of worldwide organization for the promotion of the peaceful arts, of which he was glad to say the number was growing every year, and in which the common interest of humanity was made conspicuous by contrast with the selfishness of each nation in the conflict of interests that were typified by our burdensome and ever increasing prepara-

tions for war. Within the last decade or so no profession had shown greater improvement; no profession had done more for the improvement and for the promotion of health and the comfort of mankind than the medical profession. He congratulated the medical profession of the United States upon this great congress.

Physiological Significance of Some Substances Used in the Preservation of Foods.—Dr. JOHN H. LONG, of Chicago, dealt with the action on the human organism of a number of substances employed as food preservatives, or otherwise in the preparation of food. A considerable number of substances were added to food largely because of their preservative properties, rather than because of flavors they might impart. Some of the so called "natural" preservatives came under this head. Modern conditions of living and modern scientific advances called for the introduction of more efficient bodies, the so called "chemical" or "artificial" preservatives. Many of these bodies had been condemned, and perhaps properly, but frequently the condemnation was solely on the ground of their origin. This basis of condemnation had no justification in fact, as all preservatives were as truly chemical as those of recent introduction made by industrial processes. The active principles in cloves, cinnamon, allspice, etc., were true chemical compounds, and in their action on the body and final disposition were much like benzoic acid, now made largely by laboratory processes.

A number of important investigations on the physiological action of sodium benzoate had been carried out in the last few years. The effects of large and small amounts of benzoic acid were known, and it had been clearly shown that the use of the small quantities employed in the ordinary protection of the condimental foods was quite unobjectionable. Such small amounts were normally disposed of in the human body without ill effects.

Management of Tuberculosis among School Children.—Dr. ARTHUR T. CABOT, of Boston, stated that proper measures for the prevention and control of tuberculosis among school children should look not only to the protection of children during their school life and to the cure of those that had active tuberculosis, but should aim at the education of all children in the essential facts of hygiene with the cultivation of habits of living which would protect them later in life. Two ways had been devised for accomplishing this: 1. Hospitals; 2, hospital schools. Isolation hospitals would naturally give the most complete segregation of these children, but unfortunately only a small proportion of the parents were willing to have their children go to a hospital. The result was that in a community where only hospital accommodation was provided, the greater part of the tuberculous children quit going to the public schools, or when too sick for that they remained at home, spreading the infection through their family and friends. The hospital school afforded less complete isolation than a hospital, but with a proper corps of nurses who followed the children to their homes and taught the parents the necessary preventive measures much in the way of prevention might be accomplished. The school had the great advantage that the parents were willing to send their children to it. The

nurses connected with the school were able to follow the children to their homes and so to extend the hygienic teaching to the parents. The hospital school was the best means yet devised for caring for the already tuberculous children.

The Prevention of Occupational Diseases.—

Dr. H. LINENTHAL, of Boston, stated that to protect the workers from the ill effects upon their health from industrial processes or unsanitary conditions, the following measures should be adopted: 1. Collection of complete and accurate data about industrial processes and about conditions under which the various industries were carried on. 2. Acquisition of more accurate and detailed information relative to occupation on morbidity and mortality records. 3. Instruction of the medical student in this important field of preventive medicine by a course of lectures on the more important industrial processes and the diseases to which they gave rise. 4. Placing the specific industrial diseases on the list of diseases notifiable to the central health authority. 5. Examining periodically all workers in certain industries, these industries to be named by the central health authority. 6. Excluding minors and women from certain industries which were designated by the central health authority as injurious to health. 7. Enacting adequate laws regulating sanitary conditions and protective devices in industrial establishments and to have such laws intelligently enforced. 8. Issuance by the central health authority of regulations for certain dangerous trades, with instructions to employers and employees how to guard themselves against the ill effects of their work, and to have such instructions posted in the workrooms. 9. An extensive educational campaign both among employers and employees as to the value of protective measures and good sanitary conditions.

Dust and Fumes, the Foes of Industry.—Sir THOMAS OLIVER, of the University of Durham College, Newcastle, England, as the result of scientific experiments, to which he was directed, particularly by the appalling loss of life through explosions in coal mines in Newcastle, spoke of a chemical agent which, by acting as an absorbent on coal dust, would prove a practical preventive of these explosions.

Mine owners had experimented in many ways to prevent the ignition of coal dust; they sprinkled the galleries of mines with water. This for a time seemed to prevent the ignition of the dust, but at the same time it afforded enough moisture for the germ of ankylostomiasis, which attacked the workers in many of the English collieries. This had to be abandoned. Dustless zones were tried, also the plan of sprinkling stone dust throughout the mine. Experiments had been made in his laboratory which convinced him that the explosions in the mines were largely due to the absorption of oxygen by the coal dust. He found that the explosions generally occurred in the summer months, when a barometric change was likely to ignite the dust. He had experimented with coal dust and found that the dust absorbed more oxygen in the dark, and also that dust sprinkled with water absorbed little less oxygen than the dry dust. Some of the dust was treated with a chemical agent and it was found that it was practically nonabsorbent compared with coal dust in other forms. Speaking of the evil effects

of fumes as a cause of industrial disease, he congratulated Congress and the President upon the passage of the act prohibiting the use of the white phosphorus in the manufacture of matches, which led to a general phosphorus necrosis of the jaw bones of employees in match factories.

Breathing Exercises and Open Air Instructions in Schools and Colleges.—Dr. S. ADOLPHUS KNOPP, of New York, showed the inestimable value of breathing exercises for children and young people, particularly during the time when they were attending school and college. Pupils and students were confined a good many hours out of the twenty-four, either in the classroom or at home and were occupied a good part of the time with mental work. They often sat in a cramped up position with bent over chest. Many children attending public schools were predisposed to tuberculosis, and not only they, but also those from nontuberculous parentage, would be greatly benefited by a systematic course of breathing exercises performed several times during the day in fresh, pure air.

Beside breathing exercises he pleaded for more outdoor instruction. Whenever the weather permitted, singing and recitation should be done outdoors, and natural sciences which could be studied in the open should be taught in the open. Because many public school rooms and class rooms in colleges were overcrowded and ill ventilated, the typical open air school for summer and winter, conducted under the well known precautions enumerated, should be the rule rather than the exception.

Instruction in Child Hygiene.—Dr. MARY SUTTON MACY, of New York, read this paper, which will appear in this JOURNAL.

Hygiene of Infancy and Childhood and School Hygiene.—Dr. S. W. NEWMAYER, of Philadelphia, had made a study of the deaths among babies by days and months in the first year of life, and showed that in the United States, in 1910, over 150,000 babies died in their first year, and thirty-five per cent. of this number died in the first month. One half of the deaths in the first year were from diseases of the digestive tract, tuberculosis, pneumonia, and other contagious diseases. Most of these early deaths were proved to be due to absence of hygiene during pregnancy and lack of care and skill during and after delivery. Less than one half of the maternity cases in the country were attended by physicians, the remainder being cared for by students and midwives. Suggesting means whereby the city and State health departments could supervise a large percentage of the births, Doctor Newmayer strongly advocated the employment by all cities and towns of municipal visiting nurses, who should teach the prospective mother the proper hygiene and care before confinement and the care and the feeding of the baby after birth.

Public School as a Possible Factor in Preventing Infant and Child Mortality.—Dr. HENRY L. COIT, of Newark, N. J., proposed as a comprehensive plan to check sickness and death among infants and young children, that to the Manchester plan for "little mothers" should be added the French plan, and that the "consultation for mothers" should be conducted within the public school and finally become a part of its system. The best means of preventing sickness and death would be to raise the

living power of the individual to what was called immunity. If we could apply this principle to infancy and childhood through educational and prophylactic measures, we would bring about the greatest possible physical efficiency in manhood and womanhood. While physicians had led in this crusade against infant mortality, it was strictly a problem in preventive medicine and, therefore, clearly to be solved by educational methods which should be applied by the people at the expense of the people and for the people. The fundamental cause of infant and child mortality, expressed through many channels, was ignorance, and the most potent influence which would destroy and remove it was applied knowledge.

Statistical Comparison of the Mortality of Breast Fed and Bottle Fed Infants.—Dr. WILLIAM D. DAVIS, vital statistician of the health department of Boston, Mass., said mothers should suckle their children. Of babies reaching the age of two weeks, one in five died before a year old if bottle fed, while if breast fed, only one in thirty failed to reach the one year mark. This meant that the deaths of these infants would be sixty per cent. less than they were to-day if all babies were breast fed. Some countries had already awoke to this astonishing fact, and in Norway, where mothers suckled their children, the infant mortality rates were among the lowest in the world.

Etiology of Measles.—Dr. JOHN F. ANDERSON and Dr. JOSEPH GOLDBERGER, of the hygienic laboratory of the United States Public Health Service at Washington, announced two discoveries in connection with the common children's disease, measles. They found that monkeys might get the measles and that the disease was communicated, not by the scaling off of dried particles of skin, but by sneezing of the patient during the early stages of the disease. Doctors had long tried to infect animals with measles in order to study the nature of the disease and find a new method of combating epidemics, but had failed so completely it was thought the germ was harmless to the lower animals. Their investigations had shown also that the commonly accepted theory that the scales or dried particles of skin that were brushed off a child with measles carried the germs, was entirely erroneous, and these scales had nothing to do with contagion. Nose and mouth secretions conveyed the germs from the sick to the well. A child with measles coughed and sneezed a great deal; when this was done a fine spray was thrown out and this carried the germs of the disease. Any child who had not had measles and who breathed this spray would catch the disease. They also showed that it was possible for a child to become infected by drinking from the same dipper that another child in the early stage of the disease had used. This accounted for the fact that epidemics of measles occurred so frequently in schools and other places where children gathered.

Occurrence of Syphilis and Gonorrhea in Children by Direct Infection.—Dr. ABRAHAM L. WOLBARST, of New York, said that syphilis and gonorrhea occurred in children more frequently than was usually supposed. Diagnosis was often not made until symptoms were very marked. The method of infection varied with the age of patient. At birth, the eyes of the infant were affected with

gonorrhea, through the mother, the latter in turn usually having been infected by the father. In both instances, infection was avoidable and unnecessary. At birth, syphilis was usually hereditary, and manifested itself immediately or soon after birth. The syphilitic nursing infant might infect the mother who had thus far escaped infection by the father. In childhood and adolescence, both diseases might be acquired by direct infection through the sexual act. Unhygienic conditions and lack of privacy in the homes of the poor, were the chief causes of sexual precocity in children, leading first to curiosity and finally to actual sexual desire. It was not unusual for children under ten years of age to indulge in coitus. Unscrupulous and ignorant adults were not slow to take advantage of these conditions; both sexes were prone to indulge with children. Adult males were more apt to tamper with female children than vice versa, though it was not uncommon for nurse maids to initiate male children in the habit. The result was the transmission of gonorrhea or syphilis, or both, to the child.

Infant Mortality in Relation to Factory Labor.—Dr. GEORGE REID, of Stafford, England, stated that the twelve months' life history of about 5,000 infants born in families of the artisan class of the pottery towns of North Staffordshire in 1908 was inquired into, with the result that the infantile mortality among the class of working mothers was found to exceed that of the domestic class by forty-three per cent. Classifying the whole of the infants according to the method of feeding, it was found that the mortality among those partly artificially fed exceeded that of the naturally fed class by seventy-nine per cent., while the mortality among the wholly artificially fed showed an excess of 157 per cent.

Labor and Work of Children Adapted to the Individual Child.—Dr. THOMAS MORGAN ROTCH, of Boston, said that children of the same age differed radically in the degree of their physical development. A valuable aid for determining physical development could be derived from an examination of the joints by means of the x ray. The carpal bones and epiphyses of the wrist and hand represented fairly well, for practical purposes, the entire bony development. They also showed progressive stages of development from birth to adult life. Developed functions should be used or they became weakened. If an individual was lacking in physical development he should be withheld from work which demanded a greater physical development. If an individual had a physical development above the normal average, he should be allowed to do work in proportion to this development, provided that his mental condition and requirements were also in the same proportion above the average.

Antityphoid Inoculation.—Dr. LESLEY H. SPOONER, of Boston, related three years' experience with antityphoid inoculation in the training school for nurses in Massachusetts, who under the best conditions suffered a high morbidity from typhoid. Its success depended upon its safety and the ease with which it could be accomplished. These ends were secured by the use of a low virulence vaccine administered at frequent intervals in small doses. The results, from the point of view of the blood changes and incidence of the disease, seemed to

justify the procedure. The use of the same prophylaxis during epidemics was safe, sane, and most desirable.

Mortality and Causes of Death by Occupations.

—Dr. JACQUES BERTILLON, of Paris, France, tabulated the results of various occupations and professions with regard to the degree of frequency of various causes of death in each. He compared by countries the mortality of each profession to the average mortality of the country. When the mortality in a profession was inferior to the general average during youth, and on the contrary exceeded the average at mature age, and when these same results were found in several tables, the deduction was drawn that this profession was injurious to health, and that an investigation of the diseases causing such results should be made.

Cost of High Living in Its Relation to Public Health.—Professor MAX RUBNER, of Berlin, said that one of the greatest problems now confronting mankind was that of providing the race with proper nourishment. Every city should have a department in its government clothed with plenary powers of caring for this branch of the people's welfare. Changed conditions in the last half century had brought the question of feeding the human race to a critical point. He urged that the school children be watched carefully, and that in the cases of those children who failed to receive proper or sufficient nourishment at home, the deficiency be made up. This is being done in some of the lower schools in Germany. One of the best methods for correcting the terrible deficiencies of race nourishment was to establish a course of housekeeping in the public schools.

Infant Hygiene.—Dr. GEORGE J. HOLMES, of Newark, favored the admission of mothers to public schools for instruction in infant hygiene.

Dr. JOSEPHINE BAKER, of New York, referred to malnutrition in school children, and advocated the employment of visiting nurses for the instruction of mothers in the care of children's food.

Dr. SIMON FLEXNER, of New York, emphasized the great importance of controlling cerebrospinal meningitis. He had had an opportunity to examine nearly 1,300 cases of this disease in which the serum was used. These cases were representative, in that they came from all parts of the country. Of 1,249 cases, 849 ended in recovery, and 400 resulted fatally. In speaking of the Louisiana epidemic, he declared that serum was administered in 176 cases, of which 123 ended in recovery. In seventy-four cases the serum was not administered, and of this number sixty-three were fatal. The death rate where the serum was not used was about eighty-five per cent.

Dr. CHARLES G. KERLEY, of New York, had observed hundreds of children who had been adopted or otherwise sent out into the world, and, irrespective of their origin, they had held their own in whatever environment they happened to be placed. We might mould a child largely as we wished, and the fashioning and the moulding, whether it was done well, indifferently, or badly, depended more upon the moulder and the children's associations than upon the material worked upon. Character indicated the individual. Heredity had but little influence in determining character. Character was

the product of environment. He favored the creation of a commission or committee by which the State, through its subordinates, might know and have authority over every child. This would solve many of the urgent problems that confronted the public and the profession.

Dental Hygiene for the Pupils of Public Schools.—Dr. S. ADOLPHUS KNOPF, of New York, read this paper, which appeared in the JOURNAL for September 28th, page 617.

Use of Bacterial Vaccines in the Prevention of Typhoid Fever.—Major F. F. RUSSELL, of Washington, D. C., said that the vaccination of the army was practically completed in the early part of 1912, since which time recruits and reenlisted men only had been vaccinated. The first dose was given within one or two days of the day of enlistment, and vaccination against smallpox was carried out at the same time. The first dose contained 500,000,000 bacilli, the second and third, given ten and twenty days later, contained 100,000,000 each. The effect of this measure upon the prevalence of typhoid in the army was shown by a table. During the past year compulsory vaccination against typhoid had been adopted in the navy, and their entire personnel had been vaccinated, and as a result the disease had practically disappeared from their service. The vaccine was prepared from a carefully selected old, avirulent strain of *Bacillus typhosus*, which was grown for twenty-four hours on agar; the growth was washed off in salt solution (8.5 per cent.) killed by heating to 55° C. for one hour, diluted so that one c. c. contained 1,000 millions bacilli, and 0.25 per cent. tricresol was added as a matter of safety. The finished vaccine was distributed in sealed glass ampoules.

Infant Mortality in the City of New York.

Dr. WILLIAM H. GUILFOY, of New York, said that the death rate among infants in New York was not necessarily higher than that of the smaller and less congested cities. The death rate under one year of age for 1,000 births in the city of New York in 1911 was 112, this rate being based on a probable ninety-five per cent. of the births that actually occurred, and if corrected for this deficiency the rate would be 106. Compared with the rate of 130 for 1,000 births reported in England and Wales, the result was not to the discredit of New York city. Two out of thirty-eight German cities of over 100,000 population showed an infant mortality slightly lower than that of New York; the remaining thirty-six showed rates considerably higher. The rate for London in 1910 was 104, which was a shade less than that of the actual infant mortality in the city of New York in 1911.

Municipal Control of Plague.—Surgeon General RUPERT BLUE, of Washington, D. C., said that to eradicate plague from a city, it was necessary to have an organization for that purpose, and to have laws covering the necessary sanitation. The continued enforcement of ratproofing laws in a city that had been once infected was emphasized as the best insurance against a recurrence of the disease. Plague was to be eliminated from the history of mankind by the application of similar principles wherever infection existed. By international regulation all vessels should be fumigated periodically to kill rats. Infected ports should have a

medical surveillance of outgoing traffic. Notification should include both epidemic and epizootic foci of the disease.

(To be continued.)

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Surgical Operations. A Handbook for Students and Practitioners. By Prof. FRIEDRICH PELS-LEUSDEN, Chief Surgeon to the University Clinic and Chief of the University Surgical Polyclinic in the Royal Charity Hospital of Berlin. Only Authorized English Translation. By FANTON E. GARDNER, M.D., New York. With Six Hundred and Sixty-eight Illustrations. New York: Reiman Company, 1912. Pp. xxxi-726. (Price, \$7.)

This volume is the result of the author's attempt to put in book form what he has for many years taught students in practical courses and theoretical lectures. It bears, therefore, the mark of the practical teacher who intends it primarily for students and general practitioners. It is not as one might think purely a manual of operative surgery, but treats of indications and gives full directions for post-operative treatment. It thus belongs among the textbooks of general and regional surgery in which the chief stress is laid upon the operative procedures. All reference to special cases is omitted, as well as the history of the different procedures. The best modern procedures are alone given, and the reader has a choice of different methods, all of which the author has tested either on the living or dead subject. The illustrations are very clear and show at a glance the essential points in the technique. Omissions have been made, in some instances especially, of procedures devised by other than German surgeons. Thus Lane plates which have found general adoption in this country as well as in England where they were first used, are not even mentioned. In fact the subject of the suture of bones is given far too little space in a modern book on surgical technique. The subject of direct transfusion of blood which has become such a life saving measure since the introduction of Crile's tubes certainly deserves a chapter in a book published to-day. Space is given to typical ligations which might rather be devoted to procedures which have a far greater practical importance. The surgery of the abdomen, on the other hand, is up to date, and the new methods of performing intestinal anastomosis are well described and illustrated. One of the best features of the book is the insertion of a large number of original drawings showing points in technique which often give a clearer idea to the reader than a page of description. The translation has been well done and all the changes necessary to make the book intelligible to English speaking readers have been faithfully made. It is a safe book for the student and general practitioner, but the specialist will find many gaps when he looks here for the newer methods of operative procedure.

Lehrbuch der Haut- und Geschlechtskrankheiten. Bearbeitet von Professor Dr. BETTMANN, Heidelberg; Professor Dr. BRUNNS, Charlottenburg; Professor Dr. BUSCHKE, Berlin; Professor Dr. EHLMANN, Wien; Professor Dr. GROUVEN, Halle a.S.; Professor Dr. JESIONEK, Giessen; Professor Dr. RIECKE, Leipzig; Professor Dr. RIEHL, Wien; Professor Dr. TOMASCZEWSKI, Berlin; Professor Dr. TÖRÖK, Budapest; Professor Dr. RITTER von ZUMBACH, Wien. Herausgegeben von Professor Dr. ERHARD RIECKE, Leipzig. Zweite vermehrte und verbesserte Auflage. Mit 17 Farbentafeln und 307 grossen, teils mehrfarbigen Textabbildungen. Jena: Gustav Fischer, 1912. Pp. xii-756.

It is a pleasure to review this book, which both in form and matter is worthy of the noted names of its authors. The first part, by Riehl, is devoted to general derma-

tology; then follows special dermatology, the various groups of which are discussed at length by Salomon Ehrmann, Riecke, Bettmann, von Zumbach, Török, Grooven, Tomaszewski, and Jesionek. The article on syphilis is by Buschke, and that on gonorrhea and soft chancre by Bruhns. All are written from the most modern standpoint, and represent the latest and best ideas on the subjects of which they treat; so that the 750 pages of the volume form an adequate and complete textbook sufficient even for the needs of the specialist, and in accessible and handy form for the general practitioner. Several points call for special commendation. The seventeen color plates are from moulages and are printed on heavy inserts in the usual style; but the paper used for the letterpress is so much better than that usually employed that it has been possible to print many colored illustrations in the text with great success, and without in any way showing through or interfering with the letterpress on the other side of the page. This is a comparatively new departure, and presages the time when the textbook of dermatology will necessarily be the atlas also; it being practically impossible to adequately describe skin eruptions by words alone. Another point to be commended is the appearance of the complete work at once, in one volume. Those of us who have had experience in the past with works of this character appearing in parts at intervals of months or years will appreciate this feature. In accordance with custom, apparently, a very brief bibliography is appended to each article. We fail to see the usefulness of these, since half a dozen references for so many important subjects will hardly help the practitioner, who wants authoritative statements in a textbook, and are obviously entirely inadequate to the needs of the special student. A final commendatory note may be made of the fact that the pages are cut. In continental fashion, the work is in paper covers and the binding is left to the taste and purse of the purchaser.

Landmarks and Surface Markings of the Human Body.

By L. BATHE RAWLING, M.B., B.C., F.R.C.S., Surgeon with Charge of Out Patients, Demonstrator of Practical and Operative Surgery, Late Senior Demonstrator of Anatomy at St. Bartholomew's Hospital, etc. With Thirty-one Illustrations: Fifth Edition. New York: Paul B. Hoeber, 1912. Pp. viii-96. (Price, \$2.)

These *Landmarks* constitute a very handy and practical book, which is divided into five chapters. In the first chapters are given the surface markings of the head and neck which are of practical value, that is such landmarks as depict on the surface the underlying structures, omitting any complicating system, they are illustrated with five cuts. Chapters two and five treat of the extremities. Here the reader's attention is mainly directed to those bony prominences and muscular or tendinous elevations which lie in the region of the joints; they include each nine illustrations. In chapter three the thorax is discussed with three illustrations, while the abdomen is to be found in chapter four, also with three illustrations. An appendix has a list of the lengths and various passages and tubes, of weights of some organs, etc.

Syphilology and Venereal Disease. By C. F. MARSHALL, M.D., M.Sc., F.R.C.S., Surgeon to the British Skin Hospital, Late Assistant Surgeon to the Hospital for Diseases of the Skin, Blackfriars, etc. Second Edition. London: Baillière, Tindall & Cox, 1912. Pp. xii-560. (Price, 10s. 6d.)

This is a thoroughly up to date treatise of 500 pages on the whole subject of venereal disease. It is written in a very attractive style and brings the whole subject before the reader in an unusually systematic and clear way. Besides including the experience of the author, an authority on the subject, it furnishes the views of other notable workers in this field, notably, Fournier, Finger, Neisser, Schaudinn, and Luys. The latest contribution to the pathology of syphilis, such as the experimental inoculation of monkeys, the discovery of *Spirocheta pallida*, the important subject of parasyphilis, and the recent evidence on the transmission to the third generation, are all ably discussed. On points admitting of doubt the author has given his own opinions, based on a wide clinical experience. The appearance of a second edition within five years attests not only the additions that have been made to our

knowledge of this subject, but also the warm reception given the book. The work can be highly recommended to the student receiving his first instruction in this topic, on account of the didactic way in which the book is written. It is also most useful to the practitioner who wishes to review this field and familiarize himself with the latest additions to the knowledge of this old, but most vitally important subject. This edition describes in detail the different methods of serum diagnosis, the treatment with organic preparations of arsenic, notably salvarsan, and the vaccine treatment of gonorrhea. The book can be highly recommended to the American student as a model of clear and concise statement and a scholarly presentation of the whole subject of venereal disease and its sequelae.

Pathology of the Eye. By P. H. ADAMS, M. A., M. B., D. O. Oxon., F. R. C. S., Surgeon to the Oxford Eye Hospital, Consulting Ophthalmic Surgeon to the Radcliffe Infirmary. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1912. Pp. x-194. (Price, \$1.50.)

This manual, which has been written for beginners in ophthalmology, is an excellent handbook. Histology is dwelt on, as it should be, before proceeding to the description of pathological conditions. All the most recent and well accepted ideas are reviewed in a short, cursory fashion without theorizing; so that the ophthalmic student should find it a very helpful, ready reference volume. The makeup of the book is quite up to the splendid standard of the Oxford medical publications.

Aids to Ophthalmology. By N. BISHOP HARMAN, M. A., M. B. Cantab., F. R. C. S. Eng., Lecturer in Ophthalmology, West London Postgraduate College, Assistant Ophthalmic Surgeon, West London Hospital, etc. With 100 illustrations. Fifth Edition. New York: William Wood & Co., 1912. Pp. viii-216. (Price, \$1.)

This pocket manual is what it purports to be, a first aid to the ophthalmic student. It is a well considered little volume that covers the ground of ophthalmic science in a sort of quiz compend style. The viewpoint is that of the English ophthalmic surgeon, and naturally the teaching as to refraction is somewhat loose. For instance, "one diop-ter of astigmatism or more should certainly be corrected." Not one word is said as to the etiology of astigmatism in the production of myopia. However, these are minor flaws. The general teaching is good, and the work should prove valuable to the beginner in ophthalmology.

What to Do in Cases of Poisoning. By WILLIAM MURRELL, M. D., F. R. C. P., Senior Physician to the Westminster Hospital; Lecturer on Clinical Medicine and Joint Lecturer on the Principles and Practice of Medicine, etc. Eleventh Edition. New York: Paul B. Hoeber, 1912. Pp. 283. (Price, \$1.)

This is a useful manual in convenient form for quick reference, and its 287 pages may be easily slipped into the pocket. All the familiar antidotes and other methods of dealing with poisoned patients are fully described, and the author has indulged in several philosophical reflections where space permitted. For example, in discussing alcohol, he uses words that should be pondered by all distillers and proprietors of saloons, as well as various types of reformer: "It must be remembered that it is not so much the quantity we take as the inferior quality with which we are supplied. The alcoholic stimulant in whatever form it may be taken should be free from fusel oil to such an extent that a healthy man, even after exceeding considerably, should not experience any other effect than that of pure stimulation. If on the following morning there is persistent headache, followed by continued dilatation of the cerebral bloodvessels, with incapacity for work, and dullness of ideas, it may be taken for granted that the wine was bad and contained fusel oil." Under the treatment of alcoholism, the author makes the suggestion that sometimes a woman can be found to take the patient in hand and substitute a strong will for his weak one. Under opium, the writer contradicts much of the rubbish that has been written on the subject of opium addiction. Advice is given of a general nature and even the proper fee for saving a patient is discussed. The little manual will be found to contain much more than a mere list of antidotes and really affords stimulating and amusing reading.

Official News.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending September 28, 1912:

Bull, Raymond C., First Lieutenant, Medical Corps. Ordered to the Army Medical School, Washington, D. C., for instruction. **Connor**, Clarence H., Captain, Medical Corps. Granted thirty days' leave of absence. **Duckwall**, Bertram F., First Lieutenant, Medical Corps. Ordered to the Army Medical School, Washington, D. C., for instruction. **Holmes**, Robert W., First Lieutenant, Medical Corps. Resignation has been accepted. **Jones**, Harold W., Captain, Medical Corps. Leave of absence extended fifteen days. **Kinsey**, Oliver, Jr., First Lieutenant, Medical Reserve Corps. Ordered to the Army Medical School, Washington, D. C., for instruction. **Maddux**, H. C., Lieutenant, Medical Corps. Granted two months' leave of absence. **Morris**, Samuel J., Captain, Medical Corps. Granted two months' sick leave of absence. **Persons**, Elbert E., Major, Medical Corps. Relieved from his present duties and will report to the president of the Army War College, Washington, D. C., for duty. **Priest**, Howard, First Lieutenant, Medical Reserve Corps. Relieved from treatment at the Letterman General Hospital, Presidio of San Francisco, Cal., and will proceed to Fort George Wright, Wash., for duty. **Raymond**, H. I., Lieutenant Colonel, Medical Corps. Reported from leave and assigned to temporary duty at Headquarters, War Department, San Francisco, Cal., pending sailing of transport to Honolulu, H. T. **Richards**, Robert L., Captain, Medical Corps. Resignation accepted by the President. **Schreiner**, E. R., Major, Medical Corps. Granted thirty days' leave of absence. **Williams**, A. W., Captain, Medical Corps. Reports on thirty days' leave of absence from Washington, D. C.

Births, Marriages, and Deaths.

Married.

Bay—Saulsbury.—In Govans, Md., on Tuesday, September 17th, Dr. James Hugh Bay, of Havre de Grace, and Miss Mary B. Saulsbury. **Houston—Davenport.**—In North East, Pa., on Saturday, September 14th, Dr. Mark C. Houston, of Urbana, Ohio, and Miss Vera E. Davenport. **Loomis—Stowell.**—In Rockford, Ill., on Sunday, September 1st, Dr. Ralph H. Loomis, of Sidney, N. Y., and Miss Fanny T. Stowell. **Stone—Feltz.**—In Nashville, Tenn., on Saturday, September 21st, Dr. Marvin Price Stone, of Dallas, Texas, and Miss Natalie Feltz. **Yourtree—Hightman.**—In Burkittsville, Md., on Wednesday, September 25th, Dr. George Wilmer Yourtree and Miss Laura E. Hightman.

Died.

Arthur.—In Middlesboro, Ky., on Thursday, September 19th, Dr. Macaulay Arthur, aged sixty years. **Davis.**—In Jamestown, N. Y., on Wednesday, September 18th, Dr. Herbert W. Davis, aged fifty years. **Gillson.**—In Paterson, N. J., on Sunday, September 15th, Dr. Michael W. Gillson, aged fifty-six years. **Gleim.**—In Lansdowne, Pa., on Saturday, September 21st, Dr. George Gleim, aged sixty-nine years. **Leonard.**—In Worcester, Mass., on Thursday, September 26th, Dr. Henry L. Leonard, aged fifty-nine years. **Mitchell.**—In Jackson, Miss., on Monday, September 16th, Dr. Thomas J. Mitchell, aged eighty-two years. **Place.**—In Binghamton, N. Y., on Saturday, September 14th, Dr. John F. Place, aged sixty-one years. **Riddell.**—In Canisteo, N. Y., on Tuesday, September 17th, Dr. Le Roy Riddell, aged seventy-nine years. **Roscoe.**—In Pittsburgh, Pa., on Sunday, September 22d, Dr. Harry Allison Roscoe, aged thirty-three years. **Silvernail.**—In Binghamton, N. Y., on Saturday, September 21st, Dr. Lewis C. Silvernail, aged seventy-three years. **Street.**—In Moose Jaw, Canada, on Wednesday, September 18th, Dr. Daniel B. Street, of Washington, D. C., aged seventy years. **Williams.**—In Boston, Mass., on Thursday, September 26th, Dr. Leonard W. Williams. **Wood.**—In Worcester, Mass., on Thursday, September 26th, Dr. Albert Wood, aged seventy-nine years.

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NEW YORK, OCTOBER 12, 1912.

WHOLE No. 1767.

Original Communications.

BLONDS AND BRUNETTES IN THE TROPICS.

By CHARLES E. WOODRUFF,
San Francisco,

Lieutenant Colonel, Medical Corps, United States Army; Sanitary Inspector, Western Division.

It was not the intention to make any remarks upon the blonds and brunettes article by the president of the United States Army Board for the Study of Tropical Diseases as They Exist in the Philippine Islands (*Philippine Journal of Science*, December, 1911), written in criticism of the book *The Effects of Tropical Light on White Men*, but the editorial references to the matter in several medical journals now necessitate a review of the "evidence," by which it was concluded that while strong light kills every other living thing, it is not injurious to man, and that blonds who get the most of it in the tropics are as well off as the brunettes. The subject is of vital importance to the civil profession in every part of the United States where the light in summer is greater than in the climates which evolved us, and has, here and there, already killed off the blondest. If the article is accepted as correct it will be followed by much avoidable destruction of health and life, among civilians as well as soldiers, both at home and abroad. It has already stirred up considerable controversy, although it confirms the theory as to the value of pigment.

In the first place the statement that the article was a comparative study of blonds and brunettes is not correct. An examination of some of them showed light types among the brunettes and dark among blonds, and "mixed" types in each. That the main use of skin pigmentation is to exclude light is now so abundantly proved and generally accepted as to need no further comment, but it is to be noted here that the degree of opacity needed for perfect adjustment to the climate of the Philippines is dark brown. Consequently the minor differences between ordinary blonds and ordinary brunettes from darker climates are so slight, compared to the difference of both from the dark brown Malay, that they both react to the climate about equally. To show the effect of the light we must compare the marked blonds with the marked brunettes, and there are very few of either in the army which is largely composed of medium types, such as found in southern England, between white skinned, yellow haired Baltic men and the olive skinned, black haired Medi-

terranean. Some well pigmented men have light eyes and hair, and many a dark haired specimen has a skin so white as to class him with the blonds. The statement that "a man with dark blue eyes, light brown hair, and a fair skin would fall in the blond class" is not correct, as most of these men are well pigmented. In one group of 1,286 soldiers, in 1902, the inexact physical descriptions, then the only available data, showed 18.7 per cent. "brunettes" and 27 per cent. "blonds," but from later investigations there is no doubt that if they could have been seen, the proportions of blonds and brunettes would have been greatly reduced and the differences in health in favor of the brunettes would have been far more marked. The two classes were made as large as possible to avoid the deception of small numbers, or a charge of cooking the statistics. In 1910 the records of 322 soldiers showed that less than five per cent. were real brunettes and less than five per cent. real blonds.

For several years investigations of the few yellow haired soldiers in the army showed that without a single exception their families had arrived in America from northwestern Europe since 1848, or, if of colonial stock, had survived because they were in a dark environment, like the home land, such as the cloudy mountains of Tennessee, where they may survive as long as in Switzerland. The healthy, marked blonds of colonial stock from the hot southern lowlands are too few to bother about. Many have survived in Canada, but none in Louisiana, and but few in New England. The Confederate army was brunette to a much greater degree than the Federal. There was a great racial element in our civil war, though it was basically economic. The flora and fauna north and south of Mason's and Dixon's line are so different as to constitute two biological worlds, and the same rule applies to man in the long run. The blond types, such as the southern mountaineers, had northern sympathies, but the brunette types fought for liberty to enslave others—though there were numerous exceptions on both sides.

The board states that it had no exact statistics as to complexions in our cities, yet says "it is doubtful if the figures for complexion types in the cities differ much from those found in the military service." On the other hand, the army, though marked blonds are rare, is decidedly less brunette than our cities, and the reason is that certain numerous brunette elements of our population cannot enlist for physical reasons, even if they desired. Our defenses are practically in the hands of "northmen," both in the army and navy. Even by stretching the

class of brunettes to include men with dark brown hair, it constitutes but one quarter of the force. By including the light brown haired with the blonds, that class is over a third, and the mixed types, such as are common in England and New England, are over two fifths. For very evident reasons, the commissioned force is far more blond than the enlisted. The same phenomenon is seen in every land to which the Baltic type has migrated and survived; northern Italy, where the Lombards still flourish at 45° north; Spain, where the Goths are still in the northern mountains; France, whose northern third is more Teutonic than the southern third of Germany; in each of these places the blue eyed are doing far more than their share of national guidance and defense. In New York city the proportion of blue eyed in the schools increases from the first grade to the university, and the better the neighborhood, the more the blonds.

In the ten years ending 1910, New York city alone increased her foreign born population from the northwestern corner of Europe as follows:

Danes	2,385
English	9,398
Scotch	4,271
Dutch	1,473
Norwegians	10,864
Swedes	6,632
Swiss	2,046
Finn	3,667

There were 22,500 fewer Irish and 45,000 fewer Germans on account of the removal of the causes which formerly drove those people here, but the flow will begin again and keep up forever to replace those killed by the climate. So there is no ground for the fear that the blue eyed controlling element will disappear. The influx in the last decade to New York city alone is greater than that which peopled all New England prior to the Revolution, and we may confidently predict a greater influx to support a civilization which is basically Teutonic. German names are becoming exceedingly numerous among our great workers, as the immigrants since 1848 are now on top. Few people see the significance of the fact that while our Revolutionary leaders have no prominent descendants, the leading candidate for President a few years ago was the son of a Scandinavian peasant, and the present Democratic leader is of the second generation from England.

The poor classification is shown by the statement that the brunette class shows a slight advantage in physical development. There is a wealth of evidence that blonds as a class always have the advantage, and a great one in large groups, for they take most of the Olympic prizes, and the brown eyed take very few (*Medical Record*, April 27, 1912). The history of the United States shows that as a result of climatic stimulation, the first, second, and third generations of native born accomplish wonders, physically and mentally, from Alexander Hamilton to John L. Sullivan; but later generations are so overstimulated as to sink into mediocrity or degeneration, and the numerous exceptions do not bear too close analysis. Our great fortunes were collected by foreigners, like the first Astor and Carnegie, or the early generations of native born, like Drexel, Vanderbilt, Harriman, and New York-

ers too numerous to mention. There is a rumor that George Washington was born in England and that the record has been found. Our leading surgeons, the Mayo brothers, are of the first generation native born. The early generations accomplished wonders in South America, but very little now, though it is possible to survive a long time in the equatorial Andes, where the coolness and cloudiness resemble those of northern Europe.

The board excluded from observation any soldier "who showed evidence of disease," and yet these show the greatest effect of the climate and need the most study. Men of as little as two months of tropical residence were included with those who by reason of extra resistance had been there thirteen years.

"In both groups (of civilians) it will be seen that the average period of tropical service prior to the commencement of the observations was sufficient for the preliminary stimulating effect of the tropics to have passed away." One of the best attested facts in tropical climatology is the stimulation of the light—a phenomenon never noticed where heat is the sole factor. This stimulation causes a great feeling of well being, and all functions are better than normal. The condition generally lasts from six months to a year, sometimes, but rarely, over two years. Moreover, the blonds receive more of it than brunettes, so that it is possible to get a group of blonds who would be apparently far better off in a year or two than a group of brunettes. Averages are worthless in such a case.

When the arteries harden, the stimulation of sunny places is a very serious matter, as the recent death of the king of Denmark shows. The profession must stop the habit of sending such patients to sunny climates, for even if the blood pressure is not increased, the feeling of well being causes undue exertion and the heart is overwhelmed, or the arteries break.

It is stated that it is difficult to compare the relative ability of blonds and brunettes to stand the tropics twenty or thirty years, but their relative resistance in two years is a task beset with fewer difficulties. The fact is the exact opposite, as shown later. "Woodruff . . . maintains that . . . the ill effects observed among white men dwelling in the Torrid Zone are due mainly to the large proportion of chemical or ultraviolet rays contained in the tropical sunlight." Such an idea was never maintained or expressed. On the contrary, the vital necessity of pigment in heat regulation was emphasized years ago. A study of light cannot be taken as a denial that heat has effects, too. No comparison of the damage done by light and heat has ever been made; indeed, the slow and rapid waves produce chemical results of an entirely different order, as we see in the extreme cases of death by burning at the stake and that in the electric chair.

"The quantity of watery vapor in the atmosphere has a direct influence on the climate, because it checks to some extent the radiation of heat." This is not germane to the subject, but it is the opposite of the facts. Radiation is a matter of the difference of temperature between two bodies, their color, and their distance apart. When moisture is in cool air it brings a body of water nearer to the skin, and

radiation is increased, as every one knows, on a cold, wet day when there is little loss by evaporation. In warm, moist air there is also increased radiation, but the inability to lose by perspiration quickly throws up the body temperature, as proved in the famous cotton shed investigation (*Journal of Tropical Medicine*, 14, p. 231, 1911). If the moist air temperature is over 98.6° F., the radiation is in the opposite direction—to our bodies—and if the air is saturated and prevents all loss by evaporation, we die very quickly of thermic fever, but survive in drier air. The board has been deceived by the increase of radiation from the earth to cold outer space on clear nights when warm clouds no longer intercept the rays. More heat goes to outer space whose temperature is very low than will go to the clouds, or to a tree, for instance, under which no dew is deposited. Fruit growers know this. The phenomena in air above or below blood heat are opposites.

Blackness increases both radiation to cooler bodies and absorption from hotter, so that the black negro cannot stand either extreme of heat or cold, and is not found in the hottest or coldest parts of the earth; but he is perfectly adjusted to his natural environment below 98.6° F., and is found in a very limited area. The negroes elsewhere in Africa are lighter in proportion to their distance from this place, as shown by Dr. G. A. Turner, of Johannesburg, South Africa, in his extensive studies. The statement that "this advantage of pigmentation is least manifest when most needed, namely, in direct sunlight," is not correct, as the black negroes in nature do not expose themselves, but hide like elephants and carabao. When they migrate to very hot places they die out very soon, or protect themselves with white clothes to prevent heat absorption, and a working carabao dies unless cooled off every hour or two.

"The recent work by Aron seems to indicate that the deleterious influence of the tropical sunlight on men and animals is due to the long heat rays rather than to the short length ultraviolet waves." Through ignoring the laws of radiation, Aron has misinterpreted his data, and really proved the need of pigment to protect from light, as well as its use in radiation. Interchange of heat by radiation or convection is of minor importance, except in extremes. Evaporation is the main reliance in disposing of our surplus, and a half century ago the standard treatment of all fevers was to "sweat them." After a few decades of interruption by Brand's theory that heat is extracted better by conduction into cold water, the profession shows a tendency to return to the old way of favoring loss by evaporation of perspiration. It is found in typhoid that, through nervous reflexes, the cold bath closes the superficial arterioles, reduces perspiration, and thus causes retention of heat which would otherwise be lost, but after a hot bath the skin circulation is increased, and the evaporation of this perspiration reduces the fever further and keeps it down longer. Chastang, of Paris (*Caducée*), now finds the same phenomenon in the treatment of "thermic fever." Hot baths start the perspiration whose evaporation is increased by placing the patient in a gentle draught of air. He finds that the temperature goes down sooner, consciousness returns sooner, and

there are more cures than by the cold bath. This treatment would be dangerous where the air is over 98.6° F. and saturated, for then the perspiration could not evaporate, and it would be particularly dangerous to negroes in such circumstances, as their black skins would absorb more heat from the air.

"Steinmetz (*Collected Papers of American Science*, ciii, p. 391, 1910) considers ultraviolet radiations of moderate intensity, such as occur in sunlight, to be harmless to the eyes." There is no such reference, but it probably refers to a lecture by Dr. C. P. Steinmetz, the great engineer of the General Electric Company, of Schenectady, N. Y., and published in *Scientific American Supplement*, lxx, 390, December 17, 1910. The lecture was designed to call attention to the blindness and other eye injuries due to ultraviolet rays of moderate intensity in some kinds of artificial light. The harm increases with the frequency, from the harmless slow ones just beyond the violet, to the high frequency ones two octaves higher, which "are destructive to the eyesight," even after "short exposure" to those of "moderate intensity." Steinmetz also shows that the harm done by ordinary artificial light is from eye strain of too long application, or defect or excess of illumination, wrong wave length, and too much infrared rays, there being no ultraviolet rays in most of our house lights. As to the body as a whole, Steinmetz said "light has a decided stimulating effect on man when of moderate intensity, while excessive intensity causes harm." As to the eye, he says: "Daylight is harmless because we have tried it for untold ages during the development of the human race," but "those races which have been developed in tropical climates have acquired . . . a protection . . . by pigmentation." He might have added that beside pigmentation there are about fifteen other mechanisms whereby the intensity of light entering the eye is reduced to safe limits.

Now comes Pernet (*British Medical Journal*, July 6, 1912) with a suggestion that freckling on the skin which is covered by clothing may be a reflex from ultraviolet rays acting on the retina, as this phenomenon does not appear in fishes which are blinded. He even thinks that perhaps spectacles to exclude these rays may lessen the freckling on the exposed skin, where we know it is a direct effect of the rays.

It is not true that "when acting on the skin, ultraviolet rays have little power of penetration," as very numerous experiments in Paris, in London by Sambon, and in the Finsen Institute in Copenhagen all show that ultraviolet rays are the sole cause of sunburn, and that they penetrate in proportion to their intensity, wave frequency, and the blondness of the skin. Doctor Kime "demonstrated the great depths to which the chemical rays of light could be made to penetrate" (*Journal of the American Medical Association*, March 30, 1912). The literature is full of references to such experiments, as well as proofs that x rays of similar frequency are stopped by the skin in proportion to its pigmentation and their own wave length.

The denial that tanning is a protection from light does not take account of hundreds of experiments showing the opposite, nor does it consider the naive reports from sun treatment of tuberculous children

in the Alps, that the blonds who do not tan well to keep out the light, do not receive the benefit of the outdoor life in cold air. Instead of having little penetration, they have so much that it has been proved by the late Doctor Hyde, of Chicago, and Dr. Watkins-Pitchford, the Government pathologist in South Africa, that like x rays, they are factors in causing cancer, only in lesser degree. From 1907 to 1910 only one negro soldier had malignant disease in our army.

Including conditions having only remote relation to complexion or none at all—accidents, venereal disease, surgical cases, miscellaneous diseases, malaria, constipation, etc.—and bad as the classification is, the “blonds” in these soldiers, after a year, have ten per cent. more cases of illness and days lost than the brunettes. Though they are very few, it is significant that heat exhaustion, neurasthenia, pemphigus, eczema, dermatitis, and ulcers were twice as frequent in blonds, tuberculosis almost twice, and alcoholism three times, and the blonds had more diseases of the eye and ear, lymphadenitis, ringworm, and diseases of the digestive tract. In studying 568 civilians who had been in the tropics from two to thirteen years, there is no distinction between the new arrivals whose weaklings had not yet been eliminated, and the older class from whom the climate had eliminated them. As 11.1 per cent. of these “brunettes” had been attacked by sickness to 90.2 per cent. of the “blonds,” it may mean that among the older class the blondest had dropped out, but among the newer arrivals were still vigorous, as elsewhere explained. In fact the “blonds” did have less service. The better physique and endurance of the Baltic type often makes some of these men able to endure the strains remarkably well a few years, but they pay the penalty in time. Only one of the twenty-one medical officers on this work could see any difference at all in one year in their alleged classes, and there probably was none. On the other hand, brunette Spanish war veterans are now flocking to the soldiers' homes with tuberculosis after resisting the tropical damage for a decade.

With regard to the feelings of well being and enjoyment of the tropics, many of the soldiers considered it a joke, and though the general trend of remarks is significant of light damage, the replies cannot be given scientific weight. In addition, under the stimulation, blonds are sometimes so mentally exalted as to enjoy the service more than a year.

In considering average weight of such groups, the few who gained or lost make practically no difference, and counterbalance so that the average loss or gain of one tenth of a pound is explained. On the other hand, the fluctuations in the averages of such a vital matter as temperature, 98.6° to 99.1° F., show that very sick men were overlooked, perhaps the tuberculous. Men with an average temperature over 99° F. year after year are in dreadful danger. In the tiny differences in pulse rates and muscular strength the board makes the typically prejudged remark: “Brunettes show no advantage.” A comparison of dynamometer tests of two groups where no selection has been made as to musculature cannot be taken seriously.

The board made examinations of the stools of

308 blonds and 293 brunettes, to see which class had swallowed intestinal parasites the more frequently, but the relation to complexion is not evident. They found that after exercise all of these soldiers were lighter in weight (and probably thirstier), they were breathing faster, and the pulse rate and pressure were higher. Nothing is said as to which class had exercised the most, but somehow in one year they have come to the conclusion “that the brunettes are no better able to endure exercise in the Philippines than are their fair skinned comrades.” The brunettes are less able, as we see in the extreme cases of pygmies and gigantic Swedes, but the pygmies survive and the Swedes perish.

The “blonds” had fewer invalidated for venereal disease than “brunettes,” probably from lessened sexual desire, and this in spite of the fact that they had three times the invaliding rate for alcoholism. But three blond drunkards to one brunette in one year among 12,000 men are hardly enough to reason on, particularly as we do not know how long they had been damaged by the climate. If we are biased the opposite way we would say it indicated that blonds were injured the most by alcohol.

There is of course no climatic significance in the fact that the brunettes had more epilepsy than blonds and twice as much dementia præcox, and that five brunettes were sent home for defective mentality, but no blonds. These facts are significant of something else. The tropics make epilepsy worse, but return home reduces the nervous explosions. More brunettes were disabled by valvular disease and wounds, and these, too, are included in the figures to show blond superiority where Nature says the opposite.

The board advises the use of ultraviolet rays to kill ameba in water, but sees no danger from the same rays which enter the watery media of the eye. Hence it makes no remark as to the significant fact that of the three patients with retinitis invalidated, two were blond and one mixed type. Yet it is known some ultraviolet rays are soon stopped by water but others penetrate further than light in the ocean. Not a word is said of the significance of the fact that of the eight patients with acquired insanity, five were “blonds” and three “brunettes,” and in explaining the five “blond” neurasthenics to ten “brunette” nothing is said as to the brunette race in the army which is notoriously neurasthenic at home.

The only ones disabled by gout or rheumatism were brunettes, as though the sunshine had stimulated the chemistry of the blonds into a cure. We have long used infrared rays to do this, and also cold light and ultraviolet,—all do it. Now we learn that greater success is resulting from radium rays at the Bohemian Institute at Joachimsthal. It is suspected that all the spas of Europe, some of which have been medicinal resorts for a long time, perhaps milleniums, and whose results we have been inclined to impute to change of scene and climate or to “suggestion,” are really efficacious from the radioactivity of the waters. Since Bacon and others in Manila have shown vastly increased radioactivity of tropical air from ultraviolet light, we have a partial explanation of another mechanism by which sunlight can produce the things noted, but whose significance was not recognized. This in-

creased radioactivity is the same as the "x ray atmosphere" which produces such appalling results. The possibility of aspermia in old residents who expose themselves to tropical light deserves investigation.

This increase of rheumatic diseases with pigmentation in migrants is also shown by the proneness of negroes to rheumatism in the United States. In the Philippines the negro rate in these affections is double that of whites, but the adjusted brown race has only four fifths that of the white. When primitive open living man took to cave life, he suffered dreadfully from rheumatic diseases caused by dampness and darkness, as his bones show, and he was Brunette.

There were three patients with disabling malaria (two "blonds" and one "Brunette"), six with pulmonary diseases except tuberculosis (two "blonds" and four "Brunettes"), and five with deafness or otitis (four "blonds" to one "Brunette"), whose significance is not apparent.

The statement that the Brunettes have more tuberculosis than blonds in seventy total cases is not correct. The fact is the reverse, as I know from reports I have received and observations I have made. The error follows from incorrect classification and inclusion of mixed types with Brunettes. The *habitus phthisicus* in ancient Greece was described by Hippocrates as follows: "The form of body peculiar to subjects of phthisical complaints was the smooth, the whitish, that resembling the lentil; the reddish, the blue eyed, the leucophlegmatic, and that with the scapulae having the appearance of wings." Hippocrates was only noticing the greater tuberculosis morbidity of the degenerating, disappearing, intruded northmen, whose origin was unknown. It is one of the ways of eliminating the unfit. The French have noted the same phenomenon in central and southern France, and it is going on in America all the time. When the negro is the intruder, as in Scandinavia, his is "the form of body peculiar to subjects of phthisical complaints," but the adjusted blue eyed and reddish are resistant. The rule is universal; other factors being equal, the tuberculosis rate among immigrants at any one place increases with their unfitness to the climate. Savage races are dreadful sufferers in contact with civilization, because the susceptible have never been weeded out. (*Journal of Tropical Medicine*, 1912.)

The fact that Brunette civilians had far less "sunstroke" (heat exhaustion?) in the tropics than the other classes is explained away as chance, yet it is said that, "the exact causation of sunstroke and heat exhaustion remains in doubt." It was settled long ago. True sunstroke is due to infrared rays exclusively, and its rate curve in the Indian army is parallel to the air temperature curve. It is uncommon in the Philippines or any other place where the air temperature is rarely above blood heat, but in the hot parts of the world it prevails in a mixed population in proportion to the pigment. Negroes die in an external heat that the white skin reflects, as in fire rooms of ships. Civil physicians in the United States, where the air temperature rises much higher than in the Islands, report that in 146 cases of sunstroke only thirteen victims are blonds, twenty

mixed types, and 113 Brunettes, and as we now guard soldiers from heat, no negro was sunstruck in the four years 1907-1910, though formerly they were oftener than whites. It is evident why a southern Italian, properly pigmented for his light and never exposed to extreme moist heat at home, can suffer from sunstroke in the sweltering heat of New York city. City dwellers are Brunette the world over, for the same reason that negroes are still more Brunette—to exclude light—but it makes them unfit to stand great heat. The same laws apply to horses, for Professor Robbins, of the Chicago Veterinary College, tells me that, in hot weather, white horses, which reflect heat, rarely get thermic fever, the deaths being among the animals of the dark colors which absorb heat.

An investigation by Leifmann and Lurdemann (*Deutsche Vierteljahresschrift für öffentliche Gesundheitspflege*, 43, 2 and 3) has shown that the summer infant mortality curve in Berlin and some other cities is parallel to the maximum daily temperature curve taken at 2 p. m., and that it has no relation to infected foods, as children in cool, dark, underground rooms do not have any increase of mortality in the hot season in spite of bad food and "lack of sunshine." Only temperatures over 23° C. (73.4° F.) are connected with a distinct increase of deaths. In the Philippines I found this critical temperature to be about 80° or 82° F. for adult invalids, but now we must recognize danger between 73° and 80° F. In other words, hospital wards must be maintained below 73° or 70° F. by artificial cooling and kept well shaded, for the promptest response to rise of temperature is in the lightest part of the summer, around June 22d.

True "heat exhaustion," on the other hand, which is the disease in the Philippines, is very largely if not entirely a matter of paresis from light, and should be more common in blonds. It never appears except when there has been exposure to intense light, as in the famous parade in Philadelphia, in 1907. Its symptoms and pathology have nothing in common with thermic fever. Since we rarely have much light unaccompanied by heat, many of the cases are complicated by "thermic fever" in every degree of mixture between the two types. When the board classified the cases, it found among 229 "sunstrokes" in America, seventy-two blonds, eighty-seven mixed, and seventy Brunettes, which is proof, if any were needed, of what was said in the beginning—the classification is unscientific. Heat exhaustion is not only more common in blonds, but is prevented by shade and opaque clothes of any color. It may occur in the cold in winter.

Cold Lapland is afflicted with so much sunshine and snow glare that blonds cannot live there, but within 150 miles in a much warmer country the mountains cause so much darkness from the precipitation, mists, and clouds of the prevailing wet winds from the Atlantic, that blonds are the adjusted type. "It does seem proved that on the living subject the brown or black skin, when exposed to the sun, is always slightly cooler than the skin of a white man," is simply not a fact, but a misinterpretation of a few observations in air of medium heat. If it were true, the Laplanders would die of frozen faces

when in the sunshine, and the negroes rarely die of sunstroke. The board's own experiments showed that dark surfaces are always hotter than white when exposed to high heat. To prevent undue cooling of the eyes in the arctic by the radiation from these dark surfaces when not in the sunshine, the eyelids are heavily padded with fat and open to a mere slit—the latter also being one of the fifteen ways of excluding excessive light. Dark surfaces radiate so greatly in low temperatures that arctic animals must be white, and the coolness of black in all temperatures below 98° F. is well known. It is therefore amazing that no experiments were made to prove that black clothes are cooler than white of equal texture indoors and at night in temperatures between 70° and 98° F.; but light colors coolest above and below that range, as in the case of white horses in Arabia and Mongolia.

If a "light bath" is too severe or prolonged, it produces the symptoms of "heat exhaustion" in the absence of heat, but as the room is frequently too hot, the effects of heat are occasionally present also. Heat exhaustion is rarely fatal in big animals, but quickly so in insects exposed to cold lights strong in ultraviolet.

The bibliography mentions an editorial article in the *Lancet*, clxxxi, p. 166, 1911, but I cannot find it mentioned in the text. In this editorial article (p. 167, not 166) the *Lancet* takes a strong but erroneous position that all sunstrokes are due to actinism.

The existence of tropical neurasthenia is denied by the board, but it is evident to nearly every one else who looks for it. It has been found so prevalent in the United States from our summer tropical climate that Dr. J. Madison Taylor, of Philadelphia, has made it the subject of a special article (*NEW YORK MEDICAL JOURNAL*, July 6, 1912) and avers that it is due to excessive light for which most of us are not adjusted. What relation, if any, the increase of neurasthenia bears to the alarming increase of suicides in the United States, most of which occur in the lighter months, and on brighter days, remains for further investigation. The ethnic types of our suicides should be studied.

Nothing is said as to the recent reports of the deplorable nervous condition of European children raised in the tropics—and the blonder they are the worse they are. The late Professor Grawitz, of Berlin, found the same conditions, even in that northern climate, to result from the sun baths given by a certain class of ethical quacks (*Deutsche medizinische Wochenschrift*, August 18, 1909). Svante Arrhenius has now proved the matter experimentally in Sweden (*Cosmos*, October 14, 1911). He wired one school room like a huge solenoid, so that the children were stimulated by waves from the high frequency currents. In six months they showed more growth and quicker mental and nervous operations than the controls. It was a dreadful experiment, as the after effects of similar sun stimulation of Swedish children in America are known to be serious. There is now a movement among architects to lessen the glare of schoolrooms, where similar nervous states are caused by light. The quickness and brightness of American school children so greatly admired by visiting European educators, is now known to be pathological, not

racial. Embryonic or multiplying cells are known to be more affected by all short rays, so that adults may not be much hurt by what kills their children. It is amazing that "tropical neurasthenia" should be denied when it is known to be caused not only from the heat and light, but also from cold light from certain forms of electric light. Electricians and x ray operators are notorious sufferers unless they protect themselves. There is evidence of it in wireless operators and we are hearing of similar affections in those who work with radium of great strength.

In another article published in *The Military Surgeon* (August, 1910), the board says that of 313 soldiers invalided from the Philippines (July, 1910, to December, 1911), in ninety-one the cause was a mental or nervous disease! Of the 119 deaths between January, 1910, and October 31, 1911, twelve, or ten per cent., were suicides! If ten per cent. of New York city's deaths among young men were suicides, there would be consternation and a search for causes, and yet no climatic significance is recognized in those in the tropics and the cause is denied. Nevertheless we know that the suicides in New York city are unduly numerous in the light months and on light days, and the flow of insane home from the tropics is proportionately greater than a few years ago, because we are preventing infections, but are unable to avoid the climate.

While on the subject of the nervous effects of the tropics, attention must be called to the curious delusions it causes. Many observers have told me that these abnormalities are more marked in blonds of long residence. The preliminary mental exaltation has been responsible for a flood of hysterical praises of the climate and is probably the cause of the notorious statement of Doctor Washburn, of the Civil Service Commission, that the climate was not harmful if one was sober and moral. He broke down himself and had to leave for many months to get well.

Arctic irritability is the same condition. Dr. H. G. Blessing, who accompanied the *Fram*, in 1893, has published parts of his journal in which he describes it. He blames the darkness to a great extent, but the Norwegians have almost as little winter light in their fiords, and the cold does not have the same effect elsewhere. The intense light of the summer snow glare is the only causative factor in common with tropic neurasthenia, and it takes only three arctic summer seasons to produce serious results. The same thing is seen in the light glare of interior Alaska but not on the cloudy coast.

The late mental effects are all in the class of exhaustions and so well marked are the irritable states, that constabulary officials can tell from the character of reports an officer makes, that he is neurasthenic. It is so well understood that the commissioner told me personally that he would not allow anyone to stay there more than three years without a vacation in a northern climate. In the last stages there is an actual delusion that the climate is all right, and it is seen in its worst form in "squaw men" married to full blood Malays, for they are almost universally neurasthenic and mentally abnormal. This delusion as to the climate is the basis of many requests for soldiers to stay long periods,

but many officers force them to go home to save their lives—and the board says nothing about it.

There was a fashionable fad in Manila to deny that the climate was harmful. One person who was always harping on this tune was known to be insane, but the delusion has another basis, which I have found many times. Those who elect to stay in the climate, resent the imputation that they are stupid to kill themselves this way. Being on the defensive, they minimize the danger until they come to deny it. One prominent blond used his own case to prove that the law of adaptation to environment is not universal. It was this curious mental atmosphere which was largely to blame for the article on blonds, for I have been repeatedly informed that the board, long before any results were reported, had created the impression in Manila that they intended to disprove von Schmaedel's theory as to the use of skin pigmentation. This fully accounts for their failure to consult the only man in the world who had specialized on the subject, and the haste with which the matter was given publicity before they could check up its errors of fact, inference, and conclusion.

Dexter, and dozens of others, have conclusively shown by innumerable cases that abnormal conduct increases with excessive light, but the board thrusts all this aside by a few observations on alleged "blonds" and "brunettes," saying that in one year "it is conceivable that misdemeanors would be more frequent among blonds . . ."! It is inconceivable among those classes. There is a far deeper significance in the relation of complexion to conduct and ability than can be brought out in a year's work in the tropics. Why is it that no brown eyed man has ever been President of the United States? I have been informed by Dr. J. C. Ballard, M. R. C., United States Army, who has investigated it, that only one had dark eyes—Franklin Pierce—and his were gray. Most all were light blue and the rest light gray. He also says that every bishop of the Southern Methodist Church, in a very brunette population, by the way, has had blue or gray eyes except one, and this one, with brown eyes, while the salt of the earth personally, had the least force of all. And there is deep significance on the other side as to the undue proportion of blonds in the jails, asylums, and poorhouses in the northeastern corner of the United States, in spite of the fact that the blue eyed are in the lead in the Protestant Church, school, business, and defense. Significant, too, perhaps is the fact that most idiots are blond but that may be due to arrest of development.

Probably the worst defect was the failure to investigate the complexions of civilians who died, or went home collapsed, after long residence in the tropics, and to take into account the amount of their exposure. The cause of death, in or out of the tropics, is almost always a poison. Heat and cold kill very few people, and it is doubtful if there is any evidence that light or darkness ever killed a man. It used to be said that influenza, while never killing any one, was responsible for more deaths than any other disease, particularly of the aged; yet no one thinks of denying its dangers.

I cannot find any statement as to how many of the soldiers studied were invalidated, nor one word

as to any deaths among them, though I personally informed the president of the board of the death of one of his blonds at Iloilo about four or five weeks after the investigation ended. At least I was informed that this man was on the list,—if he wasn't he should have been, as he was one of the blondest men in the garrison, and had been in the Philippines some years—the old story. Dozens of observers have shown that prognosis is now so exact that we can tell fairly well the patients who cannot get well in the tropics and we ship them home. The deaths swell the home statistics, and the rates in the tropics are diminished. This has been interpreted to mean that Panama is a health resort, though the exodus of breakdowns is never mentioned—nor the toll of tuberculosis. One year cannot show much when the worst effects of the tropics may be delayed until years after return north. This is not only seen in the cases of nephritis arising there and fatal some time later, but now we find tuberculosis looming up as an after effect. Within a few years after the close of the Spanish War its veterans began coming to the soldiers' homes with consumption, and their numbers steadily increased until last year, when over seven hundred new patients were admitted, not counting repeaters who go from one home to another. The assistant inspector general tells me that they mostly served in the Philippines. The brunettes seem to have resisted the longest, but all these late cases seem to be remarkably rapid in course and quickly fatal. These men looked well when they were mustered out.

The failure to note any actinic effect on the skin is remarkable in view of the fact that this irritation was the primary cause of the death above mentioned. The lowered "vitality" of his skin was precisely the same as that found after x ray or radium "burns." It had no resistance to a tiny skin infection which is usually trivial, but which spread over the whole head, face, and neck in one vast suppuration, in a skin which could not tan after some years of an exposure which almost blackens others. A secondary double pneumonia carried him off, and though alcohol could be blamed for much of his plight, there was no doubt that his nervous state was the cause of his habits. Yet we must label this case pneumonia, not actinism.

There was plenty of material for determining remote causes of death, for at the time this investigation was going on, almost every week there was the sudden death or suicide of one or more men of long residence. A few blond officials have long been ignoring these deaths, and yet every little while one of them suddenly disappears. The "boosters" and the press rarely refer to them. One week after the preceding sentence was written the news arrived of the death by nephritis, in the islands, of Dr. Paul G. Freer, the chemist, who, there is reason to believe, was largely responsible for the board's work. Doctor Freer was nearly the blond type, as he had very light eyes and white skin. "Freer and others have been engaged in the investigation of the chemical side of the problem without producing any results which would show that the actinic rays of the spectrum were distinctly detrimental to man." "The researches of Freer . . . render it very doubtful

in our minds whether chemical rays of the sunlight and complexion types of Caucasians are factors of any importance in tropical pathology." I have very carefully read over Freer's work and can find nothing to substantiate these remarks, so I presume Freer made such statements verbally. He did show what has been known some centuries—perhaps even by the Chaldeans—that the light on June 22d at a place 47° north is the same as at the equator on that day for equal cloudiness, but what is not mentioned is the fact that in the northern place there is less light the other 364 days, but on the equator there is more. People from the tropics have been seriously injured by the light while visiting southern Scotland in summer. Southerners were sun-struck at Stockholm in the Olympic contests. Scores of x ray operators have died from believing in the harmlessness of x rays, and Freer joins these martyrs to error.

The board goes to the extreme of mentioning one man who "was a most conspicuous blond and had been twelve years continuously in the Philippines, remaining in perfect health." Was it Doctor Freer? It ignores others who died while trying to stick it out for five years, and ignores the blond of long residence who was dead at Iloilo when the foregoing sentence was written.

"It appears that the men who spend much time actively engaged out of doors in the Philippines are the ones who remain in the best health." And yet it is elsewhere intimated that the "direful" results in the early war days were due to the fact that the soldiers were compelled to exercise actively out of doors. If this new advice is acted on, it will cause more cases like that of a noted athlete who, in December, 1909, suddenly found he had tuberculosis from exhausting himself out of doors. I am informed that in Arizona even the ants won't work out of doors between 10 a. m. and 4 p. m. on very light days.

The error as to the need of much outdoor exercise in the tropics is due to the fact that as a rule only strong athletes indulge. They continue the games which are harmless or beneficial at home, and as they resist the harm awhile, it is assumed that the exercise is the cause of their good condition, whereas they may be actually killing themselves. Polo is particularly dangerous because it cannot be played in the shade, like tennis, nor near sundown, as the light is too poor to see the ball. Baseball is less harmful, as there is the protection of opaque clothes and caps with visors, and the sun exposure is short and intermittent with rests in the shade. Too much exercise is one of the reasons why so many people are "all in" after two or three years and why the tour of duty must be kept short.

In the middle of August, 1912, there arrived in the United States from the Philippine Islands one of the very blonds used by the board to prove that no damage was done to that type. He had a very white skin and red hair and had been very active outdoors for twelve years with apparent benefit, but he is now a nervous invalid with tuberculosis. His well pigmented eyes had protected him from glare, so he did not feel the discomfort like a blue eyed blond, and his long resistance had given the impression that pigment elsewhere was not needed.

It generally takes twenty years to establish a new way of thinking of things. It is now eighteen years since von Schmaedel published his epoch making paper, and attacks on it should be expected for some time, but they will be lessened by this increased mortality of those who deny and defy the danger. "It is by no means proved that pigmentation *per se* is beneficial in the tropics," but the insufficiently pigmented keep on dying in spite of such denials of what others consider proved. To the scientist this denial of the law of adaptation through survival of the fittest, is sheer nonsense, but to the clergy it must be shocking to be told that God was foolish in creating pigmented types in light places. Science has never yet detected God making a blunder, and any theory which accuses Him of it, is outside the pale of science. The habit of denying the usefulness of what we do not understand was given up by scientists long ago. They now accept the use and try to find it out. Stature and bulk are greatest in the tropics, and yet in all species spread over long distances in latitude, the stature and bulk are smallest in the tropics and increase to the north, probably from greater ease of retaining heat. Hence our overweights, as shown by Symonds, do not live as long as underweights (*Medical Record*, September 5, 1908). Likewise, size of nose and size of lung increase toward the north, but the nostril decreases. Every other racial character, such as hairiness or lack of hair, has a use, and may become detrimental if we migrate. Pigmentation is only one of thousands of things which prevent or secure survival of migrants.

There were two exceedingly valuable determinations, red blood cells and hemoglobin, but the board failed to realize the significance of what it found. Light complexioned men from cold places, blond or brunette, have high blood counts in hot climates as a rule. This is due primarily to the difficulty with which a white surface can radiate heat, so that perspiration floods out in a room temperature of 80° to 98.6° F., where the tropical native has a dry skin. Unless the migrant drinks water every hour or two, the specific gravity of the blood is intermittently too high for the kidneys to eliminate nitrogen wastes. After perspiring all night in sleep there may be almost suppression, not to mention the irritation produced. This is why a nephritis is so apt to progress with fatal rapidity, and the professional ignorance of this fact has caused more than one notable death of both physician and layman, because they did not depart soon enough to a place where it was not necessary to perspire and the blood specific gravity could stay low all night.

The board made one single urine examination at the beginning of the year and one at the end without determining whether the men had just imbibed large quantities of fluid to restore the night losses. On the strength of those two observations the conclusion was reached that the average urine is about the same as in colder climates. No attempt was made to examine the urine which trickles into the bladder after free perspiration all night in sleep. Even if the average were not changed, such intermittent concentration causes dreadful results. In eight of these 603 perfectly healthy, vigorous, young men, albumin developed or casts, in twelve months;

although they had not a sign of disease before. It is perfectly clear now why so many army officers of middle age are contracting nephritis. It has long been known that the concentrated urine of those who cannot drink enough, as on hot marches, does not stop its injury at the kidneys, but will light up old inflammations along the whole tract and even start new ones.

It has been seen in Arizona to result from the invisible perspiration. Hindale in his lectures at the Philadelphia Medico-Chirurgical College, in 1907, mentioned cystitis and pyelitis thus caused, and says that when the skin losses are so great that men urinate but twice a day, as often happens, there is sure to be trouble. And yet we still hear soldiers told not to drink on hot marches. No wonder they drop with uremic symptoms and sunstroke.

At this very time a major of the pay corps died of nephritis on the way home because he stayed in Manila only one month too long. If he had taken the previous transport, as his medical advisers urged, and had got into cool weather, so that the kidney irritation of concentrated urine and blood could have been stopped, there is no question whatever that he would have lived much longer. Many other patients just as bad are now living after many years, because they came home in time. I am particularly severe in condemning this ignorance, because it should have been known that the dreadfully fatal heat cramps in the fire rooms of men of war have been definitely proved to be due to the high specific gravity of the blood caused by perspiring too rapidly to restore the fluid through the stomach, and that there is much evidence that it is complicated by uremic symptoms and actual suppression. To the glory of the naval surgeons, they have learned to cure it miraculously in a few minutes by restoring the fluid in any manner—intravenously in dying patients.

(To be concluded.)

THE TREATMENT OF DIABETES.*

BY ANTHONY BASSLER, M.D.,
New York.

A Summary of Our Present Knowledge.

The treatment of cases of diabetes mellitus is practically uniform throughout all, but the individual differences are important in the way of results. I have always considered that the dietetic and hygienic treatments comprise essentially the important phases of the therapy in this disorder. Although the physician has been reaching for medical methods of treatment, and many kinds of treatment have been vaunted only to be discarded, the fact remains that the developments in the subject of practical worth have come along dietetic and hygienic rather than drug lines. Before these are taken up, however, it would be well to remember that there are families in which there is a predisposition toward diabetes, and, sometimes in the same families, toward obesity also. These individuals possess a lowered ability to utilize carbohydrates,

and thus it is well to take von Noorden's advice to restrict the carbohydrates in these families, for it is possible in that way that a number of cases of diabetes would be warded off. It may be stated as a practical fact that the more intelligent and self-controlled the patient, the better is the result of the treatment of this disease. In those past middle life in whom the condition is essentially chronic (it being well known that in the young it runs a more acute course and is usually fatal in a short time), the fact that sugar is found in the urine does not possess the degree of prognostic significance to the latter day clinicians that it did to those in the past. More than two thirds of the cases are found between the ages of fifty and sixty years in which ten to twenty years of life after the sugar has been found in the urine is very common. Further, we should not over concern ourselves or our patients that sugar is found, so long as these patients exercise a reasonable care in their diet and general mode of living. The statistics of Doctor Joslin showed that of over 350 patients treated, 180 were living, and thirty-nine (eleven per cent.) had been living over ten years, and I have a number of patients alive and well to-day after excreting sugar in their urines for years. This shows that we should never be pessimistic to the patient in the treatment of these conditions, for such a course is liable to do harm. The knowledge that one fourth of all diabetics may live ten years or more should be an incentive to optimism. I have two cases on hand, one in a woman over seventy-five years old and the other in a man over eighty years, who have had sugar in their urine for over twenty years to their knowledge, yet both are alive and comparatively well.

Important matters to be kept in mind in the care of these patients are, that syphilis, tuberculosis, and arteriosclerosis are commonly seen in them. It is well known, too, that such conditions as boils and carbuncles, spontaneous gangrene, acute pneumonia, peripheral neuritis, hemiplegia, cataract, and prevention of pregnancy are common accompaniments during the course of this disease. Diabetic coma will be dealt with later on. All of these require certain individual attentions which could not be entered into in the course of my brief remarks which I will confine more particularly to the treatment of the subject in a general way, under the following heads:

HYGIENIC.

This is very important. Daily baths assist materially in keeping the skin functions active and diminish the liability to furunculosis as well as partially alleviating the distressing pruritus pudendi. To the thin diabetic with a dry, rough skin, a lukewarm bath followed by anointing the body with oil of sweet almonds, is a good practice. The more robust can stand a cold bath. To the very obese an occasional Turkish bath and massage is helpful. Light woolen underwear should be worn. Moderate exercises in the open should be taken, for this brings more oxygen in contact with the tissues, raises the oxydase in the body, particularly in the liver wherein it has a beneficial effect upon the diminished glycogenic function. Violent exercises should always be guarded against because they

*Presentation of the subject at the People's Hospital Medical Board Meeting, June 11, 1912.

might bring on coma or apoplexy. All sources of worry and anxiety should be eliminated as much as possible, and, as I said before, an optimistic mien on the part of the physician is beneficial medicine to the patient, who should never become overanxious about his physical condition. Constipation should be carefully guarded against, because this may bring on a resorption of putrefactive toxins from the bowel, which, having a high content of ammonia, might precipitate coma. For this purpose I have found Carlsbad salts, rhubarb, and bitter cascara to be efficient. If the amount of sugar or nitrogen output is high, it is wise to put the patient to bed on a low diet for two or three weeks. In such individuals as show a loss of weight, pasty skin, and flabby tissue, the use of the tonics may be in order.

DIETETIC.

We know that the symptoms of diabetes are directly or indirectly dependent upon the hyperglycemia, the grade of which is pretty accurately indicated by the amount of glucose excreted. Up to rather recent times the treatment for diabetes was to eliminate the hyperglycemia if possible, and to do this constituents of food which are most readily converted by the digestive processes into grape sugar, namely, the carbohydrates, were severely interdicted. This rule was a standard for many years, and in the majority of patients it answered fairly well. In recent years, it became noticeable to clinicians that certain patients upon this "standard diet" failed in health, lost strength, became edematous, etc. As a consequence, certain clinicians, after experimenting with restricting the diet still more, only to have the patients become worse, adopted the opposite process of adding some carbohydrate to the diet with marked benefit to the patient. The controversy then raged among the clinicians, the elimination carbohydrate men taking the stand that carbohydrate was contraindicated. Their position being right in the main, but wrong in the entirety of the subject, they lost ground, as time went on, to the more modern view, namely, to give carbohydrates to the tolerance of the patient. Taking cases as they occur in practice, the best plan to follow is to place them upon the following diet, which represents high protein and almost no starch or sugar substance:

PROTEIN, LOW CARBOHYDRATE DIET.

Breakfast: Coffee with one and one half ounce cream.
Two eggs cooked with half ounce butter.
One ounce bacon.

Luncheon: Two eggs.
One ounce bacon.
Two ounces lamb chops (1), ham (2), beef-steak (3), chicken (4), or fish (5), broiled with half ounce butter.
Vegetables from list with half ounce butter.
Six ounces wine or one ounce whiskey.

Afternoon tea with half ounce cream.

Dinner: Any clear soup.
One quarter pound roast pork (5), beef (4), mutton (3), turkey (2), chicken (1), or lamb (1).
Vegetables from list with half ounce butter.
Salads with half ounce oil in dressing
One ounce cream cheese.
Six ounces wine or one ounce whiskey.
Demi tasse of coffee.
Each day select meats with same number.

Vegetables allowed: Asparagus. Endive.
Best greens. Lettuce.
Brussels sprouts. Mushrooms.
Cabbage. Radishes.
Cauliflower. Rhubarb.
Chicory. Salsify.
Cresses. Spinach.
Cucumbers. String beans.
Egg plant. Tomatoes.
Celery. Vegetable marrow.

After a number of days, say from ten to fourteen, the urine should be examined in twenty-four hour specimens, representing at least two separate days, and comparison should be made as to the output of sugar and nitrogen with the estimation before the establishment of the diet, while the patient was still on the general one. If the output of sugar is not diminished enough, which is represented in two per cent. or less, or twenty-seven grammes daily output or less, or four grammes of ammonia nitrogen or less, this diet will answer for a continued course. Should the patient lose weight and strength, carbohydrate should be added in a certain number of grammes each day. For this purpose it is well to use simple rolls, which weigh about thirty grammes and contain fifty per cent. starch, and therefore fifteen grammes of sugar making content, for the time being, and estimations of the urine made. This giving of rolls can serve as an index to the carbohydrate tolerance of the patient, and the urine is then examined every fourth day. The quantity of rolls is then gradually increased until the point is noted that more starch substance is being taken than the patient can utilize without sugar accumulation in the blood and being represented in the urine. The number of grammes of carbohydrate substance representing the tolerance of the patient is then noted, and a selection from the subjoined list is practical and convenient. The list contains the more common articles of food in the lines mentioned and their amounts in per cent. of finished bulk of the sugar content in each of them. You can roughly figure a 100 grammes a day in this way for example, a roll that would weigh an ounce (thirty grammes) being about fifty per cent. starch (which is the same as sugar) would represent fifteen grammes of sugar content.

STARCH VALUES OF DIFFERENT FOODS.

Breads, cakes, pies, etc.	Vegetables	
Squash pie 21.7	Cucumbers 2.5	
Tapioca pudding 30.0	Celery 3.0	
Mince pie 37.2	Spinach 3.1	
Lemon pie 37.4	Asparagus or lettuce 3.3	
Apple pie 41.7	Brussels sprouts 3.7	
Corn cake 47.3	Tomatoes 3.9	
Gluten bread 47.6	Cabbage 4.9	
Brown bread 50.7	Egg plant 5.1	
Biscuits 52.6	Pumpkins 5.2	
Doughnuts 52.6	Cauliflower 6.0	
White bread 52.8	Radishes 6.6	
Cream pie 54.0	Beets 6.7	
Rolls, milk, and water 54.0	Carrots 7.4	
Graham or rye bread 55.0	Turnips 7.7	
Buns 59.7	Rhubarb 8.7	
Wheat rolls 60.4	String beans 9.4	
Marble cake 63.0	Onions 9.9	
Ginger bread 64.7	Squash 10.4	
Fruit cake 64.7	Green corn 14.1	
Crackers, Boston	Green peas 16.1	
" cream of milk	Artichokes 16.7	
" butter	Green beans 22.0	
" graham, each 69.4	Potatoes boiled 22.3	

Sweet potatoes	27.1	Apricots	13.4
Lentils	58.6	Pears	14.2
Dried beans	59.1	Apples	16.6
Lima beans	67.0	Grapes	17.7
<i>Fruits, berries, etc., fresh</i>		Prunes	18.5
Blackberries	5.7	Fresh figs	18.8
Strawberries	6.5	Plums	20.1
Watermelon	6.5	Bananas	22.9
Muskmelon	9.3	All forms of dried and	
Oranges	9.7	canned fruits run about	
Pineapples	9.7	four times as high in sugar,	
Cranberries	10.1	bulk for bulk, as the fresh.	
Raspberries	12.0		

In the very severe cases where patients manufacture sugar from even proteins and fats, we must keep them on a protein diet and perhaps use stricter diets on certain days in the week. For this purpose, "green days" and "oatmeal days" are valuable. With the employment of these diets no other foods are allowed on such days excepting those mentioned, both of which are nourishing enough to sustain the adult individual for the time being and still serve to eliminate the sugar. Alternation can be made with protein, green, and oatmeal day diets to keep the patients as well as it is possible for diets to do. The following are practical for the purpose. In the imminence of coma, green and oatmeal day diets are the safest.

OATMEAL AND GREEN DAY DIETS.

- Green days: Three eggs.
Coffee, black.
Bacon, one ounce.
Any green vegetables.
Any broth or clear soup.
Whiskey, three ounces, or Burgundy or Rhine wine, ten ounces.
- Oatmeal days: Oatmeal, eight and one half ounces, or 250 grammes.
Butter, eight and one half ounces.
Eggs, seven ounces.

The oatmeal is cooked thoroughly with water for two hours and the butter and eggs are stirred in when the oatmeal is nearly done, salt being used as desired. This consists of the food taken on the oatmeal day, and it may be served as thin gruel, mush, or fried mush. Black coffee, some of the sour wines, Burgundy, or the whiskey may also be taken in moderate amounts as above specified. If the oatmeal is ground very fine in a coffee grinder it may be mixed with baking powder and very good biscuits can be made, using the butter directly upon them. Some of the oatmeal may be eaten in this way and the rest as mush.

MEDICINAL.

Many drugs have been advanced for the medicinal treatment of these cases, but few have stood the test of experience and time. There is no disease in which quackery, in and out of the profession, is more rampant than in diabetes, and it is well to discourage all patients from using the proprietary remedies so blatantly and ridiculously advertised. Warren, in 1812, strongly recommended the use of opium and its derivatives, and this drug still stands as the best means to diminish the thirst, appetite, amount of urine, secretion of sugar, and nervous irritability. With it, the general condition of the patient improves, and many of those who are debilitated increase in weight. There are many advocates of morphine, others of codeine sulphate, and of the crude drug. In my experience, those patients have a tolerance to opium and can take large doses without narcotism. Having used codeine sulphate for a

number of years, and then morphine in gradually increasing doses, I have come to the belief that the dried extract of opium gives the best results, this being started in half grain doses, three times a day, and gradually increased until four to six grains daily are taken.

The next drug of efficiency, recently so highly recommended by Floer-sheimer, is arsenic. Why it is that arsenic has a selective action on improving the general condition of these patients and their tolerance of carbohydrates is still on theoretical grounds, but there is no doubt that practically there are patients who do better on arsenic than on opium, or any other medicinal treatment. In using it, Fowler's solution commencing with three minims and gradually increasing up to ten, three times daily, is the most convenient and answers for all purposes. It is well here to remember that while large doses of opium may be employed, with the use of arsenic the doses should always remain small or moderate, for cases not benefited by these doses would only be made worse by larger ones.

Throughout the treatment, the urine should be regularly tested by the iron chloride reaction for diacetic acid. If this is present in amounts noticeable by this test, an alkali is necessary to neutralize the acid content of the tissues which is a reaction of the tissues to the high sugar content in the blood, but which in itself more precipitately brings the case to a close than the sugar. When the acid is present, the use of sodium bicarbonate taken by mouth answers the purpose. It is well to start with two or three gramme doses, three times daily, dissolved in water, and increasing this when there is danger of coma, up to as high as one or two ounces for the day. In the presence of diabetic coma, this alkali can be used by intravenous injection or proctoclysis, and many patients have been brought out of coma by it, and sometimes it is good practice to do a venesection and draw off a pint or more blood before the alkaline solution is injected.

In those cases where the stools are high in fats and contain many meat fibres (pancreatic disease), the employment of pancreatic extract has been tried. A close perusal of the literature on the results that have been brought about warrants one in believing that but little benefit can come by the use of pancreatic extract or any of the enzyme preparations supplied by manufacturing houses. Recently, however, sheep's pancreas has been used instead of the extract. A few cases treated in this way have shown remarkable results, and there is little doubt that it is a measure of treatment that has come to stay. For the purpose, the fresh pancreas is secured from the slaughter house or butcher, and this can be taken palatably by being made into a salad with a dressing, from one to three glands being taken in the course of twenty-four hours.

In closing, permit me to say that in the treatment of this disease the patient should be under constant observation, preferably by the same physician. When the patient becomes careless or indifferent, he should be told that, while he is alive and apparently well, he cannot afford to be lax about his condition. His urine should be examined at stated intervals, his general condition and diet watched, and advice given in many ways that would be help-

ful. In the beginning, such persons are like those who have a sword held fixedly over their heads, but too far away to strike. Slowly but surely with most of them the hand comes closer and closer. Finally it is nearby, after which the sword descends quickly and surely. It is when the sword is coming closer, and at the time that it is nearby and before it strikes, that the physician can be most helpful to the patient, for once it starts cutting our patient down, I think we all realize how hopeless our efforts are.

126 EAST SIXTIETH STREET.

ERRORS IN TREATMENT OF SENILE CASES.*

By I. L. NASCHER, M. D.,
New York.

This paper is in logical sequence to a paper on Sources of Error in Diagnosis in Senile Cases, which I read before this society a year ago and which was published in the *Archives of Diagnosis*, July, 1911. The principal sources of error pointed out in that paper were, 1, normally degenerating senile organs presenting manifestations which simulate symptoms of disease; 2, manifestations of senile degeneration so pronounced as to mask the symptoms of a disease; 3, symptoms so obscure as to be unnoticed or uninterpretable; 4, misinterpretation of numerous symptoms, which taken collectively, form apparently a symptom complex. Where such diagnostic errors are made, errors in treatment naturally follow. Mistakes in treatment may also occur through ignorance or neglect of the pathological and clinical differences in diseases occurring in maturity and in senility, of the tendency of diseases to involve allied organs, either directly or through the inability of an allied organ to accommodate itself to the altered function of the diseased organ, of the greater resistance to some pathogenic factors and the lessened resistance to others, lessened innervation, mental depression, exaggerated symptoms, etc. These all fall under the head of errors in diagnosis. A more prolific source of error in senile cases is ignorance of the action of drugs and other therapeutic agents upon the degenerating organs. I might add to this, neglect of the secondary effects of drugs which in the aged are often more pronounced than the primary or desired effect.

A universal error made in dealing with senile cases is the attempt to restore or cure normal degenerations. While it may be possible to retard the senile processes where these are hastened through disease or improper living, it is no more possible to restore a hypertrophied or dilated or degenerated heart, a hardened bloodvessel, a contracted kidney, or an atrophied brain, than it is possible to produce a new growth of teeth in the aged. It is often possible to relieve discomfort, stimulate functions, and produce a sense of well being in cases which present distressing manifestations of normal degenerations, or where functional activity is lessened. It is folly, however, to attempt to cure an ar-

teriosclerosis, for example, which is due solely to the process of involution. Medical literature abounds in reports of cures of this condition. A close investigation into these cases will almost invariably reveal one of two things; either the arteriosclerosis was secondary to a syphilis, nephritis, gout, or other disease, and the cure of the primary disease carried with it the cure of the secondary disease, or else a temporary improvement in the circulation was produced through the use of the iodides and the nitrites, the former lessening the viscosity of the blood, the latter acting as vasodilators. If the arteriosclerosis is due partly to the normal process of involution and partly to a disease cause, the cure of the primary disease will relieve the symptoms of the vascular disease, and what remains after the limit of improvement is reached is the normal state of the vessels.

The iodides do not cure senile arteriosclerosis. By lessening the viscosity of the blood they allow a freer circulation to parts which gave distressing evidence of impaired nutrition; but within a few days, perhaps after a few doses, the physiological effects of the drug appear, the drug must be discontinued, and the former symptoms gradually return. These cases are "cured" while under treatment, but they do not stay cured after treatment is discontinued. The iodides should be used in every case presenting high blood pressure, but if the symptoms of the drug appear within a few days we are dealing with a normal condition of the vessels. The same applies to the nitrites. The only drug of this class suitable for prolonged use is the nitrite of sodium, but if this produces an erythema, dyspnea, or cyanosis, it is showing physiological and not therapeutic effects.

A diagnostic error frequently made and leading to error in treatment, is mistaking the normal senile contracted kidney for the kidney of chronic interstitial nephritis, the diagnosis being based upon the persistent presence of albuminuria. I have referred to this error on several occasions and will do so again. If the urine is diminished in quantity, but is of normal specific gravity and contains no casts, the presence of albumin indicates a senile contracted kidney which is a physiological condition and does not require treatment.

We are often tempted to increase the functional activity of organs in which the functions are weakened. Stimulating a degenerating organ to greater activity hastens its degeneration, and for that reason functional activity should never be stimulated unless, as a result of the diminished functional activity, distress is produced or life is endangered. If secretions are diminished they should be supplied artificially if possible, giving either the secretion itself, its active principle or component, or the gland producing it. A fundamental rule in the treatment of senile cases is to employ as drugs substances natural to the system. If these are not available or applicable, we should resort to physical therapeutic measures as hydrotherapy, mechanotherapy, electrotherapy, climatic and hygienic measures, before falling back upon drugs not natural to the system. This does not mean drug nihilism. It means simply that owing to the uncertain and slow action of drugs upon the senile organism, and the fre-

*Read before the Triprofessional Medical Society, New York, May 21, 1912.

quency of cumulative effects and undesirable secondary effects, less harm will result and better control can be had if we use physical measures and substances natural to the body.

I have seen apoplexy follow the hypodermic use of digitalin, due, no doubt, to the powerful vasoconstrictor effect of the drug upon an atheromatous cerebral artery which could not withstand the increased blood pressure. This death was traceable to the physician's ignorance of the secondary effect of the drug. In another senile case in which morphine and atropine were combined and given *per os*, death resulted in a few minutes from respiratory paralysis. This combination is apparently rational, as the atropine, which stimulates the respiratory centres, is added to overcome the depression of the respiratory centres produced by morphine. But morphine, when given *per os* upon a healthy, empty stomach, acts in from five to ten minutes, while atropine begins to act in from twenty to thirty minutes and the damage is done by the morphine before the atropine has begun to act. Given hypodermically, these drugs act with equal rapidity. Opium and its preparations, and belladonna and its preparations are in some respects physiological antagonists, but all have the very undesirable incidental effect of inhibiting intestinal peristalsis. As the crude drugs, their tinctures and extracts are absorbed slowly and eliminated slowly; there is grave danger from cumulative action if the dose is frequently repeated.

Many deaths among the aged can be traced to the improper use of heart tonics. Physicians often give digitalis and other heart tonics as a precautionary measure in pneumonia and other exhausting diseases from the onset of the disease. The heart in the aged is usually hypertrophied if it is not already dilated or degenerated, and at the beginning of a sthenic febrile disease the heart acts to the limit of its functional capacity. Further stimulation at this time will either paralyze or exhaust the heart, or cause loss of tonicity of the heart muscle with consequent dilatation.

Digitalis is a dangerous and unreliable drug in senile cases. The tincture given *per os* does not show an effect upon the circulation until after twenty-four hours, the action is cumulative if the dose is repeated and it is useless in an emergency. If the active principle is used hypodermically there is danger from the rapid vasoconstrictor effect. If the pulse is rapid and weak showing that there is immediate danger of cardiac exhaustion digitalin may be used hypodermically combined with nitroglycerin and strychnine. Sparteine is of service if the heart is slow and weak, not otherwise. In every senile case, if at the beginning of a febrile disease we get a full, rapid pulse, a heart sedative like aconite, gelseminum, or veratrum should be employed and not a heart tonic or stimulant. Acute inflammatory diseases are, however, rather infrequent in the aged. In dealing with senile cases, we should ever keep in mind the principal causes of death, general exhaustion, paralysis or exhaustion of the heart, pulmonary edema, and uremia. In lingering cases, in which the patient must be kept in bed for weeks, the great danger is from pulmonary edema following hypostatic congestion. It is useless to

change the position of the patient after the symptoms of pulmonary edema have appeared. That should have been done as soon as the physical signs of hypostatic congestion were found, or earlier. After pulmonary edema has set in, nothing can be done. It is the same with uremic coma. Physicians in private practice cannot control the measurement of the daily quantity of urine passed and the output of urea, as they can in the hospital, and in many cases they accept the nurses' statement or the statement of some ignorant member of the family that it is "all right." If the quantity is below 700 grammes a day it is not all right, and if it is below 300 grammes there is danger of uremia. It may be necessary to draw off the urine from the bladder to determine the entire quantity.

If there is danger of uremia renal stimulants are required and here again the usual practice of giving digitalis is likely to do harm. It takes from two to three days before the diuretic effect of digitalis becomes apparent, and convulsions and coma may set in earlier. Far more reliable and rapid in its action is lithia water or alkaline water given in large quantities. The solution of nitrate of sodium or potassium, largely diluted, will act within three hours. Buchu, uva ursi, juniper, spirit of turpentine, copaiba, are active diuretics, but they irritate the kidneys and thereby hasten their degeneration.

Paralysis of the heart is almost always due to excessive stimulation when the heart is already working to the limit of its capacity. Sustain the heart when it is weak and there is danger from exhaustion, not when it is strong.

General exhaustion occurs rapidly in acute inflammatory diseases, slowly in chronic conditions. The advisability of giving strychnine or nuxvomica in exhaustion depends upon the condition of the heart. We may have a general exhaustion with cardiac hypertrophy and powerful heart action, and in such a case strychnine may cause paralysis of the heart. Our main dependence lies in small and frequently repeated doses of alcohol, and secondarily phosphorus, arsenic, and predigested food. In the slow exhaustion that accompanies chronic and wasting disease food, phosphorus, and arsenic, and secondarily alcohol should be used.

In the treatment of chronic constipation in the aged the condition is frequently aggravated through the improper use of purgatives. The indications for treatment are clear if we remember that the cause of this constipation is waste and atony of the muscular fibres, whereby peristalsis is lessened, and that in many cases this condition has led to a dilatation of the lower end of the colon and rectum whereby an inelastic pouch was formed. Feces collect in this pouch and do not move along. In these cases powerful peristaltic stimulants are required and the one most suitable is aloin. The action of aloes begins in the stomach, becomes stronger in the large intestines, and is most powerful in the descending colon and rectum, the cathartic action being produced in from ten to twelve hours. The combination with belladonna is irrational, as the belladonna is added to avoid griping, which it does by inhibiting peristalsis. Another disadvantage is the action of belladonna in suppressing the intestinal secretions. The popular

aloin, strychnine, and belladonna pill is a therapeutic monstrosity in which the incidental effects of the drugs are entirely ignored.

Rhubarb, senna, cascara sagrada, ox gall, and castor oil are milder peristaltic stimulants, each having some advantages and some disadvantages, which should be considered in every case. The prolonged use of aloes is apt to cause hemorrhoids and an habituation to the drug. If piles are present, aloes should not be used. Rhubarb produces a soft stool; there is no griping, and there is no habituation. The objection to it is its secondary astringent action upon the intestines, this action following the peristaltic stimulation, necessitating a repetition of a cathartic the next day. Castor oil interferes with the digestion, and this objection is sufficient to discard it in senile cases. Cascara is probably the best cathartic for prolonged use, although its bitter taste makes it disagreeable to take and it produces in some cases a revulsion which cannot be overcome. It should be given in small doses several times a day. The bile salts being natural to the system can be used continuously without harm, but they are disagreeable to take, the dose is uncertain, depending upon the activity of the liver, and the cathartic action is mild and often absent. The salines should not be used unless there has been no stool for several days, when a single dose, preferably of a natural saline water, should be taken. I have had no experience with hormones and can say nothing about them.

A few general suggestions about the administration and action of drugs in senile cases may not be out of place here.

Drugs should be given in solution whenever possible, alkaloids in preference to crude drugs, tinctures, or extracts. Insoluble drugs like calomel and arsenous acid act very slowly, while gelatin coated pills and capsules frequently pass through the bowels unchanged. The bromides are rarely required; they are slowly absorbed and eliminated. For this reason, when required at all, one strong dose is better than several small doses at short intervals. Chloral is dangerous in large doses and useless in small doses. The sallowness of the aged is generally due to poor surface circulation and to skin changes, and not to a deficiency in hemoglobin. If there is such deficiency hemoglobin or hemogallol acts more certainly and with greater rapidity than any iron preparation. When a person takes alcohol habitually, it will be useless in an emergency. Blood pressure raising drugs like digitalis, suprarenal extract, strychnine, caffeine, camphor, atropine, should never be given except in an emergency and then combined with a drug which lowers blood pressure like alcohol or nitroglycerin. For the same reason chloroform as an anesthetic is safer than ether or nitrous oxide. It should be borne in mind, however, that surgical work in the great cavities, upon large nerve trunks, and where blunt dissection is involved, lowers the blood pressure, and in such cases chloroform favors collapse.

As the elimination of calcium is diminished in the aged, the excess of calcium is utilized in the calcification of cartilages, sclerosis of arteries, and local deposits as in gout. For this reason the calcium salts should never be employed in senile medication.

This paper is mainly empirical and is offered as a suggestion for the better study of drugs and other therapeutic measures upon the senile organism, since the ignorance of drug action in senility is the most prolific source of error in treatment.

631 EAST 168TH STREET.

THE SPECIFIC COMPLEMENT DEVIATION REACTION IN GONORRHEA.*

Its Value as an Aid to Clinical Diagnosis.

By JAMES A. GARDNER, M. D.,

Buffalo;

AND G. H. A. CLOWES, PH. D.,

Buffalo.

The complement fixation test for gonorrhea, first applied by Muller and Oppenheim and subsequently studied by Bruck, Meakins, Vonnod, Wollstein, Teague, Torrey, and Watabiki, has recently been given a far wider practical application by the work of Schwartz and McNeil, who employed a polyvalent antigen derived from twelve different strains of gonorrhea. The work of these investigators, subsequently confirmed by Schmidt, Keyes, and Swinburne, would indicate that the test possesses marked diagnostic value if a suitable antigen is employed. The purpose of our investigation has been to determine:

1. How far this test applied quantitatively gives results corresponding with the clinical condition, and to what extent it can be relied upon for purposes of diagnosis and prognosis;

2. To what extent this reaction may be looked upon as strictly specific for gonorrhea, compared with other conditions, notably syphilis, in which complement deviation phenomena are obtained.

During the past eight months we have tested 185 cases in parallel series: 1. For gonorrhea, with the antigen recommended by Schwartz and McNeil, using a slight modification of their method; 2, for syphilis, with a nonspecific antigen of the type commonly employed in the Wassermann reaction. The sera were obtained from persons having acute or chronic gonorrhea, from individuals suffering from other diseases giving definite deviation phenomena, notably syphilis, cancer, and tuberculosis, and from a series of strictly normal individuals.

We have employed throughout a polyvalent gonorrheal antigen prepared by the method of Schwartz and McNeil, and supplied to us through the courtesy of a proprietary biological research laboratory. The preparation of this antigen by the method adopted by Schwartz is briefly as follows: Ten strains of *Micrococcus gonorrhoeae* are grown on ascites agar for twenty hours, removed to an equal number of bottles for each culture and grown for a further twenty-four hours at 37° C., and tested as regards their purity. The growth from each bottle is then removed with sterile salt solution, shaken, and extracted for eighteen hours; two per cent. cresol is added, and the mixture, after standing for a further twelve hours, is filtered through sterile asbestos and subsequently through a Berke-

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field filter tested for sterility, and suitably diluted for employment as antigen. We have used the acetone precipitated fraction of an alcohol ether extract of sheep's kidney as antigen for the comparative Wassermann syphilitic series. A rabbit anti-goat hemolytic system was employed in both cases, the concentration of the individual constituents being varied to suit working conditions. The sera tested in the experiments reported in this paper were invariably inactivated in advance by heating for thirty minutes at 57° or 58° C. After numerous experiments in which the gonorrheal antigen was used at concentrations ranging from 0.1 to 0.01, we finally decided to use a system consisting of 0.05 of the antigen, 0.15 c. c. of the serum to be tested with from 0.1 to 0.09 c. c. of a twenty per cent. guinea-pig serum as complement, and 0.5 c. c. normal salt solution. After a preliminary incubation of thirty to thirty-five minutes, the activity of the residual complement was tested by the addition of a hemolytic system consisting of 0.1 c. c. of a five per cent. suspension of goat's corpuscles and from 0.25 to 0.3 of a one per cent. rabbit anti-goat serum.

The effect of variation in the amount of antigen employed is well illustrated by the following preliminary experiment, in which we compared the action of the sera of three cases: 1, Chronic gonorrhea of long standing showing Neisser; 2, a suspected case of gonorrhea, Neisser demonstrated later; and, 3, a normal; from which it will be seen that No. 2 gives an uncertain reaction with concentrations of antigen under 0.05 c. c.

Antigen concentration	1.	2.	3.
0.1	+++	+++	—
0.05	+++	+++	—
0.025	+++	++	—
0.01	+++	+	—

In recording our results we have indicated roughly by means of the signs: +, ++, +++, —, > (greater than), and < (less than), the extent of the reaction obtained. Among the 185 cases were included 106 of gonorrhea or with a history of gonorrhea, forty of syphilis, eleven of cancer, three of tuberculosis, and twenty-five normals.

In the series of 106 gonorrheal cases (see table of cases) we have twenty-three showing +++ reaction, fifteen showing ++, twenty-three showing +, thirty-seven reported —, and seven acute cases.

Of the twenty-three cases showing +++ reaction, twenty were examined microscopically. In eighteen we found intracellular diplococci, as appears by Chart 1.

Of the fifteen cases giving ++ reaction, thirteen were examined microscopically. In nine of the thirteen cases we demonstrated intracellular diplococci, as shown by Chart 2.

Of the twenty-three cases showing + reaction, seventeen were examined, in eleven of which we demonstrated intracellular diplococci, as appears by Chart 3.

Clinically the cases showing +++ and ++ reaction, in which we were unable to find Neisser bacilli, were cases of, or with a history of gonorrhea, but because of the difficulty in procuring smears and growing cultures we were unable to prove the presence of Neisser bacilli microscopically, although

the laboratory had reported positive findings in such cases.

As stated, we found Neisser bacilli in eleven of the seventeen cases examined which showed + reaction, and of the remaining six cases, four were clinically cured. Because of the slight clinical evidence of the disease and because some of the cases were clinically cured the difficulty in getting confirmatory evidence in this class of cases was much greater than in the two preceding classes.

We believe that the +++ and ++ gonorrheal reaction is fairly positive diagnosis of the presence of a gonorrheal inflammation, while a + reaction without being confirmed by clinical data, should not be taken more seriously than should a + Wassermann reaction.

This method of diagnosis we have found of great value in certain cases which appear to be clinically cured, and specially in cases of women when, unless one is sure of his ground, it is rather a delicate matter to propose an examination. In illustration, Case 5 was presented for diagnosis, with a history of an attack of gonorrhea five years previously, and stating that the patient's wife had some vaginal irritation. The urine was clear, examination of massage specimen negative. Blood was taken as a routine procedure, and upon the report from the laboratory of +++ gonorrheal reaction, silver nitrate and sounds were used and most vigorous massage. Two days following, a few fields of Neisser bacilli were found, and a week subsequently there was a profuse discharge with many Gram negative intracellular diplococci. In this case, had we not been furnished the clue by the blood examination, we should have overlooked entirely the possibility of the man still being in an infectious stage.

In the thirty-seven cases in which the laboratory reported — reaction, there was but one case (38) in which we had been able to demonstrate intracellular diplococci, undoubtedly Neisser bacilli, which the laboratory reported absolutely negative, as shown by Chart 4. The serum in this case (38) exhibited an unusually marked hemolytic action. Tested on two occasions at a month's interval, a hemolysis greater than that of normal controls was exhibited in both the syphilitic and gonorrheal series. This type of reaction, occurring as it does in a limited number of cases, is liable to introduce a disturbing factor in all complement deviation work, and is being specially investigated by one of us at the present time. It may, however, be said that we can readily recognize this type of reaction owing to its occurrence with or without antigens. We can, therefore, eliminate such cases when they owing to its occurrence with or without antigens, which might otherwise be involved.

A case of interest (60), patient's age forty-nine years, was sent into the hospital for supposed hypertrophy of the prostate with complete retention of urine. Cystoscopic examination showed a condition at neck of bladder which made us suspicious of tuberculosis, and the diagnosis by urine later confirmed our suspicion. The man was a Russian Jew and very deaf and a history was most difficult to obtain. He had a low grade temperature. The blood taken on entering the hospital and tested in the laboratory was found to be negative both as re-

gards syphilis and gonorrhea. It exhibited, however, an unusually high hemolytic activity compared with normal sera, when tested in conjunction with either the gonorrheal or nonspecific antigen. This type of reaction, which we have designated for convenience as a double negative, had been previously noted in certain cases of tuberculosis, from which we concluded that the negative in this case might be attributable to tuberculosis. A little later a large ischio-rectal abscess was discovered, the opening of which relieved the retention of urine. The abscess being treated with Beck's paste healed up; the patient gained in weight, and was discharged markedly improved.

Our observations in the acute cases, seven in number (see Chart 5) bear out those of other observers, i. e., that the reaction does not appear until about three weeks after the appearance of the discharge. In Case 87 it was stated that the discharge appeared only a week previous, but this discrepancy is doubtless explained by the fact that in first attacks many patients do not realize the presence of a discharge until they have painful urination. The infection in this case probably was much earlier than stated.

In Case 85 the question arose whether the attack was a recurrence of an old gonorrhea or an acute condition. The patient, returning from his wedding trip, presented himself with a discharge of fifteen days' duration, gave a history of an attack twenty-five years previously and no subsequent infection, and denied any exposure previous to marriage. Upon first examination smears showed a few intracellular diplococci, and two days later they were found in large fields. Blood was sent twice to the laboratory and a negative report received. Patient had a mild attack, and about fifteen days after the first examination the laboratory reported + reaction. The patient's wife was examined by three physicians, who all reported her to be gonococci free. Our findings from the examination of smears and the blood tests, which, while negative at first, were positive subsequently, prove that there was an acute condition rather than a relapse. The source of the infection, however, is still a question.

We have found that the gonorrhea reaction persists longest apparently in cases where there is an old scar formation. Our attention was first called to the fact by Case 11, which was first seen three years ago with impassable multiple stricture. During the past two years the patient has presented himself about once in two months for passage of sound. There has been no discharge; urine clear, and it was not suspected at the time of blood examination that it would give any reaction. Much to our surprise he gave a +++ gonorrhea reaction.

Another case (30), illustrating the persistence of the blood reaction, was under our care during the full course of the disease and was that of a most conscientious patient. He had a stubborn attack which lasted clinically for about three months. His blood was examined at intervals of a month, and after the third examination the reaction began to decrease, but two months following the disappearance of the clinical symptoms there still was a + reaction.

It is much to be regretted that owing to the shortness of the time which has elapsed since the com-

mencement of this experiment and the difficulty of controlling patients, only a limited number of cases have thus far been followed for any length of time. Of nineteen definite cases of gonorrhea under treatment, in which two or more tests have been made at intervals of three or four weeks, nine show a complete disappearance, and six a marked diminution in the reaction.¹ So far as we are able to judge at present, a case showing a marked +++ reaction may, if successfully treated, lose all trace of reaction in from twelve to sixteen weeks; and one showing a milder reaction at the start may exhibit a negative reaction in from five to eight weeks.

An increase in the reaction would indicate that the treatment has been unsuccessful, but, as stated above, we are not at present prepared to state how long a more or less marked reaction may persist after a cure has been effected.

The persistence of this blood reaction some time after a case is apparently clinically cured, may possibly be due to the survival of unsuspected organisms which still serve as a focus for development. It is, however, highly probable that in those cases, always chronic and generally severe, in which the reaction disappears but slowly, very deep seated metabolic disturbances have taken place, and that considerable time must elapse before the deviating bodies in question are completely removed from the system. Our investigations have covered too short a period for us to draw any final conclusions at the present time, but we propose to investigate this important question further.

In this series we have included twenty-nine cases of syphilis, all of which give a strong +++ or ++++ reaction when tested by the Wassermann procedure (see Chart 6). If to this series we add three cases already enumerated in the gonorrheal series which exhibited strong syphilitic reaction, Cases 18, 20, and 67, we have had a total of thirty-two undoubted cases of syphilis tested in both series. Of this series fifteen, or forty-seven per cent., show an absolute negative, and eight, or twenty-five per cent., only a + (which as stated above should not be considered of final diagnostic value) when testing for gonorrhea. Thus only seven cases, or less than twenty per cent. of these known syphilitics, exhibit a definite gonorrheal reaction, a remarkably low percentage of cases when the number of individuals suffering from both conditions is taken into consideration. Of the seven patients, four are known to have been suffering from both diseases simultaneously; one died before any reliable information could be obtained, and we have every reason to suspect that the other two cases involved a history of gonorrhea.

We have tested, in addition, in this series, eight cases of syphilis in which the syphilitic reaction was, owing to treatment or other causes, insufficiently marked to be of absolute diagnostic value. Only one of these cases gave a reaction in the gonorrheal series over +, and this case proved on subsequent

¹(Added September, 1912.) An examination of the records of the nineteen cases referred to above, four months after the completion of the paper, shows that the reaction has entirely disappeared in all cases. The reaction was very persistent in certain cases. Patient in case 30, for example, exhibited a distinct reaction until a month ago. We are still of the opinion that the reaction persists in certain cases for a considerable period after a clinical cure has been effected; but we consider that even in the most stubborn cases the reaction may be expected to disappear within six months of the completion of a successful treatment.

investigation to be complicated with gonorrhea.

We have tested, in addition, eleven cases of cancer and three of tuberculosis, none of which gave any reaction worthy of note in the gonorrheal series; and as a control we have tested twenty-five normal individuals (many of them repeatedly) all of whom proved absolutely negative in both series.

It is particularly worthy of note that in this series of 185 cases, many of which have been tested several times, so small a proportion give a markedly unmistakable reaction in both the syphilitic and gonorrheal series. Those that do, have almost invariably proved to be suffering from both conditions, from which we may conclude that this gonorrheal complement deviation reaction is possessed of a marked degree of specificity, and may be relied upon as an aid to diagnosis, even in the presence of other diseases known to exert an effect on the complement.

The importance of this method of diagnosis, we think, appeals to all practitioners, because of the difficulty, in various cases in which diagnosis is important, of eliciting a gonorrheal history, and also in making a diagnosis by smears. This is particularly true in the cases of women. For instance, during the last months of pregnancy this test would guide us as to the precautions necessary to guard against gonorrheal ophthalmia in the child as well as in the care of the mother. This test will aid the orthopedic surgeon in diagnosis in various joint conditions. Many cases of rheumatism of long standing and of gonorrheal origin can be diagnosed by this method and markedly improved by proper treatment.

To the gynecologist who sees a case of acute pelvic inflammation, if the condition can be demonstrated to be of gonorrheal origin, any surgical interference of course should be delayed, because such cases are always less formidable if they are permitted to quiet down.

Again, when a candidate for marriage consults us, and we know how difficult it is, often after careful examination with a microscope, to make a diagnosis, a specimen of blood from which gonorrheal as well as a Wassermann reaction could be made, would greatly assist in determining the eligibility of the candidate. This test would probably not be used in a routine diagnosis in the ordinary case of gonorrhea, but in such cases will aid in deciding when the patient is cured.

CONCLUSIONS.

The complement deviation reaction for gonorrhea, when carried out with a polyvalent gonorrheal antigen by the method recommended by Schwartz and McNeil, gives remarkably reliable results and permits of a specific differentiation, even in the presence of syphilis and other diseases exhibiting complement deviation phenomena.

The cases giving +++ or ++ gonorrheal reaction, were all undoubted cases of gonorrhea; although it appears probable, as heretofore stated, that in certain severe chronic cases the reaction may persist for some time after a cure has been effected.

The cases giving a negative gonorrheal reaction (with one exception, previously referred to, and acute cases within twenty-one days of infection),

failed on examination to show diplococci, and may be considered to be probably free from the disease.

The cases exhibiting a +++ Wassermann reaction for syphilis gave for the most part a negative reaction in the gonorrheal series, and when a strong positive gonorrheal reaction was obtained there is little doubt that gonorrhea was, or had been present.

It is remarkable that in this series of 185 cases, seventy of which exhibited a strong reaction in the gonorrhea or syphilitic series, only seven cases, or ten per cent., gave a strong reaction in both. A slight reaction is of unquestionable value in diagnosis, but, as in the case of a slight Wassermann reaction for syphilis, should never be considered final.

We have up to the present failed to find a single normal individual exhibiting a definite reaction when tested with the gonorrheal antigen.

In conclusion we wish to take this opportunity of expressing our indebtedness to our associates, Dr. James B. Cross and Mr. West, for their invaluable cooperation in the clinical and laboratory work.

TABLE OF CASES.

Case No.	Previous attacks.	Duration of present attack.	Clinical condition. Date of subsequent examinations.	Blood tests.	
				W.	Neisser present.
1	0	6 mos.	P. and V. ¹	+++	Yes
2	0	1 yr.	Post. U. ²	+++	Yes
3	0	2 yrs.	5 wks. later, cured	+++	Yes
4	0	1 mo.	Chronic post. U.	++	Yes
5	0	5 yrs.	2 mos. later	++	Yes
6	1	3 yrs.	Subacute gonorrhea	+++	Yes
			Apparently cured	+++	Yes
			P. and V. epididymitis	+++	Yes
			6 wks. later	+++	Yes
			3 mos. later	+++	Yes
			14 weeks later, cured	—	—
7	1	Several mos.	Urine loaded with phosphates	—	No
8	0	6 mos.	Periurethral abscess	+	Yes
			Post. U.	+	—
			6 wks. later	+	—
			3 mos. later	+	—
9	2	2 mos.	Post. U.	+	Yes
10	0	2 yrs.	11 wks. later	+	—
11	0	3 yrs.	Tight stricture	+++	Yes
12	0	2 yrs.	Old stricture	+++	No ex.
			Vatery discharge	—	No
			Staphylococci	—	No
13	0	2 yrs.	Prostatitis	++	Yes
			6 wks. after "606"	+++	—
14	2	2 mos.	Chronic post. U.	+++	Yes
			5 wks. later	+++	—
			10 wks. later	+++	—
15	1	7 mos.	Gleet	+++	No
			11 wks. later	++	+
			15 wks. later, cured	++	—
			Gleet	++	No
			Chronic P. and V	—	—
17	0	4 yrs.?	Frequent relapses	—	No
18	0	.....	Tuberculous kidney	++	No
19	1	.....	Nephritis	++	No
20	0	4 mos.	Urethritis, secondary symptoms syphilis	++	Yes
21	1	1 yr.	Chronic post. U	+++	Yes
			1 mo. later	+++	—
			2 mos. later	+++	—
			3 mos. later, cured	+++	—
22	0	1 wk.	Cured gonorrhea	—	No ex
23	0	3 mos.	Large culture stricture	—	No
			4 wks. later	—	No
24	0	2 yrs.	Cured post. U.	++	Yes
25	1	10 mos.	Frequent relapses	++	Yes
			3 wks. later, cured	++	—
26	1	4 mos.	Chronic post. U.	+++	Yes
			Epididymitis	+++	—
			3 wks. later	+++	—
			4 mos. later, cured	+++	—
			Chronic P. and V.	++	Yes
27	2	2 mos.	Slight discharge	++	Yes
28	0	4 days	Multiple stricture	—	No
29	2	10 yrs.	Subacute gonorrhea	++	Yes
30	0	1 mo.	4 wks. later	++	—
			2 mos. later	++	—
			3 mos. later	++	—
			4 1/2 mos. later	++	—
31	3	.....	Few shreds.	—	No

¹Prostatitis and vesiculitis.

²Posterior urethritis.

³After blood report discharge was set up by silver nitrate and Neisser found.

Case No.	Previous attacks. Duration of present attack.	Clinical condition. Date of subsequent examinations.	Blood tests.		Neisser present.	Case No.	Previous attacks. Duration of present attack.	Clinical condition. Date of subsequent examinations.	Blood tests.		Neisser present.
			G.	W.					G.	W.	
32	0 3 mos. ago.	Patient came for diagnosis; had been cured chronic prostatitis 1 mos. later.	++	+	Yes	88	1 3 yrs. ago	Urethral chancre	—	—	No
33	0 7 mos.	—	++	+	—	89	4 1/2 yrs. ago	Cured	—	—	No
34	3	Patient came for examination; apparently cured.	++	+	No	90	6 yrs. ago	Occasional irritation; few shreds	—	—	No
35	3	Burning sensation	—	—	No ex.	91	4 mos. ago	Cured	—	—	No
36	1 3 mos. ago (slight)	Cured	+	+	—	92	3 mos. ago	Cured	—	—	No ex.
37	2 6 mos.	Large stricture	++	+	Yes	93	2	Cured	—	—	No ex.
38	Gonorrhea 14 yrs. ago	Chronic urethritis 4 wks. later	+	—	No	94	2	Cured	—	—	No ex.
39	4 3 wks.	Relapses (?) every 2 yrs.; chronic prostatitis 1 mo. later	—	—	No	95	4	Cured	—	—	No ex.
40	2 yrs.	Acute gonorrhea	—	—	No	96	4 Last attack	Cured	—	—	No ex.
41	0 10 yrs.	Chronic urethritis	++	+	No	97	0 2 yrs.	Number relapses	+	+	Yes
42	0 4 wks. (slight)	Staphylococci	++	+	No	98	0 4 mos. ago	Came for diagnosis	—	—	No
43	3 3 mos.	Cloudy urine; blood at times; colon bacillus; staphylococci 3 wks. later	++	+	No ex.	99	2 5 yrs. with many relapses	P. and V. chronic post. U.	+	+	Yes
44	1 3 wks.	Phimosis; secondary syphilis	++	+	No ex.	100	0 3 mos.	Chronic post. U.	—	—	Yes
45	3 8 mos.	Structure; few shreds	+	—	No	101	2 4 wks.	Slight discharge	—	—	No
46	0	Inflammation verumontanum	+	—	No	102	0 3 mos.	Cured	—	—	No
47	3	Chronic U. and V.	++	+	Yes	103	3 3 mos.	Chronic gonorrhea	++	+	Yes
48	2 2 yrs.	1 mo. later	++	+	—	104	.....	Chronic gonorrhea	++	+	Yes
49	4 4 wks.	3 mos. later	++	+	—	105	.....	Syphilitic	++	+	Yes
50	4	Marked cystitis; colon infection	++	+	—	106	0 3 days	Acute gonorrhea	—	—	Yes
51	1 18 mos.	Stricture; few shreds	++	+	No						
52	1 6 wks.	Chronic post. U.	++	+	Yes						
53	0 2 mos.	Stricture	++	+	—						
54	0	7 wks. later	++	+	—						
55	1	Colon bacillus; Staphylococci	++	+	No						
56	1 3 yrs.	Chronic post. U.	++	+	Yes						
57	3 3 wks.	5 wks. later	++	+	Yes						
58	1 2 mos.	3 mos. later	++	+	Yes						
59	1 2 mos.	Red patch on glands	++	+	No						
60	0	Large calibre stricture	++	+	No						
61	1 6 mos.	Frequent relapses	++	+	No						
62	5 11 mos.	Chronic post. U.	++	+	Yes						
63	0 3 wks.	Profuse discharge	++	+	Yes						
64	1 11 mos.	Relapses (?) every 2 yrs.	++	+	Yes						
65	1 12 yrs. ago	Stricture; chronic post. U.	++	+	Yes						
66	.....	3 wks. later	++	+	—						
67	.....	6 wks. later	++	+	—						
68	1 15 yrs. ago	Operated on for pyosalpinx 2 wks. ago	++	+	No						
69	2	Chronic post. U.	++	+	No ex.						
70	1 1 yr. ago	5 wks. later, cured	++	+	No						
71	2	Chronic prostatitis	++	+	No						
72	3 3 wks.	Staphylococci	++	+	No ex.						
73	1	Acid urine	++	+	No ex.						
74	0 2 1/2 yrs.	Has had perineal abscess every year	++	+	No						
75	1 1 yr.	Number shreds	++	+	No						
76	1 1 mo.	Large calibre stricture	++	+	No ex.						
77	0 3 wks.	Came for examination	++	+	No						
78	3 4 1/2 mos.	Tertiary syphilis	++	+	No						
79	2	Bright's disease	++	+	No						
80	3	Tuberculosis of kidney	++	+	No						
81	1 1 yr. ago	Chronic prostatitis	++	+	No						
82	1 1 yr. ago	Few shreds	++	+	No						
83	.....	Stricture; has had two attacks gonorrheal arthritis	++	+	No						
84	.....	Relapses; few shreds 3 wks. later	++	+	Yes						
85	1 10 days	Came for diagnosis	++	+	No						
86	1 18 mos.	Post. U. staphylococci	++	+	No ex.						
87	1 1 wk. ?	Relapse after each coitus; epididymitis	++	+	No						
88	.....	Subacute gonorrhea	++	+	Yes						
89	.....	Acute gonorrhea	++	+	Yes						
90	.....	Chronic anterior and posterior urethritis	++	+	Yes						
91	.....	Endometritis	++	+	No						
92	.....	Locomotor ataxia	++	+	No						
93	.....	Cured	++	+	No						
94	.....	Inflammation verumontanum	++	+	No						
95	.....	Operated on for pyosalpinx 2 wks. ago	++	+	Yes						
96	.....	Operation for abscess Douglas's cul-de-sac	++	+	Yes						
97	.....	Acute gonorrhea	++	+	Yes						
98	.....	2 wks. later	++	+	Yes						
99	.....	Inflammation verumontanum	++	+	Yes						
100	.....	Acute gonorrhea	++	+	Yes						

CHART I.—TWENTY-THREE CASES WITH +++ REACTION.

Case No.	Gonorrheal history.	Slides examined.	Neisser bacilli present.	Blood tests.	
				G.	W.
1	Yes	Yes	Yes	+++	—
5	Yes, 1906	Yes	Yes	+++	—
6	Yes	Yes	Yes	+++	—
10	Yes	Yes	Yes	+++	—
14	Yes	Yes	Yes	+++	—
15	Yes	Yes	Yes	+++	—
16	Yes	Yes	No	+++	—
20	Yes	Yes	Yes	+++	++
21	Yes	Yes	Yes	+++	—
24	Yes	Yes	Yes	+++	—
30	Yes	Yes	Yes	+++	—
33	Yes	Yes	Yes	+++	—
45	Yes	Yes	Yes	+++	—
51	Yes	Yes	Yes	+++	—
57	Yes	Yes	Yes	+++	—
59	Yes	Yes	Yes	+++	—
64	Yes	No	...	+++	—
64	Yes	No	...	+++	—
65	Yes	No	...	+++	—
77	Yes	Yes	Yes	+++	—
78	Yes	Yes	Yes	+++	—
87	Yes	Yes	Yes	+++	—
103	Yes	Yes	Yes	+++	—

CHART II.—FIFTEEN CASES WITH ++ REACTION.

Case No.	Gonorrheal history.	Slides examined.	Neisser bacilli present.	Blood tests.	
				G.	W.
2	Yes	Yes	Yes	++	—
11	Yes	No	...	++	—
19	Yes	Yes	Yes	++	—
20	Yes	Yes	Yes	++	—
27	Yes	Yes	Yes	++	—
37	Yes	Yes	Yes	++	—
41	Yes	Yes	No	++	+
58	Yes	Yes	Yes	++	—
71	No	No	No	++	—
74	Yes	Yes	No	++	—
76	Yes	Yes	Yes	++	—
79	Yes	Yes	No	++	—
101	Yes	Yes	No	++	—
104	Yes	Yes	Yes	++	—
105	Yes	Yes	Yes	++	—

CHART III.—TWENTY-THREE CASES WITH + REACTION.

Case No.	Gonorrheal history.	Slides examined.	Neisser bacilli present.	Blood tests.	
				G.	W.
3	Yes	Yes	Yes	+	—
4	Yes	Yes	Yes	+	—
8	Yes	Yes	Yes	+	—
9	Yes	Yes	Yes	+	—
13	Yes	Yes	Yes	+	—
25	Yes	Yes	Yes	+	—
30	Yes	Yes	Yes	+	—
42	Yes	No	...	+	—
43	Yes	Yes	Yes	+	—
44	Yes	Yes	No	+	—
47	Yes	Yes	No	+	—
53	Yes	Yes	Yes	+	+
56	Yes	Yes	No	+	—
61	Yes	No	...	+	—
62	Yes	Yes	No	+	—
65	Yes	No	...	+	—
67	No	No	...	+	+
72	Yes	Yes	Yes	+	+
74	No	No	...	+	—
77	Yes	Yes	Yes	+	—
86	No	No	...	+	—
87	Yes	Yes	Yes	+	—
92	Yes	No	...	+	—
97	Yes	Yes	Yes	+	—
99	Yes	Yes	No	+	—

*Found at time of attack.

†Not at this time.

CHART IV.—THIRTY-SEVEN CASES WITH — REACTION.

Case No.	History of gonorrhea.	Discharge.	Physical condition.	Diagnosis	Blood tests	
					G.	W.
7	Yes	No	Burning sensation on urination; urine loaded with phosphates	Phosphaturia	—	—
12	?	Yes	Both urines dirty	Staphylococcus infection	—	—
17	Yes	Gleet	Few shreds in urine	Over treatment; cleared up when treatment stopped	—	—
23	Yes	No	Shreds in urine	Inflammation verumontanum	—	—
29	Yes	Slight	Shreds in urine	Multiple stricture	—	—
31	Yes	No	Few shreds in urine; prostatitis	Prostatitis; urine cleared up after few massage treatments	—	—
32	Yes	No	Few shreds in urine	Urine cleared up when treatment discontinued	—	—
34	III	No	Urine clear	Cure	—	—
35	III	No	Urine dirty; prostatitis	Prostatitis; urine clear after few massage treatments	—	—
38	I	Yes	Urine dirty; discharge at meatus	Chronic gonorrhea; Neisser bacilli found	—	—
40	Yes	Yes	Urine dirty; prostatitis	Cleared up and cured after three treatments	—	—
46	Yes	No	Cystitis; prostatitis	Colon infection; improved under vaccine	—	—
48	Yes	No	Number shreds in first urine	Desquamating epithelium	—	—
49	Yes	Yes	Frequent urination; smarting	Acid urine	—	—
50	Yes	Yes	Frequent urination; urine full of shreds	Stricture	—	—
52	Yes	Yes	Profuse discharge	Staphylococci infection; cleared up under vaccine	—	—
55	Yes	No	Few shreds in urine	Old stricture; cleared up after dilatation	—	—
63	No	Yes	Slight discharge after suspicious intercourse	Cleared up with one treatment	—	—
68	Yes	No	Cloudy urine	Chronic nephritis	—	—
69	No	No	Urine dirty; retention; tubercle bacilli in urine	Tuberculous	—	—
70	Yes	No	Few shreds in urine	Chronic prostatitis	—	—
73	Yes	Slight	Meatus sticks together	Strain	—	—
80	Yes	No	Dirty urine	Locomotor ataxia	—	—
81	Yes	Slight	.....	Inflammation verumontanum	—	—
82	Yes	Slight	.....	Inflammation verumontanum	—	—
83	Pus tubes	No	.....	.....	—	—
88	Yes	Slight	Slight discharge	Secondary syphilis	—	—
89	Yes	No	Cured	Cured	—	—
90	Yes	No	Occasional irritation; few shreds	Inflammation verumontanum	—	—
91	Yes	No	Few shreds	Cured	—	—
93	Yes	No	Cured	Cured	—	—
94	Yes	No	Cured	Cured	—	—
95	Yes	No	Cured	Cured	—	—
96	Yes	No	Cured	Cured	—	—
98	Yes	No	Cured	Cured	—	—
100	Yes	Slight	Shreds in urine	Chronic prostatitis and vesiculitis	—	—
102	Yes	Slight	Slight discharge	Endometritis	—	—

CHART V.—SEVEN ACUTE CASES.

Case No.	Duration of discharge before blood tests.	Blood tests		Neisser bacilli present.	Clinical condition
		G.	W.		
22	2 days	—	—	Yes	Cured after 12 days.
28	3 days	—	—	Yes	Cured after 13 days.
30	9 days	—	—	Yes	Cured after 12 days.
77	17 days	+++	—	Yes	Mild attack
85	10 days	—	—	Yes	Mild attack
87	15 days later	—	—	Yes	.....
87	1 week(?)	+++	—	Yes	Severe attack
106	3 days	—	—	Yes	Severe attack

CHART VI.—TWENTY-SEVEN SYPHILITIC CASES.

Case No.	Blood reaction—		History.
	Wassermann test for syphilis.	Gonorrheal test.	
110	+++	—	Tertiary syphilis
111	+++	—	Secondary syphilis
112	+++	++	Tertiary syphilis; history of gonorrhea
113	+++	++	Tertiary syphilis; gonorrhea denied
114	+++	++	Tertiary syphilis; gonorrhea probable
115	+++	—	Secondary syphilis
116	+++	—	Secondary syphilis
117	+++	—	Tertiary syphilis
118	+++	+	Secondary syphilis; no history of gonorrhea
119	++	—	Tertiary syphilis; cured of gonorrhea
120	++	+	Secondary syphilis
121	++	—	Secondary syphilis
122	++	++	Tertiary syphilis; gonorrhea
123	+++	+	Tertiary syphilis; no history of gonorrhea
124	++	—	Tertiary syphilis
125	++	—	Tertiary syphilis
126	+++	—	Secondary syphilis
127	+++	—	Secondary syphilis
128	+++	+	Tertiary syphilis; gonorrhea improbable
129	+++	—	Secondary syphilis
130	+++	++	Tertiary syphilis
131	+++	++	Tertiary syphilis
132	+++	—	Tertiary syphilis
133	+++	—	Secondary syphilis
134	+++	—	Tertiary syphilis
135	+++	+	Secondary syphilis
136	+++	++	Secondary syphilis

TEN SEX TALKS TO GIRLS.

BY IRVING DAVID STEINHARDT, M. D.,
New York.

VIII.

To-night our subject should be of interest to every woman—wifehood and motherhood. I almost feel as if I could not begin to do justice to the subject. No matter how much I try, and no matter how much I say, I shall barely have begun to cover this very large subject, so I offer you in the beginning my apologies for the shortcomings of the paper to which you are about to listen. If I leave anything out that you wish to know, remind me of it in the usual discussion that follows each of our little talks. In the last paper I gave you a few hints on what helps to make a good wife. In this paper I am going to assume that I am speaking to a good wife who is yearning to increase the bond that binds her husband to her and her to her husband—the bond of parentage. How shall she know that this great event is going to take place in her life? This triumph of great, rich, and mutually pure love going to be realized? There are several things which happen which anticipate this event and tell of its coming. It is important that our good wife knows what these are so that in their event she will place herself at once under the care of a good physician in whom she has every confidence and whose personality and professional methods are both pleasing and satisfactory to her. Childbirth is an event in a woman's life in which little details require attention, as they count much

with her at this time. I want to emphasize the importance of having the expectant mother under the care of a physician as early as can be, because he can make easier for her so many of the little rough places on the road to motherhood. There are many little things, which if attended to early by the expectant mother, make the mother and child healthier later and, I might add, happier also, for health makes for happiness, and without the former there cannot be much of the latter.

Before speaking of the earlier and later signs of approaching motherhood, I want to say a few words of advice to the good wife who is fortunate enough to be approaching that blessed state. It may save her some very unhappy and regrettable moments with her husband. It may save her from some very unpleasant thoughts and suspicions. For some rather obscure reasons a woman in the state of expectant motherhood oftentimes undergoes a complete change of disposition, likes and dislikes. What pleased her very much before, is very likely to become absolutely distasteful to her. A happy, sunny girl is changed into a worrying, moody one; a moody one becomes a sunny one; the quiet reserved girl is likely to attract attention by the lightness of her demeanor; and so on. Luckily, in most cases, these changes are very temporary. It is too bad that in the cases, where the changes are for the better, they are not permanent.

It is while these changes are in force that husbands suffer. Slightings are imagined on their part toward their wives, which were never intended to be such. Neglect is charged where none exists. Lack of affection and attention is charged where conditions are just the same as they were; or perhaps better, for even the most undemonstrative of men is usually somewhat moved over the idea of the arrival of an heir and the accompanying condition of his wife. I think that, perhaps, forewarning the young wife of these things will help matters along somewhat, for she will, maybe, if she remembers about them at this time, try to avoid these unpleasant things and therefore save her husband and herself much unhappiness. Unfortunately, most husbands do not know that these changes are to be expected, and, not understanding the causes of the great change in their wives, they get out of patience and say and do things that they would not if they understood. Where ignorance reigns this before birth stage is oftentimes a most trying time for both and the links in their chain of happiness are often strained almost to the breaking point. Such a fact is detrimental to the unborn developing child, as you can very well imagine. At this time the love and devotion of the husband and wife must be at its highest point for the benefit of both mother and child. It counts for much. The better and happier the maternal thoughts, so much the better for the child.

The appetite of our little wife also becomes affected at this time. The class of food she ate with relish formerly now disgusts her, and she craves things that in the near past she had no desire for. Oftentimes she gets a longing to eat things not ordinarily suited for human food. She eats these things and thrives on them. This again is only a passing fancy which rights itself in a short time. Some-

times, but not often, the little wife gets careless about her personal appearance. This should not be, for even in the last few weeks of the before birth stage cleanliness and neatness are quite possible. It is a mistake for any wife, either at the time of childbirth or any other time, to fall into slovenly habits. You cannot always look as if you had stepped out of a fashion plate, and do not think any husband wants you to look this way at any time, but you can always be neat and tidy looking and it will be much appreciated by your husband. Remember that in the courting days you trained him to see a clean, tidy, well groomed girl, and this is the girl he married. Can you blame him if he objects to, therefore, a sloppy, uncombed, ill kept looking wife? Habits of neatness in yourself also have a good effect on him in setting him an example to remain the neat, well groomed man you married. It is very nice to keep up these things after marriage, and to do even still better if you can. Advance even after marriage—do not stand still. But whatever you do, do not go backward. Do all you can to advance your husband and yourself. I do not mean in a business or material way, but in an educational and intelligent way. You have a brain so you should use it. Ideal motherhood includes brains and to be the ideal mother you need more brains than are necessary for a college education or "women's rights" movements, including suffragette propaganda.

I am digressing too much from my subject, so I must stop short right here and get back to our little wife. How is she to know when she should begin to get interested in patterns of baby clothes? How is she to know when to begin to make those dainty negligée robes to receive her friends in, just after baby's arrival? There are some very easy signs to judge by. Usually one of the first signs is the stopping of the menstruation. This is almost constant in every case, and although there are other causes for the cessation of menstruation this particular cause is by far the most frequent of all. And, Oh! sleep. How overpowering is the wish for it! The little wife can hardly get her dinner finished before her eyes close. She does not seem to be able to get enough, try as she will. She is not very good company for her husband those nights on that account. She almost falls asleep while she is eating her dinner at night. In fact it is a hard struggle whether she wants to eat or to sleep most, for hunger is a very marked symptom. Like the question of sleep, can she ever seem able to get enough food? At meals, and between meals, she is always eating and is still hungry. A change in the eyes is noted. Dark rings appear beneath them, more noticeable in some than in others. Changes in the breasts are realized. They become harder, firmer, and begin to develop in size quite rapidly. Sometimes they feel quite tight and painful. Around the nipples the brownish area enlarges in size and gets much darker in color. Within this area several little, pealike lumps become prominent. In the centre line of the body, from the top of the pubic hair to the navel, a line of brownish color appears. An increase of any previous leucorrhœal discharge is noticed or, where none existed, one appears. A prominence in the veins

of the breasts may be noticed and later on in the lower limbs. This latter I will speak of again. The little wife will also notice a slight sense of weight in the pelvic cavity or lower part of the body, and will also be made aware of an irritable bladder by having a constant desire to urinate. This early, frequent desire does not mean that anything is wrong with the bladder; it is due merely to increased pressure within the pelvis. If the little wife was constipated before, she is more so now, and if she was regular before, she is inclined now to be constipated. This is a condition which must be corrected at once and throughout the whole time. If not, it only adds pain and danger at the time of the childbirth. The general appearance is altered at this time also. In some women the general appearance is markedly improved, whereas in others the face shows marked changes for the worse. Usually this is merely temporary, however, in either case. These are about all the signs the little wife would notice early. What signs the doctor's examination would reveal would be foreign to our talks, so I will not discuss them.

As the baby goes on developing within the womb, other changes are apparent to the little mother to be, one of the most unpleasant of which is the so called "morning sickness," which is a feeling of nausea oftentimes accompanied by vomiting, occurring most often in the morning upon rising from bed, and continuing at periods throughout the day. This comes on any time around the fifth week of the pregnancy, and usually lasts only until about the twelfth week. Some women, however, are so unfortunate as to have this "sea sickness" last much longer. It is rather a distressing time for the young mother to be, for it is hard to have a good appetite, and yet have a stomach which refuses to allow you to satisfy hunger, for it seems an awful waste of time to eat, and then have immediately to vomit up all you have swallowed, even before you have finished your meal or whatever food you were eating. It is a most peculiar state of affairs. The mere mention of the word "food" is enough to cause some pregnant women to vomit. In other words, the sight or smell of food, either raw or cooked, is enough to cause the stomach to eject its contents. In this state many can eat safely at a restaurant, and yet cannot eat at home at all. Others will eat the queerest articles of food and digest them safely, whereas their stomachs will reject their usual articles of diet. Some will practically escape this unpleasantness altogether, whereas with others it will last almost throughout the before birth period. All come through it safely, however, and if they have put themselves under the care of a physician, he has been able to help them a good deal.

All of you have heard that with the coming of children the mother's teeth must suffer. This is not true. The proper care of the expectant mother will avoid this unfortunate occurrence. The first thing is to see that the digestion is good, the bowels are regular, and the teeth and mouth clean, and also free from an acid reaction. The next thing to do is to supply nourishment to the teeth to take the place of that which formerly went to the teeth, but is now needed for the development of the unborn

child. Here again is another advantage of early medical care. The doctor sees to the digestion and bowels, and also prescribes the necessary medication for the teeth. It is taken for granted that the little wife's own daily habits of cleanliness cause her to clean her teeth and wash her mouth out at least once every day. If the doctor finds out to the contrary, he gives the necessary orders for this needful hygiene of the mouth.

You have all also heard of how the veins of the lower extremities are liable to become enlarged at this time, and also how piles are to be expected as the child grows larger within. These two things can also be prevented by proper measures. They are due to the increased pressure within, plus any constipation which may exist, and if additional support is given to the veins liable to be affected, and constipation is not neglected, the chances are that no bad results will come.

As the waist line grows in circumference the clothes must be made larger and more comfortable, for compression of the body is harmful in many ways. It may cause a miscarriage, or the unborn child to take a bad position in the womb, or even cause the womb itself to be displaced. Either of these latter events will necessarily complicate the delivery of the child at the time of its coming into the world. The little wife must always bear in mind that the womb—which I described to you in my first talk—is going to enlarge from the little, tiny organ that it is in both the virgin and resting states, to a size somewhat larger than the new born baby, because, beside holding the new born baby, it must hold the wrappings of the baby which envelop it, and the fluid in which it is contained, which amounts to several quarts.

When the little wife puts herself under the care of the doctor, he will instruct her as to the care and preparation of the breasts and nipples, because every normal mother wants to nurse her baby if she possibly can, and proper preparation of the breasts for this function helps her to this end and prevents such things as sore nipples, cracked nipples, fissures, etc.

The little wife, when in this condition, must avoid overexerting herself, missteps, straining, or stretching, rough pleasures, jumping, jolting, or bouncing, as these things may bring on a miscarriage. During the before birth period, beside looking to regular bowel habits, the action of the kidneys must be watched, and the quality and quantity of the urine carefully noted. In this stage the kidneys have to attend to carrying off not only the waste material of the mother, but of the child also, for you must bear in mind that the unborn child is a living being, having the same functions as any other living being. If the kidneys, therefore, for any reason fail to do their work properly, the poisonous waste of two bodies is retained, with oftentimes fatal consequences to both mother and child. That is another reason why early medical attention is advisable. The doctor by making frequent examinations of the urine keeps in touch with how things are going.

As our wife gets nearer to the time of motherhood she gets less inclined to go out and take exercise. But she must, in moderation, of course. She should

always stop just short of fatiguing herself, however, which would be harmful. Under the care and direction of her medical attendant, who watches carefully over her in every way, guarding her against both lack of food and too much food, our wife approaches the time for the advent of "their" child, anxiously awaiting that moment when she shows her husband this living triumph of their mutual love and the gratification of it in the very sacred bonds of matrimony. She is not afraid of her approaching motherhood, because she knows that motherhood is a natural function following her promotion to wifehood, and she wants this emblem of honor—motherhood—to be hers.

310 WEST NINETY-NINTH STREET.

HIGH FREQUENCY CURRENTS IN ECZEMA.

By E. G. CHARBONNEAU, A. M., M. D.,
Newark, N. J.

The accompanying photographs will serve to illustrate the really wonderful results which may be made to follow the scientific application of electricity in the treatment of some of the so called obstinate or unyielding cases of skin diseases.

This particular case, which baffled the shifts and turns of two skin specialists, one baby specialist, and two other physicians in general practice, for six months, was one of infantile eczema, attacking almost the entire body of the unfortunate victim, which was all told, a most pitiful sight to behold. The scalp, together with the entire face, both hands, and lower extremities, were the parts most involved. A very active conjunctivitis complicated the eczema. The eyelids were swollen, tense, and painful, the right eye practically closed. There was constant oozing from the parts involved, with bloody incrustations covering them. The suffering and discomfort must have been intense, as the parents were compelled to carry their crying child in their arms night and day.

All attempts to subdue the disease having met with failure, the case was finally referred to me, the mother being advised to try electricity, with the assurance that it would not injure the child, but perhaps would secure some relief. After some difficulty, the mother finally succeeded in collecting a sample of urine which I requested her to do. The urine of this seven months' male infant was immediately subjected to a thorough chemical analysis, which showed the following conditions: Odorless, colorless, reaction neutral. Specific gravity, 1.002. Weight of fluid ounce, 456.60 grains; solids, 2.12 grains. Deposits of mucus. No bile, sugar, nor albumin. Percentage of urea, 0.452 grain (very low) to the ounce.

Results on net basis: Urea, 0.45; water, 97.00; sugar, 0.00; foreign, 1.04; albumin, 0.00; chlorine, 0.24; sulphuric acid, 0.17; phosphoric acid, 0.10; phosphoric acid with earths, none; with alkalies, none; acid, negative favoring neutral; solids, none; water two per cent. excess; neutrality, 60-100 fluid amount. Microscopically: Sodium urate, free in amounts; lime salts, scant.

From the foregoing it was an easy matter to perceive at once that our whole trouble took its focus in faulty metabolism, the urea alone being deficient, eighty per cent. fluid amount, and this condition favoring the same.



FIG. 1.—Patient, before treatment begun

The system was overwhelmed with toxines, and had this condition been permitted to run along, it would most probably have led to nephritic and other serious complications.

Malnutrition, together with an alkaline urine being in evidence, I subjected the patient to the powerful stimulating, as well as eliminative effects of the low potential, high amperage, high frequency currents, and ordered lemon juice to be given to the child, from three to four times daily, while the local manifestations were brought under control with the local application of the high potential currents, al-



FIG. 2.—Patient, two weeks after treatment commenced.

ternating this with from four to six second exposures to the x rays.

Improvement began after the first treatment, and a later chemical analysis showed urea, being eliminated 2.25 per cent. and the reaction, acid, with

corresponding gains in all channels. The high frequency currents were discontinued after ten days, and the concentrated static wave current given instead, in order to restore general nerve vitality.

The patient slept five hours after the second treatment, and from being an apparently lifeless child, began to take interest in its surroundings. All told fourteen treatments were given, and our little patient made a full and complete recovery as shown in Fig. 2, taken two weeks later.

1115 BROAD STREET.

TRAUMATIC SEPARATION OF THE EPIPHYSEAL BEAK OF THE TIBIA.

By GOODRICH B. RHODES, A. B., M. D.,
Cincinnati,

Junior Surgeon, City Hospital, and Episcopal Hospital for Children.

The routine study of bone and joint injuries by the x ray has given us the discomfiting knowledge that the lesions formerly classed as simple dislocations and sprains are, in a large proportion of cases, complicated by the tearing off of larger or smaller pieces of bone corresponding to the insertion of ligaments or tendons. In other words, in these cases the tensile strength of the ligament has proved greater than that of the bone into which it is inserted. The supposedly simple subcoracoid dislocation, if carefully studied by the x ray, will, in an overwhelmingly large majority of cases, show a tearing off of the greater tuberosity of the humerus. This has been true in the last four cases seen by the writer.

It will be remembered that the upper end of the tibia is developed usually from two centres, one for the diaphysis, and one for the epiphysis. The epiphyseal centre appears at about twelve years of age and unites with the diaphysis at about the twentieth year. The structure destined to form the tubercle of the tibia is usually evolved from the epiphysis by a downward growth, covering the upper and anterior aspect of the head of the tibia, and from its resemblance to a bird's bill, is called the tibial "beak." In some instances, however, this beak, instead of being developed from the epiphysis, develops from a separate osseous centre.

A total tearing away of the tubercle of the tibia is recorded as a very rare injury. Stimson states only nine cases to have been recorded. A more common lesion is the separation of the beak, or what is termed a "starting" of the epiphysis, by a sudden violent pull on the patellar tendon. The probable reason for the incomplete nature of the fracture or separation, is that the tubercle of the tibia is not the sole point of insertion of the patellar tendon.

The following case is reported for its comparative rarity. In this case we not only have a separation of the epiphyseal beak, but the beak is developed from a separate centre of ossification, as is clear from the x ray picture.

CASE. ROSE S., aged fourteen years; previous history negative. No syphilis. Patient fell about five months ago, but did not remember striking her knee, or noticing any

subsequent bruising over the head of the tibia. Immediately she felt a pain in the joint, and limped for some time succeeding the injury. The pain ceased, but a swelling soon developed which increased in size until the presence of the mass caused her to be brought to the clinic. On examination a hard, rounded, immovable mass, as large as a plum, was to be felt over the tubercle of the tibia. No crepitus was obtained. The x ray showed a stripping back of the epiphyseal beak, with infiltration by bone salts into the patellar tendon.

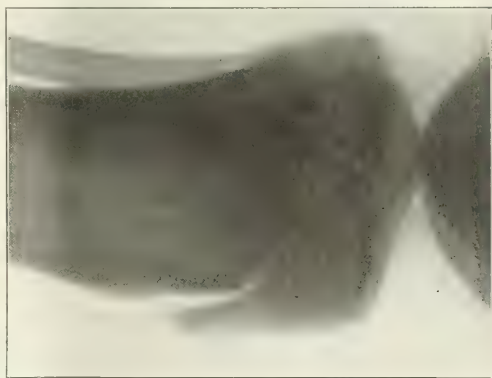
SEVENTH AND VINE STREETS.

TUBERCULOUS GLANDS OF THE NECK CURED BY THE X RAY.*

By MAX STRUNSKY, M. D.,
New York.

This case is of interest because it suggests answers to several questions which are now under discussion concerning this disease, and also because it emphasizes the fact that we have for its treatment, beside the knife, an agent of no mean therapeutic value.

CASE. E. K., aged fifteen years, and her mother came to my office, September 3, 1911. Both were depressed be-



Traumatic separation of the epiphyseal beak of the tibia (Rhodes' case).

cause the young girl was to be operated upon the following morning for tuberculous glands of the neck. Their anxiety, however, was not so much on account of the operation, for two operations had already been performed upon the girl for this condition, and they had accepted the necessity for a third as a matter of course; but the surgeon had frightened them by saying that the neck, which was very much enlarged by the swelling of the parotid and submaxillary lymph glands, would now have to be laid open as well as the neck, which was already marked by unsightly scars left by the two former operations.

History.—In 1906, after the girl had had a slight attack of typhoid fever, the glands in her neck began to enlarge. During the first and second years, the enlargement progressed gradually. In the third year, however, the swelling grew rapidly, extending around the neck under the chin and down to the armpit.

In the course of the disease, she was treated with salves of iodine, ichthyol, etc. She was given arsenic, creosote, and tonics. She also had the fresh air treatment. In 1909, her tonsils and adenoids were removed. In 1910,

*Patient shown to the Hasten Medical Society at the March meeting.

an operation was performed, the incision extending the entire length of the neck. The result of the operation was that she gained eight pounds and her health improved. However, there was soon a recurrence of the trouble. In March, 1911, she received a tuberculin injection which was



FIG. 1.—After two months' treatment with the x ray. It is to be regretted that no photograph was taken of the patient when she first came for treatment. Her condition at that time was very much worse than is shown above.

followed by a positive reaction. In April, 1911, she had a second operation in which two incisions were made, one extending the length of the neck, and the other reaching from the ear to the chin. One large gland was not removed because it adhered to important structures. After she recovered from this operation, she was removed to a farm where she gained five pounds in five weeks. The disease, however, rapidly recurred. The glands became larger and her condition worse than ever before.

Examination.—The patient had a large swelling on the side of the neck and face, extending from the zygoma to the clavicle, and from the occiput to the chin. The occipital, parotid, submaxillary, and cervical lymph glands were enlarged. Some of the glands were hard and movable under the skin, while others were matted together and suppurating, as was evident from the sinus which was situated behind the ear and was discharging thick yellow pus.

Although I was convinced that at this stage of the disease nothing short of a radical operation could possibly do any good, I advised a trial of the x ray, not because I had the slightest faith in its use in so bad a case, but, impulsively, I wanted to give the patient time to get used to the inevitable.

Treatment with the x ray was given twice a week with a medium tube, three milliamperemetres, twelve inches distance, duration six minutes. In the intervening days, high frequency from five to ten minutes was used. A slight improvement was noticeable at the end of two weeks. The girl's appetite increased, there was a recession of the enlargement, and the discharge of the sinus lessened. From that time on improvement was rapid.

At present there is an infiltration of fat and connective tissue at the place where the enlarged glands were situated, but the glands themselves have disappeared. The sinus has entirely closed,

the patient has gained twelve pounds in two months, and she looks and feels in perfect health. A slight erythema of the face and neck cleared up in a few weeks. Some of the hair that fell off at the temple is growing again.

Price (1) thinks that the x ray cures tuberculous glands by phagocytosis. Friedlander (2), however, has proved by experiments on rabbits that, if the region of the thymus is exposed to the x ray, the thymus will rapidly diminish in size and weight, or, under continued exposure to the x ray, this gland will disappear entirely, leaving in its place a mass of fat and connective tissue, but no sign of true glandular substance, as proved by the autopsy. In some cases the thymus under this treatment becomes fibrous or sclerotic. It is possible, therefore, that the cure of tuberculous adenitis by the x ray is due to the change which the x ray produces in the structure of the lymph glands, inevitably destroying their function. For we have learned of late that it is the functioning of an organ that keeps a tuberculous process alive. This was proved by Ely in joint tuberculosis, where operations to stiffen tuberculous knees cured the trouble, by Hibbs's and Albee's ankylosing operations in Pott's disease, by the insufflation of hydrogen in the pleural cavity for lung tuberculosis, which has been done extensively of late, and by the fact, which has long been recognized that tuberculosis is chiefly cured by ankylosis, or adhesions, which are Nature's method of depriving an organ of function.

Friedlander, Heinecke, and others have observed that the x ray affects lymphatic structures which are remote from the part directly exposed to the ray. For example, when the region of the thymus only was exposed, the spleen, lymphatic glands, and other lymph structures decreased in size and shared the characteristic changes of the thymus. This condition was not apparent in my case. Imbedded in a scar, in the root of the neck, is a small, hard, movable lymph gland. Though the face and neck



FIG. 2.—After four months' treatment with the x ray.

were so frequently exposed to the x ray, and the enlarged lymph glands under its influence disappeared entirely, still this gland, which is only a short distance away from the area of exposure, remained the same size.

The first change that was noticed in my patient, after treatment was begun, was that her appetite increased. In looking up the literature of the subject, I find that, in the experience of most observers, the first sign of improvement in patients favorably influenced by the x ray was an increase of appetite. This proves how powerfully the tuberculin toxine interferes with nutrition; for emaciation is characteristic of all forms of tuberculosis, and death from tuberculosis results usually from the loss of weight and exhaustion. On the other hand, as soon as there is an improvement in the tuberculous process, the appetite immediately improves.

In view of the facts, 1, that statistics show that only fifty-seven per cent. of cures follow proper surgical operations for tuberculous adenitis, and that in about twenty-five per cent. of these cases there is a local recurrence; 2, that only the enlarged glands are removed, while small, deep seated but infected glands remain; 3, that scars which are often unsightly follow operations; in view also of the fact that many cures of tuberculous adenitis by the x ray have been reported of late, it follows that a scientific trial of x ray treatment both before and after operations, is imperative in every case of tuberculous glands of the neck.

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24 WEST FORTY-FIFTH STREET.

A NEW THEORY CONCERNING THE ORIGIN OF THE HEART BEAT.

BY BERNARD KAUFMAN, M. D.,
Marysville, California.

Since all vital phenomena and life activities go hand in hand with the pulsations of the heart, this function, its cause, its normal rhythm, and its variations in health and disease have been points of the greatest interest in trying to solve the problem of its origin.

Albrecht von Haller contended that cardiac movements were due to an inherent power of contraction belonging to the heart itself. Senac thought that the heart's activities were due in some way to external influences. When Remak discovered the ganglia at the junction of the sinus and auricle, and Biddle those between the auricle and ventricle, and Ludwig those between the two ventricles, Volkmann evolved the theory of the automatic activity of these cardiac ganglia. A few years after him, Gaskell enunciated the myogenic theory of cardiac activity, and since then the controversy between the myogenic and neurogenic theories has waxed long and warm. One side would predominate, until its opponents brought new facts to light which overshadowed it for the time being.

Notwithstanding all the work done by the two contending camps, the fact still remains that the

origin of the heart beat is previous to the development of either muscle or nerve tissue in the embryo. It is therefore absolutely certain that some other cause must be at work to produce the heart's contraction at this time. "The heart, as has been stated, is developed independently of the blood and bloodvessels; it contains at first a clear fluid, and begins beating before the bloodvessels from the area vasculosa have joined it."¹

Minot² states that all closed vessels in an embryo contain a fluid. At the time when the heart just begins to beat, it is a single, median, straight tube containing fluid. The fact that this vessel contains fluid can be taken as showing that the cells of the tube either secrete into the vessel so formed the fluid found within it, or the fluid contained within it comes from the liquefaction of the cells constituting, or entering into the formation of such vessels.³

At this point it is well to insist that the primitive heart is a living structure, and therefore the exact hydrodynamics of rigid tubes cannot be urged against the ideas to be voiced.

The protoplasm of the embryo is at its highest point of activity, as is seen by the rapidity of cell division which is taking place at this time in the upbuilding of the adult form. Although the cell division is so very rapid at this time, the sum total of characteristics of living protoplasm must be present in each resulting cell, because each of these resulting cells will be the progenitor of myriads which go to form the normal adult. Therefore these cells must possess in its intensest form the characteristics of living protoplasm, viz., excitability and contractability.

The result is that we have a tube whose confines consist of protoplasm in a state of easy excitation, and which contains a fluid which must exert a greater or lesser pressure on its walls. If Heissler's idea is accepted, this tube is constantly secreting into itself the products of liquefaction of the cells constituting the wall. The pressure, therefore, will be gradually increasing due to the accumulating of such liquids until at last the pressure exerted is sufficient to act as a minimal stimulus to the protoplasm, to which it responds by a contraction. On the other hand, if we do not wish to accept this idea, it is a known fact that a constant force acting will produce a rhythmic response. So we would have a constant pressure being exerted on these highly excitable protoplasmic cells, which calls forth the rhythmic response of the heart's contraction.

Since the heart at this time is a single tube, at the site of the first contraction the lumen of the tube would be narrowed, and, acting upon it, the contained incompressible fluid would raise the pressure in the segment nearest to it till the pressure here also was above the point of minimal stimulus for its cells, and a contraction would occur. This would be progressive, therefore, down the heart from segment to segment, and result in a wave of contraction along the tube.

This contraction starting, it will become analogous to contraction under a load, and instead of, as would seem probable, causing the heart beat to be

¹Minot, *Embryology*, p. 224.

²Loco citato.

³Heissler, *Embryology*, p. 136.

cut short, it strengthens it and furthers the contraction. The result is a vigorous contraction of all the cells, and the contained fluid, being incompressible, must find an outlet somewhere. That this occurs we cannot but allow, if we remember what happens in the capillaries in adult life, where the lymph is supplied by the terminal arterioles. Therefore, when the pressure within the heart is raised, the contained fluid is forced through the intercellular spaces which Arnold has shown to exist in the adult, and the pressure within the heart gradually lessens, till all the fluid which the contracting vessel can expel has been thus treated.

Now that the stimulus to contraction has been withdrawn, the cells hasten to return to their normal shape, for by this means only can their maximum amount of nourishment be obtained, and the processes within the cells carried on at their highest point.

This return to the original condition results in a more or less negative pressure within the tube, and the result is that fluid will either be forced back by the difference of pressures within and without the tube, or the cells will secrete the fluid more readily into that side which offers the lesser resistance, or probably both factors will engage in the process. The result of these two conditions will be that the tube will once more begin to fill with fluid.

This filling with fluid will continue till the same result as before occurs, viz., the pressure within will become such that the minimal stimulus is again reached and contraction of the cells of the tube again occurs.

This process continuing, accounts for the rhythmic contraction and relaxation of the embryonal heart.

402½ D STREET.

A FREQUENT SURGICAL ANNOYANCE.

By J. D. BLOOM, M. D.,
New Orleans.

The three distinguishing features of the colon, its size, comparative fixed portion, and the appendix attachment, have much in its developmental defects that is a source of fancied pathology and gives occasion for apprehension. The marked bundles of longitudinal muscular fibres are a distinguishing feature of the colon, and by their diminished length, to that of the bowel, produce sacculations and projections into the bowel lumen. The head of the colon, that is below the ileocecal opening and upon the psoas and iliacus muscles of the right side, is held in position by its peritoneal fixation, which, as a rule, covers it completely, though without a meso-ecum. It is found also in direct contact with the posterior abdominal wall; this is more true of the upper part of the colon. Again, the colon is found in part in the pelvis, where it may be of some length and at the same time movable. Its length averages five or six feet. The embryonic condition, too, sometimes obtains as a result of arrest in development, and it is this which leads to supposition of disease.

The remnant of the omphalic duct known as Meckel's diverticulum, which is situated near the ileocecal valve, represents the early midgut connection with the umbilical vesicle; it is also known that the anal orifice is formed by an involution of the epiblast of the blastoderm. A diverticulum that arises from the midgut, marks the cecum and the appendix. This is originally to the left of the small intestine, but slowly crosses to the right, first beneath the liver, and not until the sixth month of fetal life does it reach the iliac fossæ of the right side, dragging the ascending colon, as it does so, into its normal position. The distinctive physiology and response, in a pathological sense, to disease, is not typical until after the sixth to the tenth year, whereafter ileocolitis is not an entity.

The ascending colon, compared to the cecum, is considered of less size, and Morris refers to what I have frequently observed in cases of others as well as my own, the *sustentaculum hepatis*, referred to as a "fold of peritoneum extending from the right side of the ascending colon gut to the parietes, a little above the level of the highest part of the iliac crest. It forms a shelf upon which rests the extreme right margin of the liver," and of which the cecum may be free, but of impaired activity; this, too, furthers the view of paratyphlitis that is found and can thus be accounted for by this condition.

The cecum may have descended in part or be practically undescended, remaining near the umbilicus, or under surface of the liver. With the varied character of its functioning as a receptive, absorptive, and expulsive organ, its pathology is equally modified by the anatomical position. From these variations in its anatomical relations, a cecal infection may ascend to the tissue about the right kidney or even the umbilical region.

In origin, the appendix is from the cecum apex and so may remain, yet by growth of the right half of that organ in excess of the left, the appendix is displaced, to the left, to one of two positions: to an attachment to the inner half of the cecum, or below the cecal junction with the ileum. The cecum may remain symmetrical in a square shape, the appendix arising in the middle, between its bulging roundness, and a retrocecal or subcecal cavity may exist with a hernia of the appendix within it.

The length of the appendix varies from one to nine inches, and its lining membrane, which is continuous with that of the bowel, is said to undergo with advanced age a process of obliteration. Its lumen enters into a valvelike formation, the valve of Gerlach, at its orifice into the bowel which narrows the channel; additionally, it has an incomplete mesentery. The possibly altered position of an appendix, that is, many in the true intraperitoneal form, can be appreciated, as well its extraperitoneal position, from the small percentage where the posterior cecal surface is in contact with the posterior abdominal wall. The ascending colon is in relation to the anterior surface of the kidney. An essential thought in diagnosis in distinguishing a bulging mass, is its nearness to the gallbladder fundus, as this organ is commonly found with adhesions; and, too, accumulated fecal matter simulates active disease.

McBurney's point is considered, measurably, as the base of the appendix organ. The appendix is in essential structure the same as the cecum. The mucous membrane is said to be quite noticeable in its aggregate of tissue that is lymphatic, tonsillike, and which abounds. It is also mentioned by some that this tissue even associates conditions alike of gouty or of rheumatic nature. The lining membrane is the source of the mucus found in the canal. Bryant has dealt with the canal contents, and cites out of 124 autopsies no foreign bodies, as seeds, stones, etc., having been found, and in no instance were there other than fecal substances or results of inflammation. He found those between the ages of thirty and fifty years, the period of life in which some material of the kind is most frequently found. Circular muscular fibres alone are found in the organ and of some degree of development; the longitudinal fibres continue on its outer side from the cecum above. A remnant of the Vitelline duct in Meckel's diverticulum, that sometimes exists near the ileum attachment to the caput coli, has a concomitant consideration of pain in the right umbilico-inguinal region, and in the lacking acuteness of the history and afebrile nature of an attack. To be reasoned with is a knowledge of visceral function that is restrained or unrestrained, that operative bowel interference either will minimize, or, by scar tissue formation, bolster up in removing an appendix that is of some purport, in that to the cecum it "follows every turn."

1215 MAISON BLANCHE BUILDING.

SPUTUM EXAMINATIONS AND TUBERCULIN TESTS AT THE GOUVERNEUR HOSPITAL TUBERCULOSIS CLINIC.*

By MAX M. FLADEN, M. D.,
New York.

Assistant Physician, Gouverneur Tuberculosis Clinic

SPUTUM EXAMINATIONS.

The board of health, by cooperating with us in the general crusade against tuberculosis, has been rendering us extremely valuable assistance in many forms, and one of the most important is the examination of sputum. Although the diagnosis is generally made before the result from the board of health examination arrives, still it often aids in reaching a diagnosis in an obscure case, or verifying a previous one.

After the physical examination in a new case, the patient is given one of the health department sputum jars, and directed not to open it until the morning of the next visit to the clinic, when he is to expectorate into it and return the jar and contents to the clinic. The jars are collected by the department of health, and the report of the examination made in the health department laboratory is mailed to the clinic and entered on the patient's chart. From the opening of the Gouverneur tuberculosis

clinic, in October, 1903, until October, 1910, the clinic reported to the department of health, as positive, 1,220 cases. Of these the sputum was examined in 886; in 344, for various reasons, no sputum was obtainable. Of the 886 cases 359 (40.5 per cent.) gave positive sputum and 527 (58.3 per cent.) negative. In a certain number of these cases, examinations were repeated. Of the 886, 178 were examined a second time, and of these thirty-six (20.2 per cent.) were positive, and 142 (79.7 per cent.) negative; of the 178, forty were examined a third time, and of these three (7.5 per cent.) were positive and thirty-seven (92.9 per cent.) negative; and of the forty, seven were examined a fourth time and one (14.3 per cent.) was positive and six (85.7 per cent.) were negative.

These repeated examinations were not confined to the negative cases; thirty positive at the first examination showed on the second examination twenty-one (seventy per cent.) positive and nine (thirty per cent.) negative; and out of the 148 negative at the first examination, and submitted to a second, fifteen (10.2 per cent.) were positive; of five specimens positive on the second examination, two (forty per cent.) were reported positive on the third, and three (sixty per cent.) negative; of the seven negative on the third examination, one was positive, and six negative, on a fourth examination.

Of the 1,220 cases reported to the department, twenty-six were reported on the day the patients first entered the clinic; 1,088 were reported during the first month's attendance; sixty-four were reported in from one to three months; twenty-eight in from three to six months; nine in from six to twelve months from the time of entrance to the clinic, and five were not reported definitely until they had attended the clinic one year; of the 359 cases in which the sputum showed tuberculous bacilli on the first examination, 145 were reported before the report from the department of health was received at the clinic; the fifteen whose sputum showed at first examination no tuberculous bacilli, but showed them on the second examination, were reported to the department before the positive report was received at the clinic.

TUBERCULIN TESTS.

The tests employed in the Gouverneur tuberculosis clinic have been the ophthalmic or Calmette, and the cutaneous or von Pirquet. They have been applied only to cases which on the first examination seemed of uncertain diagnosis. Autopsies are not obtainable, and patients frequently move from the district, so that it is impossible to know with certainty the final result in many cases. The technique of these tests is as follows:

For the ophthalmic test, one drop of a one per cent. alcoholic solution of Koch's old tuberculin is instilled into one eye with a sterilized pipette. The reactions have been regularly mild. In one case, however, there was a somewhat severe conjunctivitis, and, on account of reported accidents elsewhere, the test is no longer used at the clinic.

For the cutaneous test, a small area of the flexor surface of the forearm is cleaned, and two scarifications are made with a needle, about two inches apart. On one a drop of a twenty-five per cent.

*Presented at staff meeting of Gouverneur Tuberculosis Clinic, February, 1911.

aqueous dilution of Koch's old tuberculin is placed, and the scarification continued through it. The two areas are covered separately with aseptic gauze.

The tests were applied in 134 cases between December 1, 1907, and November 1, 1910. Of these 134 patients, seventeen disappeared before a diagnosis could be made; the clinical diagnosis finally reached was that of the remaining 117; fifty-three were actively tuberculous and sixty-four nontuberculous; of the fifty-three tuberculous cases, four gave positive ophthalmic and cutaneous reactions, and twelve gave negative ophthalmic reactions. Of the sixty-four nontuberculous cases, seven were positive to ophthalmic and cutaneous, and thirty-two were negative to both tests. Taking the test singularly, the ophthalmic test was positive in twenty-four out of the fifty-three tuberculous cases; negative in twenty-nine. The cutaneous was positive in sixteen; negative in thirty-seven of the tuberculous cases; when applied to the sixty-four nontuberculous cases, the ophthalmic was positive in ten and the cutaneous in twelve.

It has been thought that these tests are more useful in infants and children than in adults, and dividing the cases according to age it has been noted at our clinic that the ophthalmic case was positive in sixty-six per cent. of the adults later considered tuberculous, and in twenty-five per cent. of the adults later considered nontuberculous. In children the same test was positive in eight per cent. of those later regarded as tuberculous, and twenty-eight per cent. of those later regarded as nontuberculous. In infants it was positive in sixty-six per cent. of those later regarded as tuberculous, and in twenty-five per cent. of those later regarded as nontuberculous. The cutaneous test was positive in twenty-eight per cent. of the tuberculous adults and forty-two per cent. of the nontuberculous adults. It was also positive in fifty per cent. of the tuberculous children and twenty-one per cent. of the nontuberculous children; and in sixty per cent. of the tuberculous infants and twelve per cent. of the nontuberculous infants. The greater value of the test in infants is manifest. Both tests were negative in twenty-two per cent. of the cases later thought to be tuberculous and in fifty per cent. of those later thought to be nontuberculous. These tests were both positive in seven per cent. of those later thought to be tuberculous, and in fourteen per cent. of those later thought to be nontuberculous. The greater significance of the tuberculin test when negative, than when positive, is also obvious.

The time at which a positive ophthalmic reaction was noted in the tuberculous cases was twenty-four hours in sixteen, forty-eight hours in five, and seventy-two hours in three; in the nontuberculous cases it was noted in twenty-four hours in four cases, in forty-eight hours in two cases, and in seventy-two hours in two cases.

The cutaneous reaction was noted in the tuberculous in twenty-four hours in eight, in forty-eight hours in three, and in seventy-two hours in nine cases, and in the nontuberculous in twenty-four hours in one, in forty-eight hours in three, and in seventy-two hours in three.

62 EAST THIRD STREET.

Correspondence.

LETTER FROM EDINBURGH.

The Late Dr. Andrew Wilson; an Appreciation.—Honor for Sir William Turner.—The Queen in an Aberdeen Hospital.—New Professor of Midwifery in Aberdeen.—Death of an Edinburgh Doctor.—The British Association at Dundee.

EDINBURGH, September 30, 1912.

The death last month of Dr. Andrew Wilson, F. R. S. E., leaves a blank which will not easily be filled. Doctor Wilson, though he did not practise medicine, was very popular as a scientific and medical lecturer and writer, being well known for his popular health lectures and his bright articles in the lay press. He was one of the most gifted lecturers the writer has ever listened to—Doctor Wilson being his earliest tutor in natural science—and many pleasant memories cling around the name. Wilson could hardly be called a scientific man; he contributed nothing to scientific progress, but as an exponent to students and to the laity he was *facile princeps*. His extreme lucidity and apt illustration, combined with well high perfect elocution, made many a knotty point clear, and many a student is indebted to his lectures for valuable help. He had a keen sense of humor, and many a good story has he told from his own experience as a means of enlivening his lectures. One must suffice. On one occasion he was troubled with a chairman of the kind well known to lecturers—the man who wants to air his knowledge on the subject. This chairman introduced Doctor Wilson to lecture on The Heart and the Circulation of the Blood in the following words, which had evidently been inspired by an encyclopedia: "Ladies and gentlemen, it may interest you to know something of the wonderful discovery of the circulation of the blood. This circulation, I may tell you, was invented by a party of the name of Harvey. I can't just say at this minute who Harvey was" (the encyclopedia had evidently failed in its mental digestion), "but, if I rightly recollect, he was the same party who wrote the *Meditations among the Tombs* and discovered Harvey's sauce for fish."

The German emperor has been pleased to confer on Sir William Turner, K. C. B., M. D., principal of Edinburgh University, the insignia of Knight of the Royal Prussian Order Pour le Mérite in the Department of Science, in recognition of his contributions to the science of anatomy. The number of knights of this order is strictly limited. In 1885 it was conferred on Lord Lister, and since then only seven Englishmen, including Sir J. D. Hooker, Lord Rayleigh, and Sir William Ramsay, have been so honored. The death of Lord Lister having caused a vacancy, Sir William Turner has been selected to fill it.

Dr. Robert Gordon McKerron has been appointed professor of midwifery in Aberdeen University in place of Professor William Stephenson, who has resigned. Doctor McKerron was Doctor Stephenson's assistant; he is an Aberdeen graduate and well known in the city and district, and the appointment will be a very popular one.

Dr. David George Davidson, a well known Edin-

burgh practitioner, has just died while on holiday in the west of Scotland. Doctor Davidson was a prominent man in the territorial forces; he was a frequent contributor to medical literature, and his brothers are all prominent members of the clerical and teaching professions. His funeral was a military one, and was very largely attended.

The annual meeting of the British Medical Association has just been held at Dundee. The presidential address of Professor Schäfer, of Edinburgh University, on the Origin of Life, has already appeared in print the world over and reference need not be made to it here, except to say that it has focused popular attention on this subject and the lay newspapers have been filled with fatuous effusions from unscientific scribblers dealing with life in its various aspects. This, however, is the "silly season," for parliament is not sitting, and newspaper editors are glad of copy, and publish anything that comes their way. The only paper of medical interest was one by Dr. Leonard Hill, who opened the proceedings of the physiological section with an address full of practical hints on how to keep healthy. Modern civilization, he remarked, had withrawn many of us from the rigors of Nature. Cold was not comfortable; neither was hunger. Therefore, we were led to ascribe many of our ills to exposure to cold, and sought to make ourselves strong by what was termed good living. "I maintain," said Dr. Leonard Hill, "that the bracing effect of cold is of supreme importance to health and happiness, that we become soft and flabby and less resistant to the attacks of infecting bacteria in the winter, not because of the cold, but because of our excessive precautions to preserve ourselves from cold, that the prime cause of 'cold' or 'chill' is not really exposure to cold, but to the overheated and confined air of rooms, factories, and meeting places."

LETTER FROM LONDON.

Meeting of the British Association for the Advancement of Science.—National Insurance Act.

LONDON, ENGLAND, October 3, 1912.

The British Association for the Advancement of Science has just concluded its eighty-second meeting, held at Dundee. There was an attendance of 2,500, about half of whom were members and the others visitors. The presidential address was delivered by Professor Schäfer, professor of physiology at the University of Edinburgh. (See editorial article in our issue for September 28th, page 646.)

In moving a vote of thanks to the president for his address, Lord Provost Urquhart announced a gift of £10,000 to the funds from Mr. J. K. Caird, a jute manufacturer of Dundee, who is a vice-president of the association. Other interesting papers were contributed by Professor Max Verworn, on the Physiological Basis of Memory and Abstraction; by Professor J. H. Milroy, on Pulmonary Gaseous Exchange in Apnea; by Dr. Edridge Green, on Sight Testing and Color Blindness, and by Dr. Leonard Hill, on The Influence of Muscular Exercise and Open Air on the Bodily Functions.

Nothing further has occurred to modify the existing attitude of the medical profession toward the

insurance act, though the regulations to be shortly issued by the insurance commissioners for the working of the act may contain certain clauses altering the present state of affairs. It is fairly certain that the commissioners will approve of some increase of the capitation fee. It is thought that the amount will be eight shillings and sixpence for each insured person per annum, this fee to include medicine. If this was coupled with the recognition of an income limit of £2 a week for insured persons, the probability is that the medical profession, through the British Medical Association, would consent to work the act. But, judging from his statements in various places, Mr. Lloyd George is strongly opposed to the income limit, and on this account the outlook for an agreement is not very hopeful. In the meantime the British Medical Association have got ready a plan for a Public Medical Service to be worked by the medical profession, based both on a capitation system, and alternatively, of payment by attendance. If the report of the commissioners destroys the last chance of an agreement between the government and the profession, the machinery for organizing this Public Medical Service will immediately be set in motion.

Therapeutical Notes.

X Ray Treatment of Tuberculous Adenitis.—Bruneau de Laborie, in *Bulletins et mémoires de la Société médicale des hôpitaux de Paris*, May 9, 1912, praises highly the x ray treatment of tuberculous lymph glands, laying stress on its certain and prompt action, its harmlessness, and the good cosmetic results it yields. Where the glandular involvement is in the early stage, with simple enlargement and increase of the lymphoid tissue, one application alone is in some instances sufficient to cause complete disappearance of the gland. Sometimes, on the other hand, the first irradiation produces further enlargement of the gland; subsequent exposures, however, bring about the usual reduction in size, and six or seven sittings, on an average, suffice to give durable results.

Where caseation has already begun, x ray treatment often brings about rapid softening of the gland, which should be evacuated by simple puncture. In these cases the treatment is less certain in its results and necessarily of greater duration than in the incipient class, but is none the less well worth a continued trial.

Irradiations are given by the author every two weeks, except in the case of tracheobronchial adenitis, where, since the rays can be applied alternately from the anterior and posterior aspects of the thorax, weekly sittings are given. If sinuses are present the first two or three treatments are given without the interposition of a filtering screen; in all other circumstances a screen of aluminum, 0.5 mm. thick is used. The amount of rays administered is measure with Sabouraud's pastilles, four H. units at least being given, but five units never exceeded. When, after several consecutive sittings, the skin shows a slight reddening, the treatment is stopped for a month; in this way, the author finds, x ray dermatitis may regularly be avoided. A per-

forated glass or leaden shield is used to protect the skin surrounding the region treated, but the opening in it must be larger than the apparent size of the gland. Twenty cases are reported in which the x ray treatment led to a cure, in some instances over a year ago, without recurrence. Twelve others are under treatment and have shown pronounced improvement.

External Treatment of Psoriasis.—Pinkus, in *Medizinische Klinik* for April 28, 1912, states that while the rubbing into the lesions of a strong, simple preparation of chrysarobin (from five to ten or even twenty per cent. in yellow petrolatum) constitutes the most active and prompt measure at our disposal in psoriasis, such treatment is only possible where subsequent marring of the skin surface is of no consequence. Weak ointments containing only from one to 1,000 of chrysarobin are therefore now often used, causing much less local irritation and pigmentation. In ambulant cases that cannot be kept under close supervision, the concentration of chrysarobin used should be between one to 1,000 and one to 100, as in the following preparation:

R Chrysarobin, 0.1 to 1.0 gramme;
Zinc oxide,
Talc, of each 15.0-20.0 grammes;
Petrolatum enough to make 100.0 grammes.
M. ft. unguentum.

Certain regions, especially the extremities, may be conveniently dressed with this ointment. It should be rubbed into the diseased patches with a brush, a broad piece of lint laid over, then cotton and a clean bandage.

Often more effective than the foregoing plan, though time consuming, is the use for a short period of a strong (twenty per cent.) ointment rubbed into the skin with the patient uncovered in a warm room, and in one half hour to two hours carefully removed by wiping first with dry cotton, then with cotton dipped in benzine. This procedure can be carried out daily until the lesions are distinctly reddened, or else on alternate days or even weekly. It is especially suitable for obstinate cases that are resistant to the weak ointments.

Milder drugs, such as ichthyol or salicylic acid, may be used in ointments in combination with chrysarobin. Ichthyol diminishes the inflammatory reaction to chrysarobin, but is an additional factor in soiling the garments. Chrysarobin may also be applied in solution in collodion, which is allowed to dry and covered with simple collodion, gauze, or a bandage.

As a substitute for chrysarobin, pyrogallol is effective, especially in widespread, not too severe psoriasis, with small lesions:

R Pyrogallol, 5 grammes;
Yellow petrolatum, enough to make 100 grammes.
M. ft. unguentum

It blackens the skin, but does not have the deeply penetrating, staining power of chrysarobin. It should not be used on very large patches, and is contraindicated in the presence of albuminuria. The following combination acts much less powerfully and is not darkened so readily by exposure to light and air as the simple pyrogallol ointment. It is therefore useful in psoriasis involving the scalp (provided the hair is dark), being, in fact, the best

preparation of all for severe psoriasis in this situation:

R Pyrogallol, of each, 5 grammes;
Salicylic acid,
Yellow petrolatum, enough to make 100 grammes.
M. ft. unguentum.

Oleum rusci and other tar preparations can also be used, but are very disagreeable as to odor.

Salicylic acid, on the whole, acts only feebly. It is useful for the removal of scales when the eruption first appears, as it does not irritate the skin, and may also be employed for a few days where chrysarobin has acted too strongly, until the skin has desquamated and resumed approximately its former color. It may be employed as follows:

R Salicylic acid, 2 to 5 grammes;
Yellow petrolatum, enough to make 100 grammes.
M. ft. unguentum.
R Salicylic acid, 2 to 5 grammes;
Hydrated wool fat, 15 grammes;
Lead oxide plaster, of each, 40 grammes.
Petrolatum,
M. et ft. unguentum.

R Salicylic acid, 5 grammes;
Pyrogallol, 1 to 2 grammes;
Castor oil, 5 to 10 grammes;
Brandy, enough to make 200 grammes.
M. Sig.: To be rubbed into the diseased areas on the scalp once or twice daily.

Useful for lesions on the face and scalp is the following preparation:

R Liquefied phenol, 1 gramme;
Balsam of Peru,
Ammoniated mercury, of each, 1 to 5 grammes;
Yellow petrolatum, enough to make 100 grammes.
M. ft. unguentum.

Treatment of Lupus vulgaris.—J. H. Sequeira, in *Proceedings of the Royal Society of Medicine* for June, 1912, reports the case of a young girl suffering from extensive lupus of the hands, forearms, face, nasal cavities, and palate, in which the Pfannenstiel method of treatment was employed with gratifying results. The ulcerated areas in the nose were treated by packing with gauze, which was kept constantly moistened with a ten volume hydrogen peroxide solution; the gauze was removed only during sleep. At the same time thirty grains of sodium iodide were given daily in divided doses. The improvement was such as to induce Sequeira to dress the forearm and wrist also with peroxide; similar benefit resulted.

Treatment of Chronic Urticaria.—Weill, Gardère, and Goyet, in *Lyon médical* for July 14, 1912, report the case of a child of eleven years, subject for four years to chronic urticaria and suffering daily from a generalized eruption, in which a subcutaneous injection of 0.5 gramme of sodium nucleinate in ten c. c. of normal saline solution led to a marked improvement lasting over two weeks. The leucocyte count showed within fourteen hours after the injection a rise from 8,500 to 20,400. This number underwent rapid reduction to normal in the succeeding days, but the beneficial effect on the urticaria persisted much longer. The authors believe the nucleinate prevented the urticarial manifestations by overcoming toxins in the system through increase in the number of leucocytes and stimulation of their phagocytic function.

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CHARLES E. DE M. SAJOUS, M. D., LL. D.,
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NEW YORK, SATURDAY, OCTOBER 12, 1912.

SIR THOMAS OLIVER'S ADDRESS AT THE WASHINGTON CONGRESS.

A particularly noticeable feature in the admirable address of Sir Thomas Oliver, on Dust and Fume as Foes of Industrial Life, delivered on September 24th at the Congress of Hygiene and Demography in Washington, is the extent to which he draws on the experience of the United States and the work of American hygienists for illustrations of his argument and for data for his conclusions. In regard to the prevalence of the increase of industrial accidents and diseases, he cited Professor M. Allen Starr as authority for the fact that in 1910 there were 3,500 deaths in the United States from industrial accidents. Again, citing Mr. Walter L. Fischer, of the Department of the Interior, to the effect that during the past ten years 30,000 persons have been killed, and 60,000 injured in the mining industry alone,—many from accidents that could have been prevented—he points out that assuming that of the 33,000,000 males and females engaged in industry in the United States, forty per cent., or about 13,200,000 persons are invalidated every year for an average period of 8.5 days, the cost to the nation from occupation diseases amounts to \$772,892,860.

Defining dust according to the common acceptation of the term as matter in a state of fine sub-

division (though, as Sir Thomas pointed out, it is something more than that), he differentiated smoke and fume from dust, in that they are products of heat. He further differentiated them from one another in this respect, that smoke is the outcome of incomplete combustion of hydrocarbons, such as coal, wood, oil, etc., while fume is the gaseous form of metals, nonmetals, and their compounds, and their return from the gaseous to the solid state, as seen, for instance, in the deposit in the flue of a lead smelting factory. Smoke, on the other hand, is hydrocarbon which has not completely combined with oxygen to become gas.

With regard to the greater harmfulness of town dust over country dust, he refers to the fact that a few years ago about one third of the 5,000 persons employed in street cleaning in New York became infected with tuberculosis, notwithstanding that only those were employed who passed a medical examination. As a result of the introduction of fresh methods, according to the experience of a large insurance company of America, of 145 deaths of street cleaners from all causes, twenty per cent. were due to pulmonary tuberculosis, and eighteen per cent. to other respiratory diseases.

He lays under contribution the observations of Doctor Soper, of New York, with regard to the dust of railway tubes, as to the large proportion therein—61.3 per cent.—of iron, mostly in metallic form, organic matter amounting to 21.9 per cent., silicate to 15.6 per cent., and oily material 1.2 per cent. The presence of the great amount of iron in platelets is a particular source of danger to those engaged for hours in the tubes.

Sir Thomas Oliver congratulated Dr. John B. Andrews, secretary of the American Association for Labor Legislation, who had cabled him "the joyful news" that the United States Senate had passed a bill imposing such a prohibitive tariff on the manufacture of white phosphorus and the matches made from it as would surely put a stop to it, while the importation of such matches was already prohibited by law. The suppression of the white phosphorus match and the gradual extinction of phosphorus necrosis demonstrated not only the beneficent accomplishments of legislation, but also that when changes of manufacture become imperative from the viewpoint of health, human skill and ingenuity can rise to the occasion.

Another point on which American sanitation came in for praise at his hands was the demonstration by Mr. Frederick Hoffmann, in his "masterly article" on the Mortality from Consumption in Dusty Trades (*Bulletin of the Bureau of Labor*, 79, November, 1908), of the relation between dust, inflammatory affections of the lungs, and tuberculosis.

The speaker ended by advocating the adoption by all countries of a scheme of compulsory notification, and agreement as to their definition and causation, as a first important step toward establishing uniformity in the method of collecting and arranging statistics.

TROPICAL SUNLIGHT AND ITS EFFECT UPON THE WHITE RACE.

Since the publication of Lieutenant Colonel Woodruff's well known book on the *Effect of Tropical Light on White Men*, a good deal of attention has been paid to the subject of blonds and brunettes. Doctor Woodruff's first book, which appeared in 1905, was followed in 1909 by his *Expansion of Races*, in which he also discussed this question; besides several essays by the learned author on this important topic have appeared in the medical literature. He tried to prove that the blond type, as represented in the regions of the Baltic sea and transplanted from there to our country, is not as well adapted to the tropical life, especially in our insular possessions in Asia, as the brunette race found around the shores of the Mediterranean and in its emigrated representatives in our own country.

To prove or disprove these assertions experiments have been made and observations collected in the Philippine Islands among the civilian officers, United States soldiers, and Philippine constabulary, the results of which were published in the *Philippine Journal of Science*, the last essay being from the pen of the late Doctor Freer in the February number of that journal. The conclusions as they appear here are that a climate such as is found in the Philippines, which islands are surrounded by the sea, modifying the extremes of temperature, and where a large proportion of cloud exists, is not by any means deleterious to the white man if he takes ordinary precautions which are not as elaborate as those he would take in a northern climate to keep out the cold. The differences in maximum insulation compared with temperate regions are not great, if any, and many ways occur in which the effect of the sunlight is greatly modified. "The individual needs only to seek the shade to avoid any deleterious results from even the greatest insulation," but if he must be exposed to the sun, as is the case with a soldier under march, he can be given adequate protection by light, preferably white clothing and helmets. It must be also remembered that perspiration is a great factor in keeping men normal under these conditions, and that during exercise in hot weather much water is lost during the day. In the Philippines the nights are rarely too hot for comfort and they may even

be quite cool. In short, the climate of our Asiatic possessions, according to these reports, does not seem to be deleterious to white man if proper precautions are taken.

In the present issue of this JOURNAL, Lieutenant Colonel Woodruff again defends his theory, taking up the report of the board as published in the Philippine journal. His article carries with it the strength of conviction and is in every respect a worthy presentation of the very important subject. He warns against misstatements and conclusions reached by wrong reasoning, the adoption of which would result in great losses to our government of life and money.

THE TREATMENT OF MUSHROOM POISONING.

Desfosses, in reply to inquiries from subscribers to *Presse médicale* concerning the proper treatment of poisoning from mushrooms, many cases of which are reported in France at this time of the year, writes in the issue of that journal for September 18th, first, that it is useless to give emetics in the case of late development of symptoms in from ten to thirty hours after ingestion of the fungi. By that time the mushrooms have been thoroughly digested and the products carried into the blood, so it is unwise to deplete the patient's strength by causing vomiting. Stimulants are the first thought, strong coffee, ether on sugar, hot bricks, and friction to the body. Second, Desfosses advises a purgative to empty the lower part of the digestive tract. Castor oil is the best agent, as it does not dissolve the toxic principle of the mushroom; if there is no oil at hand, sodium or magnesium sulphate may be used, or any strong mineral water. The third indication is to facilitate diuresis by the administration of large quantities of milk; tisanes of couchgrass or borage, familiar to every French family, are also advised for this purpose.

Fourth, the writer counsels meeting various untoward symptoms as they may arise. Vomiting would be met by ice, seltzer water, *potion de Rivière* (solution of potassium citrate), chloroform water with cocaine; a failing heart would be braced by injections of caffeine, camphorated oil, or sparteine sulphate. Enteritis, if acute, would indicate enemata of infusion of marshmallow, or hot water containing laudanum. Delirium would obviously require sedatives, and collapse stimulants. Perseverance is the watchword, as the prostration from this form of poisoning sometimes lasts for weeks.

Where, on the other hand, the symptoms are immediate and acute, care should be taken not to administer elixirs or cordials or anything likely to

promote absorption or diffusion of the poison. Vomiting should be induced at once by tickling the throat with a feather or the finger; if this does not succeed, give a dose of soapsuds or large quantities of tepid milk. The stomach pump may be used. Hot applications and friction to the body are of high importance, as well as inhalations of ether or even vinegar.

Our readers can easily imagine substitutes for any of the remedies mentioned, which are peculiar to French practice. Desfosses concludes his article by instructions to search out, for scientific reasons, the nature of the mushroom suspected, by interrogation of the cook, of those who gathered it, etc. Microscopical examination of the matter vomited, of the dejecta, and of any remaining portions of the mushroom is also in order.

QUININE AND MALARIA IN ITALY.

As is well known, Italy was considered next to Greece, the country in which malaria was most prevalent. It has been stated that at the beginning of the century Italy had each year about 2,000,000 people suffering from malaria with about 15,000 deaths. The loss to the government and to the inhabitants was so great that energetic measures were taken to stamp out the disease. The medical treatment consisted in free distribution by the government of quinine, at a nominal cost, either direct to the patients or, in most cases, to communities, who then distributed it free to the poor. The price of the bisulphate is about two cents or a cent and a half for the gramme, and still the government's factories show quite a large surplus; for 1902, the first year of the government sale, it amounted to \$7,000; for 1903, \$120,000; for 1907, \$130,000, etc. While in 1902 there were 9,908 deaths, this number has steadily decreased to 3,533 in 1909; in 1902 there were 36.52 per cent. of the inhabitants sick with malaria, and in 1909, 6.96. Not quinine alone has lowered the number of malaria cases as well as of the deaths, but prevention has done much, especially through the drainage and cultivation of great areas of the Roman Campagna, the Pontine swamps, the swamps in Sardinia, Calabria, etc. This example of Italy has also induced the governments of Greece, Crete, Bulgaria, and Egypt to fight malaria.

PROPOSED PERMANENT HEADQUARTERS FOR THE AMERICAN NATIONAL RED CROSS SOCIETY.

The commandery of the State of New York of the Military Order of the Loyal Legion of the United States, has undertaken to furnish the funds for a National monument in the city of Washington

to the memory of the loyal women of the civil war. A bill appropriating \$400,000 for a site for this monument, which is to take the form of a memorial building, was passed unanimously by the Senate on August 12, 1912, and similar action by the House is a foregone conclusion. Interest to our profession lies in the fact that this building is to become in perpetuity a headquarters for the American National Red Cross Society, upon which, in the words of President Taft, who has highly commended the project, fell the mantle of the sanitary commission of the civil war.

WORK OF THE PREVENTORIUM.

The preventorium at Farmingdale, N. J., the pioneer establishment of the kind, which we described in our issue for May 4, 1912, has now 158 children under its care, instead of the forty-four to whose needs it was formerly limited. The present enlarged buildings were erected at a cost of \$150,000, and although the institution is free from debt, it can use much more than the \$17,000 which is all that has been pledged so far. There is but one class of members who pay dues from one dollar up to \$1,000, and the worthy ambition is to have 10,000 such members. A good word should be spoken for the preventorium by our friends when they have the right kind of listener, for it represents the last word in medical science—effective prophylaxis. Prophylaxis does not appeal to the popular imagination; hence the necessity for constant tactful emphasis thereupon.

MORTALITY STATISTICS FOR 1909.

The Bureau of Census has published the mortality statistics for 1909, being the tenth annual report, containing also the revised rates for the intercensal years 1901 to 1909, based upon the census of 1910. As usual it contains the compilation of deaths in the registration area of the United States during 1909. It is interesting to note that the registration area embraces now 56.1 per cent. of the total population of the country, and the number of deaths for this area is given as 732,538, 398,597 males and 333,941 females, the ratio being 14.4 per mille.

LACK OF MILITARY SURGEONS.

The United States is not the only country in which the army medical department complains of lack of surgeons. From Germany it is reported that at the present time the Bavarian army has a deficit of about thirty-two per cent., while in Prussia the proportion reaches the large number of fifty. The German military authorities hope that with the new law which makes it necessary for a graduate to spend one year after his final examinations in a recognized hospital, there will be many physicians who, to avoid such large additional expense, will enter the army. The French military authorities wish also to increase the number of military surgeons, as they have a deficiency of sixteen per cent.

Medical Law.

VIII. CIVIL MALPRACTICE.

A careful reading of the case of *Johnson vs. Powell*, 123 Pacific Reports 881, illustrates the perilous character, from a legal standpoint, of the practice of surgery, and how this peril is increased by the failure of certain patients to improve when improvement might ordinarily be effected from the treatment rendered.

In this case Mrs. Sly had injured her finger. She called the defendant, a regular practitioner of about nineteen years' experience and who had been her physician for ten years. He arrived about two hours after the injury and found the hand considerably swollen. After an examination he concluded that there was a partial dislocation, also a slight fracture. He undertook to reduce the dislocation in the usual way, and said that when he did so he noticed a distinct crepitus; he then placed splints and bandages on the finger. He visited the plaintiff two or three times at her home, and treated the injured finger when she complained that it was causing her pain. She called at the defendant's office a number of times and was given treatment, but frequently expressed dissatisfaction that greater progress toward recovery was not made. In the meantime she returned to her work as saleswoman in a store, but complained of much pain from the injury.

About five weeks after the injury she discontinued her visits to the defendant and went to a Doctor Stewart, who treated her injury from December until May. Doctor Stewart, upon the trial, testified that he made a careful examination of the finger and that it was not out of joint, nor was it fractured; he said there was little voluntary motion of the knuckle, but that she could move it, although it caused her pain; that the tendons at the joint indicated there had been a dislocation; but his diagnosis was that she was then suffering from a kind of neuritis, or inflammation of the nerves that supplied the finger.

Meanwhile, she consulted Doctor Bowen, a surgeon, who reported that an operation was unnecessary. She also consulted Doctor Hammond, who made a partial examination and advised her to return later, take an anesthetic, and have a more thorough examination, but she did not go back again. About six months after the injury she consulted Doctor Keith, who advised her that there was still a partial dislocation. He placed her under the influence of an anesthetic and stated that he broke up the adhesions which had formed, reduced the dislocation, and that afterward there was more circulation through her finger and that she was able to move and bend it. Inflammation and swelling continued, although she was under treatment with Doctor Keith for months. Finally she consulted another doctor who advised that the finger be amputated, which operation was performed shortly thereafter.

It appears that upon the trial of the action Doctor Hammond stated that there was no dislocation; al-

though Doctor Bowen was not a witness, it appeared that he had reported to Doctor Stewart that he agreed with the latter as to the condition of the finger and that the same treatment should be continued. In fact all of the medical testimony as to the condition of the finger, from the time of the injury until consultation with Doctor Keith, nearly six months after the injury, tended to show that the defendant had properly set the finger and had treated it with ordinary care and skill.

On the other hand, it was admitted that there was a dislocation of the finger in the first instance; that it was stiff and out of position when the bandages were removed, and that it so remained until it was examined by Doctor Keith and his assistant, who testified that the finger was then partially out of joint and that, after the adhesions had been broken and the dislocation reduced, the finger became movable, the circulation better, the swelling subsided, and the finger became more natural in appearance.

At the end of the trial a judgment was rendered for the plaintiff, but upon review of the case by the Supreme Court, the judgment was set aside because of several errors in admitting improper evidence. Among other errors several nonexpert witnesses were allowed to repeat statements made by plaintiff, weeks after the injury, that she had suffered and was suffering great pain. The court in commenting on the admissibility of this character of evidence said:

Testimony as to expressions of a natural and spontaneous character, indicating present bodily pain, is competent as original evidence; but the declarations of an injured party as to his past feelings and suffering, or which are not voluntary exclamations of existing pain and suffering, are mere hearsay, and should be rejected.

A nonexpert witness was permitted to testify in effect that the finger was out of joint and had been properly set by the defendant. As to this character of evidence, the court said:

Nonexpert witnesses could testify as to external appearances and manifest conditions observable by anyone; but whether a surgical operation had been performed with a reasonable degree of skill, learning, and care, such as is ordinarily possessed and exercised by surgeons and physicians in the treatment of their patients, is a question of science, and is to be established by the testimony of surgeons and physicians having special skill and knowledge, and not by unskilled witnesses, who are without training or knowledge as to the injuries sustained, or the art of treating them.

Plaintiff was also improperly permitted to repeat statements which she testified were made to her by Doctor Hammond while examining her hand, with regard to its condition. In commenting upon the admission of this character of hearsay evidence the court expressed itself as follows:

If this practice were permissible, it would only be necessary for a patient, in order to make out a case of malpractice, to procure examination by several physicians, and then repeat the statements and declarations which they made to him. It is safer to call the experts themselves as witnesses, and thus obtain their opinions at first hand, under the sanction of an oath, and, at the same time, afford the adverse party an opportunity to cross-examine them.

X. THE PHYSICIAN AS WITNESS.

In the case of *State vs. Baker*, 135 Northwestern Reports 1007, a criminal case, a physician testify-

ing for the State was permitted to say that a blow which produced a wound upon the head was a "severe" one.

The characterizing of the blow as "severe" was urged before the Supreme Court as an invasion of the province of the jury. Mr. Justice Weaver, in passing upon this point said:

The objection is untenable. The witness was not asked nor did he undertake to state how the injury was inflicted nor what in fact caused it; . . . the witness had shown that he had been called to the relief of the deceased immediately after the injury, and that an examination disclosed a very serious fracture of the skull, which was verified by the post mortem investigation. That the doctor should say that a blow producing such results must have been a severe one was to state the fact which would be apparent to every juror of intelligence, and his statement added nothing to the description which he had already detailed. Whether, as counsel argue, such result might have been produced by a comparatively light stroke with a heavy instrument, or a powerful blow with a light instrument, is a wholly immaterial consideration. Whatever be the truth in that respect, there is no room here for academic argument or speculation upon the varying circumstances under which such an injury might have been received. It is shown without dispute that appellant did strike the deceased upon the head with a stick of some kind, producing the injury from which death ensued, and that the stroke was administered with sufficient force to shatter the victim's skull. Whatever the weight or character of the weapon, and whatever degree of muscular energy employed, the blow could not have been anything less than "severe," and, while it did not require an expert to discover that fact, his statement was clearly without prejudice.

The doctor was further asked: "What would you say as to the character of the weapon or club that was used to produce this fracture you found in the skull?" And over the objection of the appellant he answered: "I believe a blunt or rounded, fairly heavy object—possibly like a whiffletree. That is the most common shape." If the witness was to be interpreted as saying that the blow was administered with a whiffletree, the answer would probably have been incompetent; but such is not his statement. He speaks of a whiffletree merely as an illustrative example of the weapons with which such an injury could have been produced. Testimony of physicians and surgeons as to the nature of the weapon indicated by the appearance of a wound upon the human body is an everyday incident in the trial of persons charged with crimes of violence, and the rule under which it is admitted does not appear to have been violated in this instance.

It also appears from the physician's testimony that a wound was found on Driver's ear, and, upon being asked whether this injury could have been caused by the same blow which fractured the skull, or by another and distinct stroke, he replied that the wound was more probably the result of a second blow. This is said to be incompetent and prejudicial, because no witness claims that more than one blow was struck, and this testimony gave counsel for the State a pretext for arguing to the jury that appellant must have struck deceased while they were still in the barn.

Testimony is not necessarily incompetent, because counsel deduce unwarranted conclusions therefrom. But aside from this obvious generalization, if two wounds were found upon the head of the deceased, we see no reason why the fact should not be shown in evidence, even though no witness saw more than a single blow delivered, or why the possible inference that a blow had been struck before the parties emerged from the barn was not a legitimate matter of argument. True, the wound on the ear may have been received in the fall of the deceased when knocked down by the appellant, or from some cause for which he was in no manner responsible, but its discovery and treatment by the surgeon immediately after the affray was over, makes it fairly a part of the *res gesta* to be given to the jury for what it was worth.

News Items.

Changes of Address.—Dr. Henry C. Becker, to 229 West 105th Street, New York.

Dr. L. A. Clark, from Cambridge, N. Y., to Eagle Bridge.

Dr. Robert C. Whitehead, from Amherst, Va., to Norfolk.

Dr. D. P. Cannaday, from Newcastle, Pa., to Roanoke, Va.

Harvey Society Lectures.—The second lecture in the series will be delivered this evening at the New York Academy of Medicine, at 8:30 o'clock, by Professor G. H. F. Nuttall, of Cambridge University, England. His subject will be Relapsing Fevers.

Examination for Medical Librarian.—Among the positions for which the New York State Civil Service Commission will hold examinations November 2d, is one for medical librarian for the State library, at a salary of \$1,200 to \$1,500 a year. Application blanks must be filed on or before October 25th.

A Medical Society Disbands.—On the evening of October 1, 1912, the Long Island Medical Society disbanded, because of a lack of interest in the meetings, poor attendance, and general apathy. In all, 198 meetings were held, covering a period of twenty-two years. The society was organized, November 6, 1890.

Smallpox in Pittsburgh.—According to the last reports received by the Public Health Service cases of virulent smallpox were still occurring in Pittsburgh. During the week ending September 14th there were reported 18 cases, with 3 deaths, and during the week ending September 21st, there were 14 cases with 7 deaths.

Williamsburgh Medical Society.—The next meeting of this society will be held on Monday evening, October 14th, at Willoughby Mansion, 667 Willoughby Avenue. Dr. Charles E. Nammack, of Manhattan, will read a paper on Mistakes in the Diagnoses of Typhoid Fever. Dr. S. R. Blatters is president, and Dr. William K. Jacobs, secretary of the society.

American Association for the Study and Prevention of Infant Mortality.—At the annual meeting of this organization, held in Cleveland, Ohio, last week, the following officers were elected to serve for the ensuing year: President, Dr. L. Emmet Holt, of New York; president-elect, Dr. J. Whitridge Williams, of Baltimore; first vice-president, Dr. Isaac A. Abt, of Chicago; second vice-president, Dr. Arthur D. Baldwin, of Cleveland; secretary, Dr. Philip Van Ingen, of New York; treasurer, Dr. Austin McLanahan, of Baltimore; executive secretary, Miss Gertrude B. Knipp, of Baltimore. The next meeting of the association will be held in Kansas City, Mo.

Women's Medical Association.—A stated meeting of the Women's Medical Association of New York City will be held at the Academy of Medicine, Wednesday, October 16th, at 8:15 p. m., under the presidency of Dr. Mathilda K. Wallin. In addition to the presentation of patients and the exhibition of pathological specimens, the programme will include two papers on gonorrhea, one by Dr. Lillian K. P. Farrar, in which she will speak of the disease in women, and the other by Dr. Mary Merritt Crawford, on its surgical treatment. There will be a general discussion, among those who will participate being Dr. Eliza M. Mosher, Dr. Sarah J. McNutt, Dr. Gertrude B. Kelley, Dr. Marie L. Chard, and Dr. Anna S. Wilner.

Visiting Lecturers at the Post-Graduate.—Professor H. Strauss, of the University of Berlin, will give a lecture, in German, at the New York Post-Graduate Medical School and Hospital, Twentieth Street and Second Avenue, on Gastric Secretion from the Therapeutic Point of View, on Monday, October 14th, at 4 p. m., and, at the same hour on Tuesday, October 15th, a lecture on The Method and Purpose of Dechloridization in Nephritis. Professor C. von Noorden, of the University of Vienna, will give a series of lectures, in English, at the same institution, on New Aspects of the Pathology and Treatment of Diabetes, and on Diagnosis and Treatment of Nephritis, beginning on Tuesday, October 29th, at 4 p. m., and continuing for four consecutive days, at the same hour. Cards of admission may be had upon application.

Public Lectures on Medical Topics at Morris High School.—By consent of the Board of Education, the auditorium of the Morris High School, in the Bronx, has been placed at the disposal of the Medical Society of the Borough of the Bronx every Tuesday evening, during the months of January, February, and March, 1913, to be used for free lectures to the public on medical topics, with the object of educating the public how to take care of their health, prevent disease and lessen human suffering. Among the speakers will be physicians of national reputation. At the end of each lecture any one in the audience will be permitted to ask questions relating to the subject lectured upon. Several of the lectures will be illustrated by stereopticon views or motion pictures. The committee in charge consists of Dr. Gustave Starke and Dr. Nathan B. Van Eiten.

A Warning against S. P. Hinckley.—Our readers are warned against "Sumner P. Hinckley," formerly of Chicago, Illinois, who solicits life insurance for an important life insurance company of West Virginia, whose agent he asserts himself to be. He has for some time worked a confidence game among the physicians of Illinois, but jumped thence to Omaha, Nebraska, when his methods were discovered. From there he seems to have traveled to New York. His method is very ingenious. He visits a physician whom he engages to become medical inspector for the company at a fixed salary and a certain commission for examinations, but it is necessary that the physician carry a policy in the company. To hasten matters the physician is asked to give his check to Hinckley for dues to the company, which amount, if he should be rejected, would be returned. Hinckley, as a matter of fact, is not employed by the company, which repudiates him and his statements.

Local Milk Regulations.—The board of health at its meeting October 7th, adopted a resolution, the object of which is to greatly strengthen the safeguards surrounding the sale of so called "dipped" or "loose" milk. The resolution will take effect June 1, 1913, after which it will be illegal to sell milk dipped from cans except in approved milk stores under permits from the board of health or in stores in which foodstuffs other than milk products are sold in original packages only. Many of the 14,000 places where dipped milk is sold in the city of New York are grocery stores where many other commodities besides milk are handled and sold in a manner which must necessarily cause much dust. Moreover, the facilities for proper cleansing of utensils, for the protection of the milk from flies, and for proper icing are often very inadequate and in too many cases the room where the milk is sold communicates directly with living apartments. As the enforcement of this ordinance will very seriously affect the business of a great number of small storekeepers, ample time has been given for the adjustment of trade conditions to the new requirement before it is rigidly enforced. Permits to sell milk in bottles will, as heretofore, be issued by the department to all stores having proper refrigerating facilities.

Gifts to Columbia University.—The trustees of Columbia University announce that under the will of the late Augustus W. Openhym an endowment had been established for research work into the cause, prevention, and cure of cancer. The amount of the gift was not made public, but it was said the sum was considerable. If at any time further research into cancer shall no longer be necessary, Mr. Openhym's will stipulates that the income may be used, as the trustees may determine, for research work in any branch of medicine or surgery. The endowment under Mr. Openhym's will is to be known as the Openhym Research Fund, and the terms of the gift are substantially the same as those of the Crocker Research Fund. The authorities of Columbia University plan to combine the two endowments. The Crocker Fund, which amounts to \$1,440,777, has been put under the direction of Dr. William Carter Wood, of the College of Physicians and Surgeons, in West Fifty-ninth Street. The receipt of \$4,300 from other sources to further medical and surgical research is also announced. Mr. Clarence H. Mackay gave \$2,500 for this purpose, the department of materia medica and therapeutics received \$1,800 from an anonymous source, and \$1,000 was given to the department of physiology by a person who wished his name withheld. Beside these gifts, the department of social science received \$1,000 from Mr. Jacob H. Schiff.

The Plague Situation.—According to *Public Health Reports* for October 4th, no case of plague in man has been reported since September 12th, but a plague infected rat was found in Caguas, near San Juan, on September 28th. In California during the week ending September 14th two plague infected ground squirrels were found, one in Alameda county and one in Contra Costa county. A fatal case of plague was reported in Manila during the week ending August 17th, the fifth reported since June 14th. On September 25th plague was found present in the Azores, 8 cases and 3 deaths having been officially reported.

Association of Military Surgeons.—At the twenty-fifth annual convention of the Association of Military Surgeons of the United States, held in Baltimore on October 1st, 2d, and 3d, Surgeon William C. Braisted, of the navy, was elected president, to succeed Surgeon Charles P. Wertenbaker, of the Public Health Service. Other officers were elected as follows: Brigadier General Charles Adams, of the Illinois National Guard, first vice-president; Lieutenant Colonel Jefferson R. Kean, Medical Corps, United States Army, second vice-president; Dr. Rupert Blue, surgeon general of the United States Public Health Service, third vice-president; Major Cecil Stanton, of the Illinois National Guard, secretary, and editor of the association's journal; Major Herbert A. Arnold, of the Pennsylvania National Guard, treasurer. Denver, Colo., was selected as the place for holding next year's meeting. One hundred and fifty delegates attended the meeting, among the foreign countries represented being England, Canada, France, Russia, China, Denmark, and Australia.

Meetings of Local Medical Societies.—During the coming week meetings of medical societies will be held in New York as follows: **MONDAY, October 14th:** New York Ophthalmological Society; Williamsburg Medical Society, Brooklyn; Association of Alumni of St. Mary's Hospital, Brooklyn; Society of Medical Jurisprudence. **TUESDAY, October 15th:** New York Academy of Medicine (Section in Medicine); Triprofessional Medical Society of New York; Psychiatric Society of Ward's Island; Medical Society of the County of Kings, Brooklyn. **WEDNESDAY, October 16th:** New York Academy of Medicine (Section in Genitourinary Diseases); Women's Medical Association of New York City; Medical College Society; Northwestern Medical and Surgical Society of New York. **THURSDAY, October 17th:** New York Academy of Medicine (stated meeting); German Medical Society, Brooklyn. **FRIDAY, October 18th:** New York Academy of Medicine (Section in Orthopedic Surgery); Clinical Society of the New York Postgraduate Medical School and Hospital; New York Microscopical Society; Brooklyn Medical Society; Alumni Association of Roosevelt Hospital.

Two Hundred Physicians Pledge Their Bodies to Science.—At a meeting of the Associated Physicians of Long Island, held on Hoffman's Island, Saturday, October 5th, two hundred members of the organization adopted a resolution by a unanimous vote whereby they pledged themselves to give their bodies over at death to autopsy for the advancement of medical science. The resolution was in the form of a report prepared by a special committee composed of Dr. William A. Browning and Dr. H. C. Delatour, of Brooklyn, and Dr. L. N. Lanehart, of Hempstead, who were appointed at a previous meeting of the society when the matter was discussed. The understanding is that each member of the association who accepts the terms of the agreement must direct his heirs or executors to allow an autopsy to be performed on his body. It is clearly understood that those who enter into the agreement are not consigning their bodies to the dissecting room, as the operation can be performed at the home of the deceased. The aim of the association is to educate the public to a better understanding of the value of autopsies and the necessity of a more general offering of bodies for post mortem examinations in order to ascertain the real causes of death. The physicians who have voluntarily pledged their bodies for autopsies are all men of high standing in the profession, among them being Dr. William B. Brinsmade, Dr. Hubert Arrowsmith, Dr. Elias H. Bartley, Dr. H. Beekman Delatour, Dr. W. F. Butler, Dr. James Cole Hancock, Dr. C. B. Bacon, Dr. S. F. Anderson, Dr. H. C. Anderson, Dr. J. H. Barry, Dr. Frank Overton, Dr. Henry M. Auger, and Dr. P. E. Brockway.

Pith of Progressive Literature.

CORRESPONDENZ-BLATT FÜR SCHWEIZER AERZTE.

September 1, 1912.

1. E. LUDWIG: General Congenital Hydrops.
2. PAUL DEUS: Peculiar Case of Carbon Dioxide Intoxication (Concluded).
3. DUMONT: Intramuscular Ether Anesthesia.
September 10, 1912.
4. THEODOR KOCHER: Results of New Method of Treatment in Tetanus.
5. J. BERNHEIM-KARRER: Nursing and Inability to Nurse.
September 20, 1912.
6. F. DE GUERVAIN: Röntgenological Examination in Diseases of Stomach and Intestines.
7. F. KIKIN: Psychoanalysis.
8. G. HERZER: Use of High Frequency Currents.

1. **General Congenital Hydrops.**—Ludwig reports a case of general congenital hydrops. There were no anatomical changes demonstrable in the infant post partum, which would have explained the etiology, and there must have existed a link between the edema of the mother, who was a secundipara and had always been healthy, but who had had an attack of dropsy eight days before labor (urine without albumin), which attack disappeared two days after delivery. As stated, the mother was absolutely healthy and the kidneys and heart were normal. The author thinks that an intoxication appeared suddenly, originating from the pregnancy, which produced a functional acute change of the kidneys in the mother.

3. **Intramuscular Ether Anesthesia.**—Dumont describes the *etherisation par voie intramusculaire* which consists in direct injection of ether into the musculature, especially the glutæi. The method is adapted for operation on the head. The eyes of the patient are to be covered with a black cloth, which greatly favors sleep. The needle is inserted and the operator must assure himself that it has not entered a bloodvessel. The syringe should contain from ten to twenty c. c. of ether, which amount is to be distributed between both sides of the glutæal region in doses from five to ten c. c. The narcosis is very successful. Sensibility reappears about thirty minutes after consciousness. There are no bad by effects, and the only after complication is pain in the glutæi, which remains for a few days, in some cases. Descarpentries, of Roubaix, has used this technique successfully in one hundred and fifty cases.

4. **Results from a New Method of Treatment in Tetanus.**—Kocher speaks of treatment of tetanus with magnesium salts as proposed by Meltzer, Meltzer and Auer, and Joseph and Meltzer, who published their observations during the last seven years in the *Studies from the Rockefeller Institute*. Kocher reports very favorable results from repeated injections of twenty-five per cent. magnesium sulphate solutions in three and five c. c. doses, and remarks that this method should be oftener adopted, as it was of great help.

6. **Röntgenological Examinations in Diseases of the Stomach and Intestines.**—De Guervain observes that such examinations should not take the place of clinical examinations, but should be used as supplementaries, when the best results will be achieved from such combination of both methods.

DERMATOLOGISCHE WOCHENSCHRIFT.

May 25, 1912.

1. T. BRAULT: Some Unusual Locations of Parasitic Infection: Trichophytosis of Glans penis; Favus of Eyelid; Eczema marginatum of Axilla.
2. DREW: Increasing Reducing Power of Pyrogallol Plaster.
3. EDWARD DAUMER: Value of Microscopical and Clinical Observations in Dermatology.
June 1, 1912.
4. LOUIS E. MERIAN: Two Cases of Leprosy with Tuberculous Tissue Changes: Demonstration of Lepa Bacillus, Antiform Method.
June 8, 1912.
5. KARL VIGNOLO-LUTATI: So Called *Lichen albus* of Zumbusch.
June 15, 1912.
6. W. SCHATZ and E. RIEBES: Combined Mercury and Salvarsan Treatment of Syphilis.
7. C. EGELBRETH: Origin of Leprosy (To be concluded).
June 22, 1912.
8. C. ENGELBRETH: Origin of Leprosy (Concluded).
9. Y. SAKAGUCHI and CH. WATABIKI: Cutaneous Reaction in Gonorrheal Infections.

6. **Combined Mercury and Salvarsan Treatment of Syphilis.**—Schatz and Riebes follow this plan: On two succeeding days intravenous injections of salvarsan are given, the dose according to the condition and body weight of the patient. Then for four weeks an intensive mercurial course of five day to weekly injections of mercury (either calomel or mercury salicylate). This is followed by two more intravenous injections of salvarsan. After two or three weeks the mercury is again given. After varying periods of time the Wassermann serum test is made, and if found positive another combined course of treatment is given. This is repeated until the reaction becomes and remains negative. In their latest cases, instead of giving the intravenous injections of salvarsan on succeeding days, they have given them in the course of from twenty-four to thirty-six hours, their reason for this procedure being that they have found that the salvarsan, as such, no longer existed in the circulating blood six hours after it was injected. Hence repeated smaller doses were given at lesser intervals so as to get the full action of the drug on the spirochetes or their remains still present in the tissues or in the blood. They have treated some 1,200 cases and report no bad results in any.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

August 6, 1912.

1. VOLHARD: Artificial Pneumothorax in Pulmonary Tuberculosis and Bronchiectasis.
2. HAMMER: Complement Binding Reaction in Tuberculosis.
3. DIEUDONNÉ and BAERTHELEIN: Elective Culture Cholera Media.
4. BRUNNELL and MÜLLER: Hecht's Modification of Wassermann Reaction.
5. PRINGSHEIM: Influence on Hemoglobinuria of Cholesterin.
6. VON LEUBE: Combating Tuberculosis in Children (Conclusion).
7. WEBER: Epilepsy; Clinical Conception.
8. FRIEDBERGER: Anaphylactic Reaction of Lung.
9. MAYER: Forty Years of State Medical Organization.
10. GULEKE: Foister's Operation (Conclusion).
August 13, 1912.
11. MEYER-BETZ and GERHARDT: Röntgen Examinations on Influence of Cathartics on Peristalsis in Healthy Person (To be concluded).
12. LICHTENSTEIN: Expectant Treatment of Eclampsia.
13. DREYFUS: Experiences with Salvarsan.
14. ROEMFELD: Practising Physician's Use of Wassermann Blood Test in Doubtful Cases.
15. BERGHEIL: Talipes.
16. BORCHERS: Diagnosis and Therapy of Jaw Fistulas.
17. HOHMANN: Fractures of Fingers.
18. KRETSCHMER: Eucalyptus Treatment of Scarlet Fever and Measles.
19. STAFFELD: Phenyl dimethylwurzolonamidomethanacidulphon Sodium in Treatment of Acute Articular Rheumatism.
20. HAUER: Tetanus traumaticus Cured by Antitoxine.
21. ABELIN: Mercury in Urine.
22. FISCHER: Color Reaction of Skin Secretions Overlaying Tuberculous Lung Tissue.
23. WIEDEMANN: Danger of Anaphylaxis in Practice.
24. KOLBERN: Traveling Museum for Care of Infants.
25. GRASSMANN: Sexual Pedagogic Questions.

August 20, 1912.

26. ZILLER: Treatment and Cure of Cancer Patients with External and Internal Medication (*To be concluded*).
27. DREYER: Diagnosis of Chronic Intermittent Appendicitis.
28. SCHMIDT: Sundry Matters in Obstetrics.
29. JUNG: Dystocia Due to Sacral Teratoma.
30. HEERMANN: Mesb , New Treatment for Tuberculosis.
31. SCHREIBER: Dose and Application of Neosalvarsan.
32. MILLION: Experiences with Noviform.
33. HEERMANN: Comparative Experiments with R ntgen Apparatus.
34. TREDELENBURG: Remarks on Kehr's Article on Duodenal Tumors.
35. LANZ: Epidemiology of Appendicitis.
36. GERMAN: Epidemiology of Perityphilitis.
37. DREYFUS: Experiences with Salvarsan.
38. MEYER-BETZ and GEHARDT: R ntgen Examinations into Influence of Cathartics on Peristalsis in Healthy Person (*Concluded*).
39. ROBERT: Active Principles and Modes of Administering Digitals.

August 27, 1912.

40. WEICHARDT and KELBER: Air Investigations.
41. PETRY: Chemistry of Cell Granules. Biological Significance of Eosinophilic Substance.
42. PFEIFFER and HESSAU: Basis of Serum Therapy in Typhoid.
43. ZOEPRITZ: Iodine Content of Human Ovaries.
44. EISLER: Pleuritic Interlobular Connective Tissue Masses (Schwarte) of Children's Lungs Observed with R ntgen Rays.
45. MOLDOVAN: Results of Salvarsan Treatment in Austro-Hungarian Army.
46. BECK: Auditory Indications and Counterindications for Salvarsan Therapy in Syphilis.
47. HAUPTMANN: Luminal in Epilepsy.
48. VORNER: Sulphur and Thiolin.
49. KRUGER: Colloidal Wolfram Substitute for Bismuth in R ntgen Examinations of Stomach and Intestines.
50. VEIEL: Serum Treatment of Dermatitis of Pregnancy.
51. WOLFF: Spleen Extirpation.
52. BRAUN: Frequent Occurrence of Pseudo-leucemia and Sarcoma in Hereditary Tendency to Tuberculosis.
53. ZELLER: Treatment and Cure of Cancer Patients with External and Internal Medication (*Concluded*).

1. **Artificial Pneumothorax.**—Volhard asserts that the lung collapse therapy is the most natural, and for most of the advanced cases of tuberculosis and bronchiectasis the only possibly satisfactory one, better than either forced feeding or mountain air treatment. On the contrary, patients go about their daily duties with complete artificial rest of the lungs. The result is that there is a collapse of the tuberculous and bronchiectatic caverns, cessation of the necrobiotic process, slowing of the lymph stream, which serves to stimulate the development of connective tissue to a marked degree.

12. **Expectant Treatment of Eclampsia.**—Lichtenstein reviews the history of the treatment of eclampsia, the older narcotic, and the newer active therapy. He analyzes the method of delivery. The important thing is not that the uterus is emptied, but how it is emptied. The average loss of blood during labor is 400 c. c. In eclamptics operated upon this is increased by fifty-two per cent., and from four to five per cent. in spontaneously delivered eclamptics. By venesection, before or after convulsions, the patient loses on the average 710 c. c. of blood. The mortality of the children is forty per cent. against thirty-eight per cent. in 400 previous cases. From his statistics and many more, the author concludes that the active therapy, accouchement forc , D rrsen's cervical incisions, etc., are unnecessary. He also disproves the placental theory of the cause of eclampsia. He urges the expectant therapy in the treatment of eclampsia.

14. **Wassermann Test in Doubtful Cases.**—Roemfeld received conflicting reports from two different sources in four cases tested for the Wassermann reaction. This has made him sceptical and he advises the general practitioner: 1. Not to depend on one test; 2, not to exclude specific infection with a negative Wassermann, or vice versa. He concludes with the remark that the test is a valuable prop and support, a ring in a chain of symptoms

upon which our diagnostic and therapeutic measures can be built. It is only this and nothing more.

18. **Eucalyptus Oil in Scarlet Fever and Measles.**—Kretschmer carried out the treatment advocated by Curgeven and Mil  and found that complications and mortality in these diseases were not reduced to such an extent as to warrant the widespread application of this method. The treatment consisted in rubbing the body of the patient with eucalyptus oil twice daily, spraying clothes, bedding, furniture, etc., with it, a few drops in water to be taken internally a number of times daily, and the tonsils to be painted.

19. **Remedy 844 for Acute Articular Rheumatism.**—Staffeld, reading of the new preparation for rheumatism, and at the same time suffering from a third attack, tried the drug on himself and found that the attack which usually lasted from three to four weeks was relieved by four powders. This prompted him to try them in fifty cases of acute articular rheumatism with eminently satisfactory results. There were no unpleasant side effects on heart or stomach. The drug can be given per rectum with same results. He advises larger doses, fifteen to thirty grains, three times a day.

27. **Chronic Appendicitis.**—Dreyer shows that a valuable adjunct to the diagnosis of chronic intermittent appendicitis is the insufflation of air into the rectum, which works its way gradually up to the cecum and produces severe pains in the region of the appendix and umbilicus, identical with those of an acute attack. The rectum is thoroughly washed out and the air introduced slowly.

30. **Mesb  for Tuberculosis.**—Heermann has used mesb  in cases of tuberculous laryngitis, rhinitis, and mastoiditis with very satisfactory results. *Sida rhombifolia cubilguiziana* is the botanical name for mesb . It is used as a salve, a spray, and internally.

32. **Noviform.**—Million has found in noviform an adequate substitute for iodoform, possessing all its good qualities without its drawbacks; the author proves that it possesses a deep antibacterial action in the tissues; harmful results were never noticed, the wound was not unnecessarily irritated, the surrounding tissues were not affected. The powder has hydropscopic action and is a deodorant. Eczema and symptoms of intoxication were absent.

11, 38. **R ntgen Examination of the Effect of Cathartics on Peristalsis.**—Meyer-Betz and Gehardt studied the movements of the alimentary tract with the R ntgen rays after the ingestion of the different kinds of laxatives. They found that each group of laxatives had a characteristic effect upon the motor mechanism of the intestine; infusion of senna isolates colonic action, inhibits the normal action of the cecum, changes the slow peristalsis of the colon to a visibly rapid, uniformly advancing movement of the contents, and stimulates the *haustri coli* to action. Aloes in large doses increases the tone of the intestinal walls almost to a spasm. Castor oil increases most vividly the peristalsis of the small intestine; rolling movements are visible, and the large intestine fills up with large movements which lead to copious periodical expulsion of the contents. The general action of salts is the liquefaction of the intestinal contents. The expul-

sive power of the intestine after ingestion of jalap is due to increased secretion. Excessive filling of the small gut, together with the direct action of the drug on the mucous membrane, are responsible for the increased peristalsis. The large intestine is passive and much distended. Large amounts of sediment prove a complete immobility of long duration, affecting the large segments of the gut. When the walls are distended to a certain extent by the gas and liquids, the large intestine empties itself by a series of rapid movements of its uncomfortable contents. Where the lumen is filled with fluids there is the tendency to the formation of gas, which brings about rapid shifting of the contents. The direct stimulation of calomel leads to intensified peristaltic movements of the small and large intestine. The Röntgen rays thus furnish an insight into the detailed action of the laxatives in human beings which cannot be gained by clinical observation.

42. Serum in Typhoid.—Pfeiffer and Bessau conclude that notwithstanding the opposing assertions of other authors, there is no such thing as a real antitoxic serum therapy in typhoid. The goal toward which these investigators are striving, and which will probably be attained, is intensive bacteriolysis and complete endotoxic clearance. Both are functions of the bacteriolysins. In other words the therapeutic agents of all typhoid sera are the specific bacteriolysins.

47. Luminal in Epilepsy.—Hauptmann found that luminal, the new hypnotic, when used in epilepsy, diminishes the number and severity of convulsions. The specific field of application of the drug is in those cases which are no longer influenced, even by large doses of bromides. Cases of moderate severity are brought to a standstill with 0.15 to 0.2 gramme of the drug daily. In severer cases the drug should not exceed 0.3 gramme. Unpleasant side effects were not noticed after daily use covering a period of months. There is no cumulative action. The author advises, therefore, the use of luminal, even in those mild cases where the use of bromides is contraindicated on account of their side effects.

50. Serum in the Dermatitis of Pregnancy.—Veiel says that the only effective therapy for herpes gestationis is the injection of blood serum from a healthy pregnant woman. He supports his assertions by reports of the cure of a series of obstinate cases by this method.

ZENTRALBLATT FÜR CHIRURGIE.

September 7, 1912.

1. P. WOLFF: Sterilization Catgut.
2. C. LAUENSTEIN: Grafting of Hairy Skin.
3. F. GOECKE: Transplantation of Flaps Taken from Auricle to Replace Defects in Ala nasi.

September 14, 1912.

4. Introduction of Sutures in Transverse Abdominal Section.
5. PERTHES: Incision in Operations on Gallbladder.

September 21, 1912.

6. F. FRANKL: Cause of Partial Laceration of Tendons.

2. Grafting of Hairy Skin.—Lauenstein reports an unsuccessful attempt to transplant a hairy piece on one man's scalp to the scalp of another who was bald. The portions of scalp were exchanged between the two men, the hairy one necrosed, the transplantation of the other was successful in part, the base adhering, the superficial layer dying.

3. Transplantation of Flaps Taken from the Auricle to Replace Defects in the Ala nasi.—Goecke reports a case in which a defect had been caused in the ala nasi of a girl sixteen years old, by lupus, which had been cured by treatment with the x rays. A flap measuring about 1.5 by two by two cm., having the same color and consistence as the rest of the nose, was taken from the auricle and used to fill the defect. The result was excellent.

JAHRBUCH FÜR KINDERHEILKUNDE

September, 1912.

1. WILHELM SCHLIEPS: Pseudocardiac and Cardiac Murmurs in Children without Pathological Significance.
2. FRIEDRICH VON REUSZ: Hysteria in Children and Its Treatment in Institutions.
3. OSKAR THORSPECKEN: Myatonia congenita.
4. W. SHUKOWSKY and ROSA AISENBERG: Mongolism in Children.

1. Physiological Cardiac Murmurs in Children.

—Schlieps's conclusions are as follows: 1. The expression anemic or hemic murmur should not be used, inasmuch as anemia and cardiac murmurs bear no relation to one another. There may be very little anemia with a very loud murmur, or a very severe anemia with very little or no murmur at all. 2. The majority—about two thirds of all functional murmurs—are cardiac respiratory. 3. About one third of all functional murmurs are due to lack of tone of the muscles of the heart. These murmurs should be called atonic murmurs. 4. These last murmurs can be cured by improving the general condition of the patients.

2. Hysteria in Children.—Reusz shows the great advantage of treating hysterical children in hospitals, away from their former surroundings.

4. Mongolism in Children.—Shukowsky calls attention to the fact that mongolism has been described by many writers in all other countries, but that very little about this condition has appeared in Russian literature. The author reviews the literature on the subject and then reports a typical case of mongolism with photographs. Thyroid extract was tried in his case with no result. The article contains nothing new.

PARIS MÉDICAL.

September 7, 1912.

1. F. TERRIEN: Ophthalmology in 1912.
2. MONTHUS: Treatment of Strabismus.
3. CANTONNET: Ocular Lesions in Fractures of Skull.
4. GRIVOT: Otorhinolaryngology in 1912.
5. LEMAITRE and BALMAIN: Submucous Rejection of Nasal Septum.
6. SCHOFFER: Stomatology in 1912.
7. FARGIN-FAYOLLE: Inclusion and "Disinclusion" of Teeth.

2. Treatment of Strabismus.—Monthus points out that the treatment of this condition comprehends: 1. Reestablishment of binocular vision (functional cure); 2. straightening the deviated eye (esthetic cure). This can be accomplished usually by means of full correction of the existing defect of refraction by means of lenses, often supplemented to advantage with properly adjusted prisms. Use of the stereoscope according to Javal, and of Rémy's diploscope is valuable. If these methods do not succeed, tenotomy, or advancement of an ocular muscle must be done. The orthopic measures, however, will generally be required in addition to the surgical.

PRESSE MÉDICALE.

September 4, 1912.

1. KIRMISSON: Subperiosteal and Incomplete Fractures. Fracture of Ulna with Dislocation of Radial Head.
2. E. RIST: Transmission of Whispered Voice.

September 7, 1912.

3. O. CROZON: Hereditary Craniofacial Dysostosis.
4. M. SAVARIAUD: Congenital Club Foot and Its Treatment.
5. L. LAGARDE: Psychoses Occurring in Course of Measles and Simple Throat Inflammations.
6. M. JUDET: Apparatus for Continuous Extension in Treatment of Oblique Fractures of Leg.

2. **Transmission of the Whispered Voice.**—Rist pleads for a more general recognition of the diagnostic value of whispering pectoriloquy. While this sign is, in a sense, the equivalent of bronchial breathing and bronchophony, it is more easily recognized than these in certain doubtful cases, e. g., where bronchial breathing reaches the ear in admixture with the normal vesicular murmur, where it resembles the so called "harsh" respiration, or where its place of origin is deeply situated, as in the case of certain cavities, interlopy pleurisy, or central pneumonia. In these difficult cases bronchophony is likewise almost useless, being too loud and without differences of shading. Whispering pectoriloquy, on the other hand, allows of diagnosing the physical condition underlying bronchial breathing, viz., consolidation, partial or complete, with great delicacy and precision. Care should obviously be taken to exclude direct transmission of the whispered voice to the ear through the air. It is also to be remembered that when listened for over areas normally yielding bronchial breathing, whispering pectoriloquy is without significance. Curiously, it is precisely in the two conditions in which it was formerly asserted to be pathognomonic, viz., serofibrinous pleurisy and involvement of the peribronchial glands, that the sign is untrustworthy or valueless.

4. **Treatment of Congenital Club Foot.**—Savariaud refers particularly to the equinovarus variety. In the case of children who can be given plenty of care, he advises treatment by daily manual correction under the supervision of the physician. In the intervals the corrected position should be maintained by appropriate apparatus. Later, these measures proving insufficient, tenotomy and forcible correction under chloroform are to be added. With sufficient patience, excellent results may thus be obtained, even in severe cases. Where less care can be given and more expeditious treatment is necessary, early operation on the bones, consisting of subcutaneous gouging in the young, and later astragalectomy and cuneiform resection, followed by the use of a plaster cast, are indicated.

6. **Apparatus for Treatment of Fractures of Leg.**—Judet describes an apparatus consisting of two adjustable planes, the one corresponding to the thigh being inclined. It is designed especially for oblique fractures with considerable shortening. Traction is made through zinc adhesive plaster bands, extending along the lower segment of the leg to a point two or three fingerbreaths above the fracture and supported by additional transverse turns, thus avoiding the pain generally associated with traction from the foot alone, and permitting the use of a five to eight kilogramme weight. Correction of rotatory displacement is provided for, and motion at the anklejoint without interruption of the traction is allowed. A groove for the heel is provided in the board supporting the leg, pain being thus avoided and anteroposterior angulation of the fragments antagonized.

SEMAINE MÉDICALE.

September 11, 1912.

F. DE QUERVAIN: Modern Principles in Treatment of Surgical Tuberculosis.

Treatment of Surgical Tuberculosis.—De Quervain lays stress on the value of treatment at the seaside and of heliotherapy at great altitudes in so called "surgical" tuberculosis. Discussing the indications and principles of surgical treatment, he warns against operative intervention of any sort in closed osseous or articular tuberculosis unless the entire focus of disease can be removed, and advises that where such removal can be effected the operative wound be closed without drainage. Where the focus removed has already become the seat of secondary infection, with sinus formation, the procedure should vary in accordance with the severity of this infection; in certain cases appropriate drainage will result in healing by first intention, whereas in others open treatment is necessary. Partial operations are to be confined to the incision of abscesses due to secondary infection and the removal of sequestra where there are sinuses.

REVUE DE MÉDECINE.

August, 1912.

1. L. BOUCHUT and DUJOL: Syphilis and Bronchial Dilatations.
2. E. JEANSELME and PAUL CHEVALLIER: Latent Secondary Syphilitic Meningeal Involvements (concluded).
3. R. LEPELLE: Appearance of Symptoms of Exophthalmic Goitre after Absorption of Iodine.

1. **Syphilis and Bronchial Dilatations.**—Bouchut and Dujol present arguments in support of the theory advanced by Triper to the effect that the majority of cases of bronchiectasis in the adult, where the cavities are angiomatous, cystic, or cavernous in type, are due to syphilis. The alveolar formations observed histologically, consisting of cubical epithelium and adjoining the bronchiectatic cavities are, according to this view, syphilitic granulomata, and the true bronchial walls are not represented at all. The authors report the case of a man who contracted syphilis at twenty-one years of age, and eight years later had acquired chronic lung disease, which slowly progressed and finally caused death at the age of sixty years. The symptoms and signs presented at the final illness, among them obstinate hemoptysis, were strongly suggestive of tuberculosis, but the presence of extensive rupial lesions, absence of tubercle bacilli, and strictly unilateral, though long persisting, lung involvement led to the diagnosis of syphilis. At autopsy there were found in the right lung numerous typical bronchiectases, large and small, together with gummata, but no trace of tuberculosis, either active or quiescent. In concluding, the authors refer to the possible utility of antiluetic treatment in certain cases with bronchial dilatations. They have seen several cases in which benefit resulted. In the patient just reported, the dangerous condition did not allow time for such treatment.

2. **Meningeal Involvement in Secondary Syphilis.**—Jeanselme and Chevallier find that involvement of the meninges in secondary syphilis, sufficiently marked to cause histological changes, may not give rise to any symptoms, even though a considerable lymphocytosis be present in the cerebrospinal fluid. Where symptoms do occur, the most definite are: Intense, continuous headache, with

periodical exacerbations, generally in the evening, relieved by recumbent posture with the head low, lumbar puncture, and especially potassium iodide; asthenia of psychic origin, the result of constant preoccupation on the subject of the malady; pain in the back of the neck, sometimes accompanied by spasm; dorsolumbar pain; temporary paresthesias, with periods of numbness and motor incapacity in the limbs; tinnitus aurium; loss of patellar and sluggishness of ocular reflexes. The severity of the condition may be graded in accordance with the degree of lymphocytosis in the cerebrospinal fluid. There is no close relationship between the meningeal condition in the secondary stage and the lesions of the skin and mucous membrane. An absolutely latent secondary syphilis may coexist with a marked lymphocytosis, and this is so common an occurrence as to render it advisable for the physician not to discontinue treatment without examining the cerebrospinal fluid. The lymphocytosis is far more resistant to mercury than the skin lesions. Salvarsan has been alleged occasionally to induce latent meningitis in the secondary period of syphilis; the authors do not believe there is much danger in this respect. The true syphilitic meningeal involvements would appear to be the origin of the sclerogummatous patches of the tertiary stage, of tabes, and of general paralysis. Persistent treatment with salvarsan has the power to cure even serious meningeal involvement.

3. **Iodine and Basedow's Disease.**—Lépine reports a case in which the use of iodine at the time of a gynecological operation, and subsequently its application to the thorax, caused symptoms of exophthalmic goitre to appear, although the patient had previously shown no evidences of even a tendency to this disorder.

BRITISH MEDICAL JOURNAL.

September 21, 1912.

1. ARTHUR KEITH: Modern Problems Relating to Antiquity 1 Man.
2. JOHN HOWELL: Chief Use of Peritoneum.
3. C. McNEIL: Tuberculosis in Infancy and Childhood.
4. H. G. ARMSTRONG: Subjective Method for Estimating Blood Pressure.
5. T. W. DEWAR: Whooping Cough Treated by Intravenous Injections of Iodoform.
6. J. W. LINDSAY: Contagiousness of Leprosy.
7. G. E. E. NICHOLLS: Strangulated Inguinal Hernia in Infant.

2. **The Use of the Peritoneum.**—Howell suggests that the chief use of the peritoneum is in the nature of a scavenging organ; that its use is "that of a perienteric trap for the reception and annihilation of microorganisms which *constantly and normally*—that is, without producing symptoms—permeate the intestinal wall." He holds that it is part of the function of certain of the internal organs, chiefly the liver, stomach, and intestines, to excrete the toxic products formed therein, including at times even the bacteria themselves. This is to be accomplished with the minimum risk of contamination to the remainder of the structures of the body. Howell bases his conception of the chief function of the peritoneum in great part upon its philogenesis and cites a similar function as the chief in the lower forms of life. He further cites clinical cases in which the peritoneum has been taking care of the excreted bacteria, as in the case of tubercle bacilli, for long periods of time without the presence of any symptoms and in which this fact has been discov-

ered only by accident in the course of an operation for some other condition. He also cites, in support of his contention, the fact that the peritoneum is frequently, in fact usually, called upon to care for a certain number of pathogenic bacteria as the result of many surgical procedures. The histology of the structure bears out his views, as it consists of endothelial cells. He believes that during life there is a progressive attenuation of the numbers of the bacilli which pass through the intestinal wall as the result of the sievelike action of the several structures encountered in their passage. When they reach the peritoneum they are relatively scant and are soon disposed of. When for any reason, however, the bacteria pass through in large numbers symptoms are produced which are well known, such as those of peritoneal infection, etc. The toxins which are liberated in the peritoneal cavity through the destruction of large amounts of bacteria are normally excreted through the glands of Lieberkühn. In times of stress this function is also shared by the peptic glands, and this is especially true in those cases in which the function of the intestine is impaired by diminution in peristalsis or by its paralysis or when there is actual obstruction. Then the stomach becomes filled with the excreted toxic products of the peritoneum and also with the bile and toxins thrown out by the liver. This brings about vomiting. In the opinion of Howell these symptoms are nicely graded in severity so as to correspond to the gravity of the condition which causes them. He even goes farther and states that the color of the vomited material greatly aids in the diagnosis and prognosis of the case. Thus he also explains those cases which have been diagnosed as intestinal obstruction on account of fecal vomiting and which upon operation are found to have some nonobstructive condition with a considerable peritonitis.

4. **Subjective Method of Taking Blood Pressure.**—Armstrong discovered, through observations made upon himself, that there is a very definite sensation experienced at the moment when the blood begins to flow beneath the armlet after it has been completely shut off. That there is also an equally definite sensation which is experienced when the pressure in the armlet is entirely relaxed so that there is no obstruction to the flow of the blood. The throb which is audible by means of the stethoscope is equally felt by the subject, and with a little practice the point of maximum throb can be determined quite easily. As a result of these observations Armstrong has tried this subjective method in a number of patients and finds that it is very accurate and valuable. He has, of course, checked his observations with the other methods in use, including the auscultatory. He remarks that it has the advantage of being free from the small percentage of error due to anatomical variation, and the disadvantage of being of no use at all in nervous and excitable people.

5. **Iodoform in Whooping Cough.**—Dewar obtained very satisfactory results in the treatment of a case of this disease in a youth of fifteen years, by the intravenous injection of one grain of iodoform dissolved in ten minims of methylated ether. In the beginning of the treatment the injection was accompanied with an increase in the cough, but this soon

subsided. In the later injections this increase was not noticeable.

LANCET.

September 21, 1912.

1. ARTHUR KEITH: Modern Problems Relating to Antiquity of Man.
2. JEAN DARDEL: Vertebral Ankylosis.
3. F. P. KNOWLTON and E. H. STARLING: Nature of Pancreatic Diabetes.
4. A. E. BARKER: Some Unusual Contents in Hernial Sacs.
5. W. L. BROOKS and A. G. GIBSON: Retrogressive Tuberculous Meningitis.
6. J. LIDDELL: Relationship between Movable Kidney and Chronic Colitis.
7. H. L. MURSELL: Perforating Appendicitis of Bilharzial Origin.
8. H. L. C. NOEL and H. S. SOUTTAR: Intravenous Injection of Paraldehyde.
9. F. J. MCCANN: Technique of More Extensive Abdominal Operation for Cancer of Womb.
10. S. R. GLOVINE: Jousset's Method of Demonstrating *Bacillus tuberculosis* in Pleural Fluids.
11. R. JONES: Review of Congress of Alienists and Neurologists of French Speaking Countries.

2. **Vertebral Ankylosis.**—Dardel, after giving an excellent description of the several pathological forms of this class of affections, proceeds to the conclusion that it is quite possible to admit that certain toxic and infectious agents may be capable of determining different anatomical lesions dependent upon the soil, and in such manner that rhizomelic spondylosis and ankylosing vertebral rheumatism retain their peculiar histological lesions up to a certain point, although they may be caused by several different agents. He regards such a conclusion as in the nature of a rational hypothesis to which we have had to have recourse, owing to the insufficiency of the available data regarding the precise nature of the etiology of the several forms of lesion.

3. **Pancreatic Diabetes.**—Knowlton and Starling have conducted a series of experiments upon the use of sugar by the heart, using a new method of the isolated heart and lung preparation by which the heart may be made to continue its action for hours under normal conditions of blood pressure and temperature, together with normal pulmonary oxygenation of the blood. They find that the normal heart consumes about four mg. of sugar in a gramme of weight in one hour. On the other hand hearts from animals made diabetic through previous removal of the pancreas consume very much less sugar, often a scarcely perceptible amount. From a further series of experiments they conclude that this loss of power of the diabetic heart to consume sugar is due to the absence of some substance which is normally present in the heart and circulating blood, and which is formed by the pancreas. This conception was substantiated further by the observation that the addition of a boiled extract of pancreas to the circulating blood raised the sugar consumption from a point so low as to be well within the limits of error to a point closely approaching the normal. The addition of the pancreatic extract likewise produced a noticeable improvement in the action of the heart, raising its rate from subnormal to normal. From the results of their experiments they then conclude that the pancreas excretes a hormone which circulates in the blood, and the presence of which is necessary in order that the tissue cells may be able to assimilate and utilize the sugar of the blood.

5. **Retrogressive Tuberculous Meningitis.**—Brooks and Gibson report the details, both ante mortem and post mortem, of a case of tuberculous

meningitis which had undergone retrogression. The earlier fluids from the spinal canal contained tubercle bacilli, the later did not. After death an examination of the meninges showed signs of old tubercles which had undergone almost complete resolution, leaving only small collections of nuclei and degenerated cells. Tuberculosis was present in other parts of the body. Whether the administration of tuberculin had anything to do with the retrogression of the meningitis or not is doubtful, though it was while it was being given that the improvement in the clinical symptoms took place.

6. **Colitis and Movable Kidney.**—Liddell believes that these two conditions bear a close relation to one another, somewhat in the nature of a vicious circle. He holds that the first cause of the movable kidney is the loss of perinephritic fat due to the presence of a colitis, and the presence of a loose kidney, whether primary or secondary, causes or maintains a colitis. The movable kidney presses upon the colon and delays the passage of its contents and also causes irritation of the organ. In the stagnant contents putrefaction takes place, and its products further aggravate the irritation to the extent that a severe colitis results. He believes that the treatment of either condition should be associated with the simultaneous treatment of the other, and that both may be conducted along medical lines in the majority of cases, for when the colitis is improved the perinephritic fat is restored, and soon the kidney becomes fixed again; then the further treatment of the colitis will complete the cure of both of the conditions.

BOSTON MEDICAL AND SURGICAL JOURNAL

September 26, 1912.

1. S. B. WOLBACH: Filterable Viruses.
2. A. C. HEEFINGER: Subphrenic Abscess.
3. I. F. COTTON: Acapnia: Its Surgical Importance.
4. ROGER L. LEE: Patient with Pellagra Who Had Not Been Outside of New England for Eighteen Years.

3. **Acapnia.**—Cotton defines acapnia as the condition in which the carbon dioxide content of the body is definitely below the normal proportion, about forty per cent. by bulk. An increase in this percentage causes an exaggerated respiratory effort to get rid of the excess by way of the lungs, and no other clinical symptoms, so far as known, except headache, nausea, and malaise. The percentage is reduced by excessive respiration, induced by pain, or nervous excitement, or occurring in anesthesia, as well as by exposure of the body tissues without protection of the skin during major operations. Such a reduction brings about: 1. Loss of the normal excitant influence of carbon dioxide on the respiratory centre, hence the occasional failure of respiration under anesthesia; 2, loss of venous tone, hence the "bleeding into the splanchnic veins" which seems to be an important element in surgical shock; 3, loss of tone and action of other unstriated muscle fibre, particularly of the gut. He finds from his tests that hysterical hyperpnea may produce serious general acapnia, that local acapnia may cause loss of peristalsis, that general acapnia is readily remedied if treated promptly, and that local acapnia in laparotomies is easily handled. The relation between acapnia and shock needs further study.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

September 28, 1912.

1. FRANKLIN S. NEWELL: *Gastric Complications of Pregnancy and Labor.*
2. J. W. WEINSTEIN: *New Method of Treatment of Ulcer of Stomach.*
3. ALLEN A. JONES: *Hunger Pain.*
4. W. A. PUCKNER: *Unreliability of Unimportant Medicaments.*
5. EDOUARD LE FEVRE: *Desirability of More Restricted Materia Medica from Standpoint of Pharmacist.*
6. EDOUARD LE FEVRE: *Desirability of More Restricted Materia Medica from Point of View of Medical Instruction.*
7. OLIVER T. OSBORNE: *Drugs We Need.*
8. M. J. WILBERT: *Work of Committee on Useful Remedies.*
9. ALFRED STERELG and H. K. PANCOAST: *Treatment of Leuchemia and Pseudoleuchemia with X Rays.*
10. RUSSELL H. BOGGS: *Röntgen Treatment of Nonmalignant Lesions.*
11. JAMES HENDRICK LLOYD and S. D. W. LUDLUM: *Essential, or Primary, Lateral Sclerosis.*
12. MYER SOLIS-COHEN: *Reporting of Suspicious Cases by Laity, Prerequisite to Efficient Control of Communicable Diseases.*
13. A. L. S. KOOB: *Pathological Study of Poliomyelitis.*
14. WALTER B. DORSETT: *Simple Operation for Repair of Female Perineum, Based on Anatomy of Parts.*
15. WILLIAM H. TOMLINSON: *Negative Air Pressure in Accessory Sinus Disease. Simple Apparatus Used.*
16. EDWARD L. HUNT: *Complications in Tabes dorsalis.*
17. MAX REICHMANN: *Congenital Absence of Both Clavicles.*
18. EDWARD J. BROWN: *New Sphygmomanometer.*
19. J. R. PENNINGTON: *Suggestion for Removing Sutures.*
20. RICHARD L. SUTTON: *Hypertrophic circumscripta.*

2. **New Method of Treatment of Ulcer of the Stomach.**—Weinstein presents a new method of treating gastric ulcer by a combination of remedies, used by previous authorities, a restricted diet, massage when colonic stasis is present, warm compresses, bismuth, alkalies, belladonna, and olive oil. These cases formerly called hyperacidity, have symptoms (pain, heartburn, sour stomach, and sour eructations), which appear one to five hours after meals and which are relieved by food. These symptoms, even without hematemesis, indicate the presence of a superficial ulcer. A bland diet which causes the least flow of hydrochloric acid, and which leaves the stomach quickly, should be used. An appropriate diet will check the secretion and combat the continuous flow of acid. The motility of the stomach, in these cases, must be determined. This treatment is given while the patients go about attending to business, but must be carried out with precision in all its details by both physician and patient, if one would look for success.

3. **Hunger Pain.**—Jones describes hunger pain as a sensation felt three or more hours after eating. Hyperchlorhydria exists, but does not cause the pain, which is commonly associated with gastric ulcer, the location of the ulcer having an effect upon its character and incidence. When bland foods are given there is a longer rest before the pain appears. The use of condiments shortens the interval of rest. This condition may accompany duodenal ulcer when the appearance of the pain is somewhat delayed, i. e., until the acid contents of the stomach enter the duodenum. Hunger pain is a symptom of acid gastritis, and is occasionally present in catarrhal gastritis, gastrectasia, and gastropnoia. In hyperorexia or perorexia the pain may be very great, but it is promptly relieved by food. In other abdominal diseases we may have hunger pain, viz., in cholelithiasis, cholecystitis, and in chronic appendicitis with adhesions. The treatment is guided by the various causes. The use of lavage and of abdominal supporters is commended. Regulation of diet, the giving of alkalies and gastric sedatives, the administrations of tonics, the observation of proper rest, and any operative measure indicated are advised, as the case demands.

The writer concludes by emphasizing the need of careful consideration and study of patients who have the postprandial, or anteprandial pain in the epigastrium, and warns against making a hasty diagnosis of gastric or duodenal ulcer, and rushing them to the operating table for a gastroenterostomy by reason of this single symptom.

4. **Unreliability of Unimportant Medicaments.**—See this JOURNAL for June 15th, page 1291.

5. **Desirability of a More Restricted Materia Medica from the Standpoint of the Pharmacist.**—See this JOURNAL for June 15th, page 1291.

6. **Desirability of a More Restricted Materia Medica from the Point of View of Medical Instruction.**—See this JOURNAL for June 15th, page 1291.

7. **The Drugs We Need.**—See this JOURNAL for June 15th, page 1291.

8. **Work of the Committee on Useful Remedies.**—See this JOURNAL for June 15th, page 1291.

9. **Treatment of Leuchemia and Pseudoleuchemia with X Rays.**—See this JOURNAL for June 8th, page 1225.

10. **Röntgen Treatment of Nonmalignant Lesions.**—See this JOURNAL for June 15th, page 1291.

11. **Essential, or Primary, Lateral Sclerosis.**—See this JOURNAL for June 8th, page 1224.

13. **Pathological Study of a Case of Acute Poliomyelitis.**—See this JOURNAL for June 8th, page 1224.

14. **Simple Operation for Repair of the Female Perineum, Based on Anatomy of the Parts.**—See this JOURNAL for June 8th, page 1221.

16. **Complications in Tabes dorsalis.**—See this JOURNAL for June 8th, page 1224.

MEDICAL RECORD.

September 28, 1912.

1. S. ABOLPHUS KNOPF: *Unjustified Prejudice of Tuberculous Patients against Sanatoria and Hospitals.*
2. LOUIS F. BISHOP: *Relation of Diet to Heart and Bloodvessel Disease.*
3. ARTHUR C. CHRISTIE: *Vaccines in Suppurative Otitis media.*
4. HAROLD DE WOLF: *Gallstones.*
5. L. SEXTON: *Vesical Calculi.*
6. C. P. FARNSWORTH: *Intestinal Obstruction.*

2. **Relation of Diet to Heart and Bloodvessel Disease.**—Bishop advises as an ideal diet bread and butter, with a certain portion of milk to supply the liquid, and sufficient cheese to meet the protein requirements, without excess of carbohydrates or heat units. A diet of bread and butter alone yields an excess of carbohydrates, taxes digestion, and induces an accumulation of excess weight and other evils, but if given with cheese, it forms a balanced action upon which the patient will thrive and be comfortable.

3. **Vaccines in Suppurative Otitis media.**—Christie emphasizes the point, as have others who have written on this subject, that the vaccine must be prepared in such manner that it contains the causative organisms of the disease. As the external auditory canal is usually the seat of many different germs, if an attempt is made to cultivate the organisms of an existing otitis media from this source, the resulting culture will usually be contaminated with several other varieties, and the causative germ will often be outgrown by some harmless saprophyte. The writer's method is begun by thoroughly irrigating the external auditory canal with

normal salt solution and then drying it with sterile cotton. Illuminating the parts well, he takes some of the discharge from the opening in the drum, the patient forcing it out by autoinflation, or Seigel's speculum is used to withdraw the discharge. Many attempts are sometimes necessary before the offending germ is found; sometimes it is never found. The writer confines the use of this vaccine treatment in acute suppurative otitis media to those cases which have resisted local treatment; it should then be used as an aid, and not to replace such treatment. In most subacute cases vaccines are of value. In chronic cases their use is restricted by the amount of necrosis and the condition of the circulation in the mastoid. The more chronic the case, the more need of operative measures to effect a cure. If vaccines will prevent cases from becoming chronic, or limit the spread of disease in chronic cases, "their use is not only justified, but becomes highly imperative."

5. Observations on Vesical Calculi.—Sexton, after discussing the various features of vesical calculi, including the etiology, symptoms, and the salient features of the operative measures (lithotripsy, litholapaxy, median and suprapubic lithotomy, etc.), aptly remarks that the treatment should not end with the removal of the stone; malt and alcoholic drinks and nitrogenous foods should be prohibited, alkaline waters freely used, and plenty of exercise and fresh air should be insisted upon. The writer leans strongly to the suprapubic operation and gives the technique employed by him.

6. Intestinal Obstruction, with Report of Eight Cases.—Farnsworth is convinced that an intestinal obstruction should be relieved by operation within the first twenty-four hours, or at least as soon as the diagnosis is made. Delay is not only dangerous, but inexcusable. Surgical relief, the only safe treatment, should be done early and not as a forlorn hope.

AMERICAN MEDICINE.

July, 1912.

1. CHARLES E. WOODRUFF: Harmful Effects of Small Amounts of Heat and Light.
2. O. L. MELLOT: Sunstroke.
3. ROBERT T. MORRIS: Surgical Operations in Hot Weather.
4. HAROLD HAYS: Summer Diseases of Nose and Throat.
5. BEVERLY ROBINSON: Crude Investigations in Medicine and Where They Lead.
6. R. L. HAMMOND: Formaldehyde in Removal of Verruca, Clavus, Callositas, Nevus pigmentosus, and Cornu cutaneum.
7. TOM A. WILLIAMS: Occupational "Neurosis," Writer's Cramp, Successfully Treated by Modern Methods of Psychoanalysis and Reeducation.
8. HOWARD CRITCHER: True Snake Story.

August, 1912.

9. IRVING W. VOORHEES: Syphilis of Ear with Special Reference to Use of 606.
10. LESTER M. HUBBY: Vertigo.
11. G. H. SHERMAN: Bacterins in Treatment of Aural Vertigo.
12. D. A. SINCLAIR: Modern Treatment of Syphilis.
13. SAMUEL H. BROWN: Reflex Pain in Ocular Conditions.
14. C. K. JOHNSON: Bronchial Asthma in Children.

2. Sunstroke.—Mulot, in addition to the old classic treatments, advises the use of lumbar puncture, not alone because of the similarity between the symptoms of sunstroke and meningitis, but because the cerebrospinal fluid is under increased tension, and in the severer cases it is albuminous and blood stained with initial polynucleosis followed later by a persistent lymphocytosis, an indication that the meninges are involved. When used early it lessens the headache and the somnolence. The operation

should be repeated until the cerebrospinal fluid has become normal, macroscopically, microscopically, and chemically. The operation, simple and safe, has been used in the relief and cure of the sequelae of sunstroke.

3. Surgical Operations in Hot Weather.—Morris observes that the argument against surgical operations in hot weather relates rather to the surgeon than to the patient. In his experience in the operating room with the temperature ranging about 100° F., and with exhausting nights his operative cases (a number of them involving abdominal operations) did, as it seemed to him, "unusually well."

9. Syphilis of the Ear, with Special Reference to the Use of 606.—Voorhees concludes that salvarsan is of value in syphilis of the ear, especially in recent aural lues. In old aural lues its use should be guarded, especially if there is degeneration of the cochlear or vestibular nerves. If it is injected while the child is young, it may be useful in congenital deaf dumbness. The writer advises consultation with an otologist familiar with neurorecidives, if aural lues is suspected and the use of 606 is contemplated.

10. Vertigo.—Hubby considers four types of vertigo. In simple vertigo there is no tendency to fall in any particular direction, and there is no nystagmus. In ocular vertigo the character is the same, except that occasionally there is a purely oscillatory nystagmus. In cerebellar vertigo, a third form, a tendency to fall always in one particular direction exists, even when the head is placed in different positions. While nystagmus may be present, it is apt to be slower than the vestibular type. It may be, moreover, merely hyperphysiological, i. e., elicited only on turning the eyes strongly in each direction seriatim. In vestibular vertigo the swaying is in the direction of the slow component of the nystagmus, and in the plane of the nystagmus. Nystagmus of a vestibular type is always present; it may be necessary to turn the eyes strongly in one direction to demonstrate it. The direction of the falling is altered by changing the position of the planes of the head relative to the earth's surface.

11. Experiences with Bacterins in the Treatment of Aural Vertigo.—Sherman, reporting seventeen cases of aural vertigo successfully treated with bacterins, remarks that this is another proof of the wide scope and value of vaccine therapy. In these cases there is deep seated inflammation, so located that antiseptic treatment is impossible, and operative measures are always serious. By this treatment the patient is immunized, making trouble in any part of the body wholly accessible. If the results obtained are criticised as only temporary (years have passed in some of the writer's reported cases), still they have been secured to the gratification and relief of the suffering patient.

JOURNAL OF BIOLOGICAL CHEMISTRY.

August, 1912.

1. T. BRATTLEFORD ROBERTSON: Nomenclature Character of Oocytin (Oocytase).
2. TREAT B. JOHNSON AND CHARLES A. BRAUTLECHT: Hydantoins: Synthesis of Thietyrosin.
3. HARRY J. CORPER: Modification of Ritter's Method for Quantitative Estimation of Cholesterol.
4. TREAT B. JOHNSON AND WILLIAM B. O'BRIEN: Hydantoins: New Method for Synthesis of Phenylalanin.

5. ARTHUR I. KENDALL and CHESTER J. FARMER: Studies in Bacterial Metabolism. III.
6. ARTHUR I. KENDALL, CHESTER J. FARMER, EDWARD P. Bagg, Jr., and ALEXANDER A. DAY: Studies in Bacterial Metabolism. IV.
7. A. I. RINGER: Influence of Glutaric Acid on Phloridizin Glycosuria.
8. ARTHUR W. DOX and LEONARD MAYNARD: Autolysis of Mould Cultures.
9. FREDERICK P. GAY and T. BRADFORD ROBERTSON: Comparison of Paraneuclein Split from Casein with Synthetic Paraneuclein Based on Immunity Reactions.
10. OTTO FOLIN and W. DENIS: Phosphotungstic Phosphomolybdic Compounds as Color Reagents.
11. OTTO FOLIN and W. DENIS: Tyrosin in Proteins as Determined by New Colorimetric Method.
12. OTTO FOLIN and W. DENIS: Protein Metabolism from Standpoint of Blood and Tissue Analysis. IV. Absorption from Large Intestine.
13. OTTO FOLIN and HENRY LYMAN: Protein Metabolism from Standpoint of Blood and Tissue Analysis. V. Absorption from Stomach.
14. P. A. LEVENE and G. M. MEYER: Action of Leucocytes on Glucose.
15. DONALD D. VAN SLYKE: Quantitative Determination of Aliphatic Amino Groups. II.
16. P. A. LEVENE and DONALD D. VAN SLYKE: Composition and Properties of Glycocoll Picrate and Separation of Glycocoll from Alanin.
17. DONALD D. VAN SLYKE: Conditions for Complete Hydrolysis of Proteins.
18. P. A. LEVENE and DONALD D. VAN SLYKE: Gasometric Determination of Free and Conjugated Aminoacids.

5. **Studies in Bacterial Metabolism.**—Kendall and Farmer find that *Micrococcus aureus* causes the progressive development of acidity in sugar free broth. This they attribute to fermentation of the carbohydrate radical of the protein present (Witte's peptone) by the organism. On the eighth day, however, an abrupt change from acidity to alkalinity takes place, which is explainable in that the carbohydrate radical is by this time practically exhausted, leaving the organism free to attack the protein. The result confirms the theory that carbohydrate which is utilizable protects protein from bacterial attack to a considerable degree. The Shiga bacillus and *Streptococcus pyogenes* have the same apparent specific affinity for the carbohydrate radical in Witte's peptone as the staphylococcus.

10. **Tests with Phosphotungstic Phosphomolybdic Compounds.**—Folin and Denis, experimenting with these substances, discovered a highly sensitive reagent for uric acid and a preparation apparently far more delicate than any color reagent yet known for phenol groups. The uric acid reagent is made by adding to 750 grammes of water 100 grammes of radium tungstate and eighty c. c. of eighty-five per cent. phosphoric acid, boiling gently for two hours with a reflux condenser, cooling, and diluting to one litre. In making the test, one or two c. c. of the reagent is mixed in a test tube with about the same volume of the solution to be examined, and an excess (three to ten c. c.) of a saturated sodium carbonate solution added. In the presence of uric acid, a blue color appears at once. If solid sodium carbonate is used instead of the solution, one part of uric acid in 500,000 parts of water can be detected.

13. **Absorption from Stomach.**—Folin and Lyman performed experiments in cats showing clearly that nitrogenous digestion products—glycocoll, alanin, peptone—are absorbed from the stomach.

14. **Action of Leucocytes on Glucose.**—Levene and Meyer ascertained that under the influence of leucocytes glucose undergoes dissociation exclusively into lactic acid. The lactic acid formed under these conditions remains intact. There was no evidence of the formation of any oxidation products of glucose.

ST. PAUL MEDICAL JOURNAL

August, 1912.

1. RICHARD O. BEARD: Present Relation of Medical Profession to Public.
2. HARRY P. RITCHIE: Mackenzie Operation for Fistula in ano.
3. F. E. WALKER: Rheumatism and Surgery.
4. GEORGE W. BEACH: Synthetic Study of Early Symptoms of Tuberculosis.

3. **Rheumatism and Surgery.**—Walker has discontinued the use of all medicine directed toward the blood or the pain directly, believing rather that sensible elimination and a temporary diet in conjunction with needed surgery are the only indications. Relief has followed this plan, and in the majority of patients it has been permanent. Of 3,000 cases of rheumatic intoxication sixty-three per cent. (849) came under the surgical class, the most frequent being for tonsils, pelvic diseases, and rectal disease. Recurrence of former "rheumatic" symptoms in the nonoperative cases was forty-one per cent.; in the operative cases one half of one per cent., and all other two per cent. In the treatment of the pain it is not a matter of increased cal nutrition. Walker believes it very doubtful that a nerve is ever directly or indirectly responsible for pain in these cases or in the neuralgias, as apparently proved by the temporary benefit, if any, from nerve stretching, injection of alcohol or saline, etc.

4. **Synthetic Study of the Early Symptoms of Tuberculosis.**—Beach insists that the demonstration of tubercle bacilli is not a sign of incipient tuberculosis, but of an advanced case. The synthetic study of symptoms consists in becoming familiar with such clinical pictures as present themselves daily, and if followed out will enable the general practitioner to diagnose incipient tuberculosis frequently and as accurately as other morbid conditions.

MONTHLY CYCLOPEDIA AND MEDICAL BULLETIN.

August, 1912

1. ALEXANDER D. BLACKADER: Presidential Address before American Therapeutic Society.
2. WILLIAM L. CLARK: High Frequency Desiccation; Uses and Limitations in Surgery and Dermatology.
3. LOUIS KOLINSKI: Proper Treatment of Diabetes Mellitus and Cure by Diet (To be concluded).
4. FRANCIS ASHLEY FAURE: Vasoconstrictors.
5. J. MADISON TAYLOR: Mind Control.

2. **High Frequency Desiccation.**—Clark describes briefly the technique and in greater detail the effects of, and indications for this procedure. The desiccation spark causes dehydration of tissue and has the power to penetrate from a small fraction of an inch to one inch or even more. A growth of considerable size may be destroyed by one application, and rapid repair follows. With correct technique the procedure is not very painful; in hypersensitive individuals a local anesthetic is employed. Warts and moles are usually destroyed with one application; a dry crust at once forms, which separates and falls off in from three days to one week. In the treatment of vascular naevi, angiomas, pigmentations, and tattoo marks the results have also been satisfactory. Several cases of chronic varicose ulcers, previously resistant to treatment, healed rapidly after the exuberant granulations were desiccated. In acne the use of an attenuated spark proved very effective. Neoplasms in the bladder or rectum, as well as, in suitable instances, the larynx may be destroyed by desiccation. The method is also available for trachoma, dry granular

conjunctivitis, corneal ulcerations, and pterygium. In superficial epitheliomata the results have been so satisfactory as to lead the author to discard all other treatment. In advanced epithelioma, where there is deep involvement, but no glandular metastasis, curettement is advised, or thorough excision, followed immediately by desiccation, and subsequently by x ray treatment. Desiccation is recommended in carcinoma only when the operative wound can be left open, in order that the debris may find exit. In inoperable cancer of the cervix desiccation is a useful palliative measure. In cancer of mucous membranes, such as the tongue, mouth, or lip, unless seen early, desiccation should not be employed alone, because the glands are usually involved, even though they are not palpable. The correct procedure is thorough excision, followed by desiccation if the wound is left open, or by fulguration if it is sutured, and then by the x ray.

Proceedings of Societies.

INTERNATIONAL CONGRESS ON HYGIENE AND DEMOGRAPHY.

Fifteenth International Meeting, held at Washington, D. C., September 23-28, 1912.

The President, Dr. HENRY P. WALCOTT, of Massachusetts, in the Chair.

(Continued from page 719.)

Prevention of Epilepsy.—Dr. L. P. CLARK, of New York, laid stress on the necessity of forbidding the marriage of persons exhibiting epileptic conditions or tendencies. He formulated five general rules. These were: More precise study of the family stock from which epileptics were recruited; still further elimination of birth injuries and accidents through better regulated obstetric practice; greater care in rearing neuropathic children; more exhaustive study and regulation of the whole manner of living of potentially epileptic adults, and, of greatest importance, the prohibition of intermarriage of neuropathics.

Production of Antirabic Immunity by Intraspinal Injections of Virus.—Dr. J. L. HARRIS, of St. Louis, described a series of experiments with dogs and rabbits by which immediate and direct immunization against rabies was secured by the injection of fractional parts of a grain of noninfective rabies virus of a special type prepared by himself. The virus was produced from the brain of a rabbit dead of rabies, frozen with carbon dioxide snow, dried in a vacuum at a very low temperature, and kept in an ice box. He declared this virus would lose its infectivity only after a period of many months.

Influence of Bacillus Carriers in the Dissemination of Infection.—Dr. CHARLES NORRIS, of New York, gave a résumé of the work of the pathological department of Bellevue Hospital, which consisted of the investigation of every typhoid convalescent for the presence or absence of typhoid bacilli. These patients were detained in the hospital wherever possible until it was found that they no longer eliminated typhoid bacilli. Even when discharged

the patients were supplied with printed information blanks outlining the elementary rules of hygiene and cleanliness so that they might not convey the disease to others. He urged that this same system be adopted by hospitals generally.

Influenzal Meningitis; Experimental and Clinical.—Dr. MARTHA WALLSTEIN, of New York, stated that this disease might be brought within the control of medical science. She gave an account of an immune serum which was prepared by inoculating a goat with increased doses of influenza bacilli. This antiinfluenza serum was injected into the spinal canals of monkeys which had been inoculated and were suffering from influenza meningitis, and it brought about a complete cure. The animals fully recovered in one week after receiving the treatment.

Dr. ABRAHAM SOPHIAN, of New York, related some experimental work which he had done with reference to cerebrospinal meningitis. He stated that eleven medical students who volunteered were vaccinated, their blood was examined and studied regularly for protective substances, and it was found that vaccination produced a high degree of immunity against the infective agent of meningitis.

Antimalarial Work in Panama.—Dr. J. A. LE PRINCE, of the Canal Zone, stated that as a result of scientific investigations and the adoption of modern scientific methods of combating malaria and destroying the insects that carry it, the sick roll in the zone hospitals for July, 1912, was seventy-five per cent, less than for the same period six years ago.

Mortality and Causes of Death by Occupations.—Dr. JACQUES BERTILLON, of Paris, France, pointed out that in workers in the professions, exposed to the changes of weather which compelled the operatives to rest, all causes of death were frequent, but that liver diseases were less frequent than one would imagine, since alcoholism was very common in these professions. Diseases of the respiratory system were rare in all professions generally followed in confined places, but clerks in railroad offices were the only ones in whom tuberculosis was rare.

Vital Statistics.—Hon. JUDSON C. CLEMENTS, of Washington, D. C., said it was only reasonable to suppose that much disease and consequent mortality resulted from the pollution of the highways, both by refuse from passing trains and from water carriers, and if it could be proved, Congress would legislate to remedy the condition.

Dr. WILMER R. BATT, of Harrisburg, Pa., described the model law which they had in that State regarding vital statistics, and he thought it was perhaps the best that could be obtained. The census bureau had been working for years to develop a law such as could be strictly enforced, with definite and accurate results.

Bacterial Water Examinations.—Dr. EDWIN O. JORDAN, of Chicago, in a paper on "Bacterial Water Examinations," emphasized the importance of bacteriological tests for determining the presence of colon bacilli in water. This bacillus was the intestinal bacterium common to animals and human beings, and its presence in water meant the pollution of the stream or the lake in question.

Professor GAERTNER, of Jena, stated that the ex-

amination of the physical conditions surrounding a water supply was of great importance, yet bacteriological tests might miss the existence of colon bacilli, and a sanitary survey of the same region might determine the fact that the water supply was being polluted or liable to pollution.

Conservation of Child Life.—Dr. CHARLES G. KERLEY, of New York, made a forcible appeal for the creation of a commission or a committee by which the State, through its subordinates, might have authority over every child in the State, as it was only by such means that the profession would be able to solve many of the problems confronting it.

Cost of High Living in Its Relation to Public Health.—Professor MAX RUBNER, of Berlin, discussed the changed conditions in the last half century and said they had brought the question of feeding the human race to a critical point. He urged that the school children be watched carefully, and that in the cases of those children who failed to receive proper or sufficient nourishment at home, the deficiency be made up. This was being done in some of the lower schools in Germany. There had been a distinct step backward in the organism of the working man, due to two causes, first, insufficient nourishment, and, second, the fact that the new era of machinery had specialized and confined his physical exertions so that he got little or no natural general exercise. In order to have on his table the same articles which appeared in the menus of the more wealthy, he had reduced the quantity of his nourishment to an insufficient amount. To correct the terrible deficiencies of race nourishment he urged the establishment of a course of housekeeping in public schools.

Poliomyelitis, Etiology, and Mode of Transmission.—Doctor NETTER, of Paris, France, said that experimental pathology had taught us the part played by nasal and buccopharyngeal secretions in the propagation of poliomyelitis. Kling, Wernstedt, and Petterson had confirmed the virulence of these secretions, as well as from the intestinal contents, whereas Osgood and Flexner proved the persistence of these virulent agencies in the throat and upper part of the nose, even after the patient had recovered. If there were added to these theories those of resistance of contagion to desiccation and also the possibility of the disease being transmitted by flies, we should have all the essential data we need about prophylaxis. The point of interest was the study of the conditions as to how the disease made its presence felt, whether in an isolated form or in a pronounced extensive form. The appearance of cerebrospinal meningitis, in 1909 and 1910, in France in the neighborhood of Paris was preceded by a small epidemic in 1898, and already at this time they had found this latter succeeded by an abnormal prevalence of poliomyelitis.

Dr. FRANCIS HARBITZ, of Christiania, presented a report on epidemic poliomyelitis in Norway, discussed its etiology, and the possibilities of its prevention. In 1911, the epidemic character of this disease was very much in evidence, in that it ravaged large tracts of the country and also districts where it never before had been known. There were this year about 1,250 cases with a mortality of eight to ten per cent. As to treatment and meas-

ures to be directed against the disease, he said there should be immediate notification to the board of health of every case. The abortive cases should be included. There should be isolation of the sick. There should be careful disposition of the excretions and secretions of patients, particularly from the mouth and throat. There should be thorough disinfection after the termination of the disease. Particular attention should be given to the lighter abortive cases and to the possibility of the disease being carried through the intermediary of healthy persons. With reference to the after treatment, massage should be persisted in for weeks or months or years as the case might demand. There was a movement on foot to give those patients that were crippled from the disease massage, surgical or orthopedic treatment at the public expense.

Dr. KARL LANDSTEINER, of Vienna, Austria, described the sanitary measures that should be adopted for poliomyelitis, saying there should be obligatory report of cases to the board of health, isolation of the sick persons, as far as it was possible, restriction of intercourse, especially of those people who were in close contact with those afflicted with the disease, disinfection of the secretions and of the stools. As the virus had been detected in the dust of the homes of such sick people, special stress must be laid upon the disinfection of homes, apartments, etc. It was advisable in times of epidemics to pay special attention to inflammatory affections in the region of the nose. Antiseptic treatment of this region was probably very useful. Further progress in prophylaxis was to be expected from future epidemiological investigations with the aid of animal experiments.

Professor AXEL HOLST, of Norway, mentioned one family of nine members who were attacked with the disease in two weeks, one case following the other in rapid succession. Not many cases occurred in the crowded quarters of a town or city. Since 1860 they had a law of compulsory notification of this disease.

Professor ALFRED PETERSSON, of Stockholm, Sweden, spoke on the modes of infection of poliomyelitis and its prevention. In explaining the spread of the contagion of infantile paralysis he alluded to the possibility of transmission by means of blood sucking animals. Such investigations, however, had not been conducted on a large scale, but those already performed showed that the presence of the microbe could only with difficulty be demonstrated in the blood. Neither Landsteiner and Levaditi nor Römer succeeded in transferring poliomyelitis from monkey to monkey by means of blood. The microbe or virus had thus been found to exist in the central nervous system, in the mucous membranes in the nose of monkeys, in the tonsils and pharyngeal mucous membranes of human beings, in some of the lymphatic glands of man and monkeys, in the salivary glands of monkeys and, exceptionally, in the blood.

Dr. SIMON FLEXNER, of New York, said that this virus could be recovered from the central nervous system, but not from the cerebrospinal fluid after the third or fourth day following the inoculation. It could only be recovered rarely from any of the internal organs of the body, but it could

be recovered from the nasal mucous membrane and its secretions and the mesenteric glands.

Dr. M. NEUSTAEDER, of New York, was able to produce experimentally poliomyelitis in monkeys, in 1911, with dust experiments. (See this JOURNAL, October 21, 1911.)

Dr. MARK W. RICHARDSON, secretary of the State Board of Health of Massachusetts, said poliomyelitis was distinctly a disease of suburban or rural communities rather than cities, this observation being based on 2,138 cases.

Dr. M. J. ROSENAU, of Harvard University, detailed a series of experiments which seemed to show that the stable fly is at least one of the causal agents or transmitters of this disease. This fly was technically known as *Stomoxys calcitrans*. (See editorial article in this JOURNAL for October 5, 1912.)

Teachers in Public Health.—Dr. F. F. WESBROOK, of Minneapolis, stated it was advisable that under ordinary circumstances a medical man trained by years of service in actual sanitary work should be at the head of the public health department. He should consult frequently with the various medical, scientific, and laboratory teachers so as to see that a proper foundation of technical facts and methods was laid. It should be his function to see that all teaching done by himself and others was properly coordinated, assimilated, and applied. In the ultimate analysis no official public health protective mechanism could operate without the intelligent and sympathetic interest and support of the medical profession, since its members were responsible for individual and family welfare, which in the main represented public health.

Municipal Clinic of San Francisco.—Dr. JULIUS ROSENSTERN, of San Francisco, described a clinic which was operated by a citizens' committee. Physical examination of infected persons was compulsory and each person registered was supposed to report every five days. The only fee charged was fifty cents for each patient, and the clinic was entirely supported by that means. By means of such a clinic he thought they had a sane and humane way of regulating the social evil.

Rôle of Bovine Tuberculosis in the Production of Human Tuberculosis.—Dr. B. H. WATERS, of New York, thought the only means by which the spread of tuberculosis from human agencies might be controlled was through the dispensary and by systems of registration. He urged that adequate hospital accommodation for open cases be established in all large cities.

Dr. WILLIAM H. PARK, of New York, pointed out that the bovine bacillus was responsible for the disease in seven per cent. of the children under five years of age; that the bovine bacillus frequently attacked the lymphatic glands of children ranging from six to sixteen years of age, and bovine tuberculosis was rarely fatal in children of more than five years of age.

Milk Depots.—Dr. JANET LANE-CLAPON, of King's College, London, said that the establishment and operation of these depots in England did not tend to encourage the natural feeding of babies by the mothers, and under the broadest consideration

could not be said to be of great assistance in reducing the infant mortality in the congested centres of England.

Effects of Industrial Strain on the Working Woman.—Dr. ROSALIE SLAUGHTER MORTON, of New York, said that education was the great need, but legislatures should pass laws protecting the health of laborers when they and their constituents really comprehended that the health of the citizens was the greatest asset of any nation, and she thought this would be brought about when a greater number of the constituents were interested in the health of women in all classes.

Protection of Railway Passengers.—Dr. H. M. BRACKEN, of Minnesota, thought it was the duty of railways to protect their passengers from disease. The traveling public spread disease through ignorance, indifference, and selfishness. Some people traveled on railway trains, knowing that they were suffering from a contagious or infectious disease, while others traveled knowing that they were carriers of the germs of disease, which did not affect them, but which could be communicated from them to others.

Dr. J. D. M. HAMILTON, of Kansas, in discussing the prevention of accidents, the education and care of railway employees, expressed the opinion that the time was not far distant when every engine pulling a train in interstate commerce would be directed by an engineer holding a Federal license, as there was no more reason in his judgment why the Federal government should not take upon itself supervisory functions in regard to railroad employees than with reference to railroad equipment and appliances.

American Hookworm.—Dr. CH. WARDELL STILES, and Dr. W. L. ALTMAN, of Washington, D. C., in a joint communication on this subject, stated that they had examined and studied 12,980 hookworms which were passed in 102 cases of infection with *Necator americanus* with a view to testing the suggestion of Lichtenstern that a determination of the proportion of males and females passed during treatment gave a practical indication of the completeness or incompleteness of the cure. Without denying the view of Lichtenstern, as applied to *Ankylostoma duodenale*, the authors came to the conclusion that said view did not apply to infection with *Necator americanus*, and therefore did not offer an additional practical factor in the eradication of hookworm from the United States.

(To be concluded.)

Letters to the Editor.

THE DOCTOR IN THE CHURCH.

NEW YORK, September 23, 1912.

To the Editor:

The most efficient physician is the one who is most useful to the individual and society. The church is the natural clearing house for social service. "Theology is a belief; religion is a life."

Perhaps no man has less command of his time than a doctor. The busiest man, however, can find some definite

line of service which he can do or direct, especially where he can secure the aid of others. Such is the case in the church. With the cooperation of a broad gauged minister the doctor can find through the educational or social side of the church an opportunity for recreative service which will aid a good cause and serve to divert his mind from the depressing influences of the sickroom. At the same time the doctor will realize that these recreative hours are quite as productive as the hours of constant personal service. I speak from experience, and submit the following series of lectures to show what I mean.

This is the Fifth Annual Course of Lectures given at the Mount Morris Baptist Church, Fifth Avenue, between 126th and 127th Streets, at 10 o'clock Sunday mornings, beginning October 13th, to mixed audiences of physicians and the general public.

My hours of recreation for the past six months have been used to get these men together, and such work is really a pleasure and real recreation. Our speakers deal with the evolution of human efficiency—a timely topic. One thousand people are registered in the course. There is nothing in this kind of work contradictory to our scientific training, and personally I see nothing in rational church work which should deter any doctor from giving his best effort to its promotion.

J. GARDNER SMITH, M.D.

CHANCES FOR YOUNG DOCTORS IN THE FAR EAST.

NEW YORK, October 4, 1912.

To the Editor:

The Yale Hospital in Changsha, Central China, needs two men for its staff in the summer of 1913.

Men who have recently completed their internship in an American hospital, and who wish for a large practical experience in medicine or surgery, will find this a splendid opportunity. The last appointee writes that he has had three times as much experience in his first year there, as he would have had in the United States.

We have an up to date surgical equipment with a great deal of major surgery; and a large medical clinic with a good laboratory for research work. Our old hospital has forty beds, and we are soon to begin the construction of a fine, new plant.

The places are open for either a temporary or a permanent appointment, preferably the latter; and men who have received a Yale degree will be given preference. I shall be very glad to hear from interested men who will state their qualifications, and most pleased to give them full information about the conditions of appointment.

EDWARD H. HUME, M.D.,
Physician in Charge

156 Fifth Avenue, Room 1228.

A THEORY REGARDING POLIOMYELITIS.

REXBURG, IDAHO, October 1, 1912.

To the Editor:

Anent your recent editorial article in the JOURNAL for September 28th, about quarantining for poliomyelitis in the epidemics at Buffalo and Los Angeles, I believe there is another explanation of the control of the disease beside quarantine.

I had twelve cases here about the same time as the occurrence of these epidemics—the first weeks of August. And while we quarantined, it was not strict, the schools were not closed, and not a single case could be traced to exposure. What we did find, though, was that all had eaten freely of ripe raspberries, those nearest the ground probably being picked and eaten, because the patients were all between the ages of two and seven years (only one of the latter), and these would be the easiest for them to reach.

I am satisfied that the microorganisms, most likely of the fungi family, were growing on the berries, and those nearest the ground would be favorable to this growth because of the dampness and protection from wind and sun. Any vegetable might likewise be attacked and, if eaten raw, produce the disease.

The life cycle probably ending at a certain time, the

disease is stamped out, and naturally rigid quarantine receives the credit.

While I believe it is infectious, I do not believe it is markedly so; direct contact being necessary, with the secretions and not through the agency of a third person.

I first thought that the vegetable kingdom might have something to do with the etiology, two years ago, while taking care of the first cases reported in this State. I had two cases occurring in brothers about seven and nine years old respectively, about ten miles out of Boise. These boys lived on a ranch, seldom left it, and more seldom went to Boise; they were confined to the same room and, in spite of the mother and father watching, a little sister of two and a half years would get in and run from one bed to the other; she was just tall enough to reach their faces. She did not contract the disease. No other cases occurred in this neighborhood, no cases of a suspicious nature existed previously, and none have occurred since.

G. C. ESPE, M.D.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Gonococcal Infections. By Major C. E. POLLACK, Royal Army Medical Corps, and Major L. W. HARRISON, Royal Army Medical Corps. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1912. Pp. xxi-222. (Price, \$2.)

The first chapters of this book on the pathology and biological relations of gonococcal infections and vaccine and serum therapy are excellent. The authors take up infection in both male and female and are very happy in their presentation of this subject. For instance, see page 61: "Speaking generally, gonococcal infections seem to commence as acute processes and to end as chronic, and it appears as if the tissues made a great effort at first to remove the infecting organisms, but eventually came to tolerate their presence under mild protest." Their work in the line of complement reaction is apparently not as far advanced as in this country. On page 76, we read: "Our work in this direction has confirmed the results of these authors, but whether the test is sufficiently specific to be of use as a diagnostic measure cannot be stated at present." The authors differ in many places from the generally accepted idea of treating chronic urethritis. For example, "in the chronic stage there is little or no exudation, hence local treatment is of little or no use and the best results are to be obtained by improving the patient's general health." Some of the advice that they give as to treatment is manifestly impracticable in the United States: "During the acute stage of the disease he should remain at home, but if obliged to continue at work he must take life as easily as possible and pay for 'taxis' instead of strap hanging in tubes or running after motor omnibuses in motion." The price of "taxis" in England is evidently less than that in the United States. For the general run of patients it would be somewhat difficult to follow advice as to sterilization, etc. "The syringe and the cones, if these are used, should be disinfected after being used; this can be done by boiling or by soaking in a strong antiseptic solution for some hours, after which they should be washed in sterile salt solution and wrapped up in sterile gauze till required again." The authors omit to mention many accepted methods of treatment; for example, the use of the rubber catheter in the treatment of urethritis. Here and there a touch of humor enters into the work, for example: "If the condition of the urine remains satisfactory the man is then given a pint of beer and four ounces of mixed pickles daily for another five days." Not infrequently the authors, while mentioning various ways of treatment, leave one in the dark as to which method is to be preferred. In speaking of pointed warts on page 162 they say: "These applications (caustics) are however usually ineffective and are extremely likely to get on to the surface of the glands and cause severe excoriation of the part. The actual cautery or a scalpel may be used to remove the warts, but this is never an

easy operation, as they are very sensitive and bleed freely when the surface is broken. Very large masses have been successfully removed by repeated exposures to x rays." On page 175, in discussing retention of urine in acute gonorrhea, they limit their remarks to "retention of urine may occur in consequence of a spasmodic contraction of the sphincter due to acute gonorrhea"; apparently forgetting the one important cause of urinary retention in this condition is acute prostatitis, or prostatic abscess. All in all, the latter chapters of the book on treatment and complications of gonorrhea are too brief and too incomplete for such a book.

The Hospital Corps Quiz Compend. A Manual for the Hospital Corps, U. S. Army Hospital Corps, National Guard, Red Cross Association, and for Students and Practitioners. By FRANK C. GRIFFIS, M.D., Medical Reserve Corps, U. S. Army. Columbus, Ohio: The Edward T. Miller Company, 1912. Pp. 218. (Price, 75 cents.)

This handy little book, with a green¹ cover, will supply a want and enable those who elect to enlist in the hospital corps soon to become useful medical assistants. To be thoroughly posted on the contents of Griffis's compend would mean a model hospital corpsman, better informed than many so called doctors. As the book is prepared it makes interesting and easy reading, and its charm is the brevity of the subject matter treated and the requirements named. The system of italicized questions followed by full and correct answers, is a novel feature of the work, which serves much better to fix the knowledge in a man's memory.

We might add, the compend is a companion to *Field Service Regulations, United States Army*; in that, Article No. 10, The Sanitary Service, is so frequently and pertinently referred to. This necessary reference compels more or less study of the *Field Service Regulations, United States Army*, the war department document. Teachers must welcome this booklet with great satisfaction, because a systematic study of this compend is equal to a special course in military medical instruction, fitting its students to act intelligently in all matters relating to hospital work and the care of the sick and wounded.

It has been the author's aim to put into the hands of the militia organizations a manual that will give an outline of what is required of a soldier in the hospital corps of the United States Army, when he is called upon for active duty. These requirements include a knowledge of the following subjects: Sanitation of the camps; the rendering of first aid to, and the care of the sick and wounded in the hospital; the government of the hospital as regards mess management, ward management, the keeping of records, and the like.

Under the heading, Ward Management in a Hospital, we would take exception to our author who would not permit smoking in the lavatory. Where could hospital patients find a better place? However, seriously, Griffis's compend is a good book with an index that is an index, and ought to be in the hands of every hospital corpsman, medical assistant, and nurse in the sanitary service of the United States, no matter what branch of the service.

Dunn's Pure Food and Drug Legal Manual. Edited by CHARLES WESLEY DUNN, A. M., of the New York Bar. Federal, State, and Territorial General and Special Food, Drug, Paint, Oil, and Turpentine Laws, Rules and Regulations, Food Standards, Food Inspection Decisions, and Leading Decisions of the Courts, Uniformly Classified and Arranged Cyclopedically of Information. New York: Dunn's Pure Food and Drug Legal Manual Corporation, 1912-1913. Pp. xiii-2347. (Price, \$12.)

All who are concerned in the administration of food and drug laws realize the difficulties arising from the differences between the National law and the various State enactments. There is a growing tendency in State legislation to pay some regard to the Federal laws and those other States touching on the same subject, and there seems to be a general convergence toward uniform lines of legislative enactment. This tendency is quite noticeable, particularly in State legislation regulating the sale of food and drugs, most of which is modeled on the National law

of 1906. This is a valuable manual of the food and drugs acts, both National and State, which has recently been compiled by Mr. Dunn, of the New York State public bar and will be found most useful by all concerned in the enforcement of food and drug laws. Two features of this publication are particularly notable, namely, the method of classification by topics and the information given under the head of administration, which includes an enumeration of the various officials charged with the administration of the law and a statement of the sum which has been appropriated for its enforcement. This latter information is an important guide in determining whether or not the law is enforced and, if so, to what extent, for unfortunately we have many legislatures which enact laws without providing any means for their enforcement. In its availability as a work of reference the work is justly termed a manual, but its size, the first volume having nearly 2,400 pages of small type, is not at all in consonance with what is generally understood by the term "manual."

Leitfaden der Akustik für Ohrenärzte. Von Dr. M. TH. EDELMANN, Prof. h.c. der Kgl. techn. Hochschule München. Mit 80 Abbildungen und einem Porträt. Berlin: S. Karger, 1911. Pp. 118.

This little work of 116 pages is a rather deep excursion into a rather small field of physics, which is of interest to the otologist because, aside from the fact that all scientific work is of interest to him, it presents very fully about all that is known mathematically of sound. The first subject dealt with is the vibration of elastic bodies, with especial reference to that of air, the graphic delineation of which is very good. Tone is thus considered; its strength, height, intervals, and interference, all worked out mathematically and delineated graphically. About twenty-five pages are devoted to tuning forks, about twelve to Galton's whistle, a less number to Milde's plate, a substitute for the tuning fork in the production of very high tones, Koenig's bundle of steel cylinders, the monochord, and resonators with resonant bases. About twenty-seven pages are given to the objective measurement of tone strength and hearing power, and the remainder, about fourteen pages, to the description of a working model of the sound conducting apparatus.

Vorlesungen über Diätbehandlung innerer Krankheiten gehalten vor reifen Studierenden und Ärzten von Prof. Dr. H. STRAUSS, Direktor der inneren Abteilung des jüdischen Krankenhauses in Berlin. Mit einem Anhang "Winke für die diätetische Küche" von ELISE HANNEMANN, Vorsteherin des Haushaltungs-Lehrerinnen-Seminars und der Kochschule des Lette-Vereins in Berlin. Dritte, vermehrte und verbesserte Auflage. Berlin: S. Karger, 1912. Pp. viii-429.

As we have reviewed the two previous editions of this valuable textbook in these columns, we only wish to call the reader's attention to the fact that a new, revised, and enlarged edition has appeared. The changes made are of more importance than in the second edition, especially in the chapter on tumors of the stomach, diseases of the heart and kidney, gout, and diabetes. Interesting, among other additions, is the paragraph on food for old people, which is well worth reading.

Die Krankheiten der Bronchien. Von Prof. Dr. FRIEDRICH ALEIN HOFFMANN in Leipzig. Zweite, neubearbeitete Auflage. Mit 11 Holschnitten. Wien und Leipzig: Alfred Hölder, 1912. Pp. iv-224.

That this book is a part of Nothnagel's *System of Medicine* is sufficient indication of its value. In this volume we find that the diseases of the bronchi are dealt with very fully and satisfactorily. At the beginning of each subject there is a list of the more important works that have been drawn on. The arrangement of the text is good, but there is a fault common to many German publications, the lack of an index. The table of contents is very complete, but it cannot take the place of a good index. There is one element in the work that is most pleasing. In many textbooks one finds much concerning etiology and diagnosis, but little concerning what is to be done after the diagnosis has been made. Doctor Hoffmann, however, deals with the therapeutic side very thoroughly. This work can be highly recommended.

¹At night the positions of sanitary formations are marked by green lanterns. Formerly they were red lights, which now designate "ordnance."

Die physikalische Therapie der Gelenkkrankheiten für Aerzte und Studierende. Von Dr. EDUARD WEISZ. Budapest. Mit 83 Textabbildungen. Berlin und Wien: Urban & Schwarzenberg, 1912. Pp. viii+265. (Price, \$1.50.)

In the field of diseases of the joints there have appeared during the last decade a number of therapeutical methods, not only surgical or chemical, but other forms such as massage, hyperemia, hydrotherapy, etc. All these the author has collected and presents in the shape of a very readable manual. The book is divided into two parts: Part one takes up the general aspect and treatment, while in part two the author views the subjects from the standpoint of the specialist. It is a very practical book.

Official News.

Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the fourteen days ending October 2, 1912:

Cofor, L. E., Assistant Surgeon General. Directed to proceed to Indianapolis, Ind., to present a paper before the National Conservation Congress, Wednesday, October 2d; directed, returning from official detail at Ellis Island, N. Y., to stop at Reedy Island Quarantine Station for conference with medical officer in command relative to suspected case of smallpox on steamer *Graf Waldersee*. **Corput**, G. M., Passed Assistant Surgeon. Directed to proceed to New Orleans, La., for inspection of launch now being fitted out for use at the New Orleans Quarantine Station. **Frost**, W. H., Passed Assistant Surgeon. Directed to proceed to Buffalo and other places in Western New York to investigate outbreaks of infantile paralysis. **Glennan**, A. H., Assistant Surgeon General. Granted one month's absence from September 30, 1912. **Grimm**, R. M., Assistant Surgeon. Directed to report at the Bureau, Monday, October 14, 1912, at 10 o'clock, a. m., to the chairman of a board of medical officers for examination to determine his fitness for promotion to the grade of passed assistant surgeon; detailed to represent the Service at the National Conference on Pellagra, to be held in Columbia, S. C., October 2d, 3d, and 4th. **Lavinder**, C. H., Passed Assistant Surgeon. Detailed to represent the Service at the National Conference on Pellagra, to be held in Columbia, S. C., October 2d, 3d, and 4th. **Leake**, J. P., Assistant Surgeon. Directed to proceed to Buffalo and other places in Western New York, including Batavia, to assist Passed Assistant Surgeon W. H. Frost in an investigation of outbreaks of infantile paralysis. **Lumsden**, L. L., Passed Assistant Surgeon. Directed to proceed to Clinton, Iowa, and such other towns along the Mississippi River as may be necessary to investigate an epidemic of typhoid fever. **McLaughlin**, A. J., Passed Assistant Surgeon. Directed, upon the request of the chairman of the American Section of the International Joint Commission, to proceed to Ottawa, Canada, to arrive October 1, 1912, for the purpose of furnishing expert advice to the commission relative to the pollution of streams in international waters. **Preble**, Paul, Assistant Surgeon. Directed to report at the Bureau, Monday, October 14, 1912, at 10 o'clock, a. m., to the chairman of a board of medical officers for examination to determine his fitness for promotion to the grade of passed assistant surgeon. **Schuster**, B. L., Acting Assistant Surgeon. Granted thirty days' leave of absence, without pay, during the current calendar year, the dates of such absence to be reported to the Bureau. **Stimson**, A. M., Passed Assistant Surgeon. Detailed to attend the annual meeting of the American Association for the Study and Prevention of Infant Mortality, to be held in Cleveland, Ohio, October 2d to 5th. **Stuart**, Albert F., Acting Assistant Surgeon. Granted thirty days' leave of absence, from September 23, 1912.

In the Act of Congress approved August 24, 1912, making appropriations for the current and contingent expenses of the Bureau of Indian Affairs, for fulfilling

treaty stipulations with various Indian tribes, and for other purposes, for the fiscal year ending June 30, 1913, there is appropriated the sum of \$10,000 to enable the Public Health Service to make a thorough examination as to the prevalence of tuberculosis, trachoma, smallpox, and other contagious and infectious diseases among the Indians of the United States. Commissioned officers of the Service have been detailed to carry out the provisions of this act and for investigations among the Indians domiciled in the States named as follows: Surgeon Taliaferro Clark, Iowa, Minnesota, and Wisconsin; Passed Assistant Surgeon M. J. White, Montana; Passed Assistant Surgeon L. D. Fricks, Arizona; Passed Assistant Surgeon W. C. Billings, California, Nevada, and Oregon; Passed Assistant Surgeon J. W. Schereschewsky, North and South Dakota; Passed Assistant Surgeon B. J. Lloyd, Washington and Idaho; Passed Assistant Surgeon F. C. Smith, New Mexico; Passed Assistant Surgeon M. C. Guthrie, Oklahoma; Passed Assistant Surgeon R. A. Herring, Kansas, Nebraska, Wyoming, Colorado, and Utah.

Board Convened

Board of medical officers convened to meet at the Bureau, Monday, October 14, 1912, at 10 o'clock a. m., for the examination of Assistant Surgeons Paul Preble and R. M. Grimm to determine their fitness for promotion to the grade of Passed Assistant Surgeon. Detail for the board: Assistant Surgeon General W. J. Pettus, chairman; Assistant Surgeon General W. C. Rucker, member; Passed Assistant Surgeon B. S. Warren, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending October 5, 1912:

Clarke, Joseph T., Lieutenant Colonel, Medical Corps. Relieved from duty at Vancouver Barracks, Wash., and will proceed to Fort Meade, D. D., relieving Major B. J. Edgar, Jr., Medical Corps, who will proceed to Fort William Henry Harrison, Mont., for duty. **Cole**, Clarence Le R., Captain, Medical Corps. Relieved from duty at Fort Logan, Colo., and ordered to the Army Medical School, Washington, D. C., for a special course of instruction. **Ford**, Joseph H., Major, Medical Corps. Granted leave of absence for one month and fifteen days. **Gilchrist**, Harry L., Major, Medical Corps. Relieved from duty at Fort Omaha, Neb., and ordered to the Division of Militia Affairs, Washington, D. C., for duty. **Harris**, Jesse R., Major, Medical Corps. Arrived at Fort Slocum, October 2d, for duty. **Kelly**, J. P., Lieutenant, Medical Reserve Corps. On leave of absence for two months and two days from October 3d. **McEnery**, Douglas W., Lieutenant, Medical Corps. Assigned to permanent duty at Fort Logan, Colo. **Schoenleber**, A. W., Lieutenant, Medical Reserve Corps. Reports arrival at Army Medical School, October 4, 1912. **Wallace**, G. S., Lieutenant, Medical Reserve Corps. Reported for duty at Fort Clark, Texas, September 26th, from leave of absence. **Webber**, H. A., Major, Medical Corps. Left Fort Logan H. Roots, Ark., on fifteen days' leave of absence.

Each of the following named officers of the Medical Reserve Corps is relieved from duty at the station designated and will then proceed to his home and stand relieved from active duty, to take effect upon the expiration of the leave of absence granted him as follows: First Lieutenants Walter Whitney, Fort McPherson, Ga., three months and eighteen days; Fred T. Koyle, Fort Terry, N. Y., two months and nineteen days; Frederic E. Jenkins, Fort Leavenworth, Kans., two months; James C. Ballard, Presidio of San Francisco, four months; Henry W. Eliot, Fort McKinley, Me., one month; William O. Cutliffe, Fort Lawton, Wash., two months and sixteen days; Robert E. Sievers, Fort Warren, Mass., four months; John N. Merrick, Benicia Arsenal, Calif., four months; Charles T. Dulin, General Hospital, Fort Bayard, N. M., four months; Herbert H. Smith, Fort Lincoln, N. D., two months and twenty-three days; John P. Kelley, College Park, Md., two months; Arthur C. Delacroix, Fort Columbia, Wash., four months; George S. Wallace, Fort Columbia, Wash., two months and ten days.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the two weeks ending October 5, 1912:

Beyer, H. G., Medical Director. Detached from command of the Naval Medical School, Washington, D. C., and ordered home to await orders; ordered to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C. **Bloedorn**, W. A., Assistant Surgeon. Detached from the *Helena* and ordered to Yokohama Hospital. **Bunker**, C. W. O., Passed Assistant Surgeon. Detached from the Naval Hospital, Mare Island, Cal., and ordered to the Naval Station, Guam. **Casto**, D. H., Passed Assistant Surgeon. Detached from the Receiving Ship, Navy Yard, Puget Sound, Washington, and ordered to the *St. Louis*. **Charlton**, C. F., Assistant Surgeon. Ordered to the Naval Medical School, Washington, D. C. **Cole**, H. W., Passed Assistant Surgeon. Detached from the Naval Recruiting Station, Baltimore, and ordered to the Naval Hospital, Mare Island, Cal. **Davis**, R. G., Assistant Surgeon. Ordered to the Naval Medical School, Washington, D. C. **Dessez**, P. T., Passed Assistant Surgeon. Detached from the Naval Hospital, Boston, Mass., and ordered to the Navy Yard in that place. **Dodge**, A. H., Passed Assistant Surgeon. Ordered to the Atlantic Reserve Fleet. **Dragoon**, C. H., Assistant Surgeon. Ordered to the Naval Medical School, Washington, D. C. **Dunbar**, A. W., Surgeon. Detached from the Bureau of Medicine and Surgery, Navy Department, and ordered to command the Naval Hospital, Washington, D. C. **Findeisen**, W. E., Assistant Surgeon. Commissioned an assistant surgeon in the navy from October 2, 1912. **Gatewood**, J. D., Medical Director. Ordered to command the Naval Medical School, Washington, D. C., September 30th. **Grove**, W. B., Surgeon. Detached from Washington Hospital, and ordered to the *Arkansas*. **Hale**, G. D., Passed Assistant Surgeon. Detached from the Naval Hospital, Las Animas, Colo., and ordered to the Receiving Ship, Navy Yard, Puget Sound, Wash. **Harlan**, Tharos, Assistant Surgeon. Detached from the Naval Hospital, Canacao, P. I., and ordered home to await orders. **Hayes**, O., Acting Assistant Surgeon. Ordered to the Marine Recruiting Station, Denver, Colo. **Holeman**, C. J., Passed Assistant Surgeon. Detached from the Naval Recruiting Station, Indianapolis, Ind., and ordered to the Naval Hospital, Las Animas, Colo. **Johnson**, L. W., Passed Assistant Surgeon. Detached from the Naval Hospital, Philadelphia, and ordered to the Naval Recruiting Station, Baltimore, Md. **Kelly**, H. L., Passed Assistant Surgeon. Detached from the Navy Yard, Mare Island, Cal., and ordered to the Receiving Ship, Navy Yard, N. Y. **Lowell**, C. H., Acting Assistant Surgeon. Appointed an acting assistant surgeon in the navy, September 27, 1912. **McEwan**, S. W., Acting Assistant Surgeon. Appointed from September 16, 1912; ordered to the Naval Recruiting Station, Cincinnati, Ohio. **Mendelson**, R. W., Acting Assistant Surgeon. Ordered to the Naval Recruiting Station, Des Moines, Iowa. **Miller**, C. K., Acting Assistant Surgeon. Appointed from September 16, 1912; ordered to the Naval Recruiting station, Newark, N. J. **Porter**, F. E., Surgeon. Detached from the Navy Yard, Portsmouth, N. H., and ordered to the Naval Hospital, Boston, Mass., for treatment. **Post**, D. C., Assistant Surgeon. Commissioned from October 2, 1912. **Sellers**, F. E., Passed Assistant Surgeon. Detached from the Naval Station, Guam, to waiting orders. **Stone**, E. P., Medical Inspector. Detached from the Marine Recruiting Station and ordered to the Naval Recruiting Station, Denver, Colo. **Stratton**, R. J., Passed Assistant Surgeon. Detached from the Navy Recruiting Station, Omaha, Neb., and ordered to the *Florida*. **Thomas**, G. C., Passed Assistant Surgeon. Ordered to the Navy Yard, Mare Island, Cal., October 20th. **Thomas**, G. E., Assistant Surgeon. Detached from Yokohama Hospital and ordered to the *Helena*. **Vickery**, E. A., Passed Assistant Surgeon. Detached from the *St. Louis* and ordered home to await orders. **Whiteside**, L. C., Passed Assistant Surgeon. Detached from the Navy Yard, Boston, and ordered to the Naval Hospital, Mare Island, Cal. **Williams**, R. B.,

Surgeon. Ordered to the Naval Hospital, Brooklyn, N. Y. **Wood**, C. C., Assistant Surgeon. Ordered to the Naval Medical School, Washington, D. C. **Woodward**, J. S., Passed Assistant Surgeon. Detached from the Naval Hospital, Mare Island, Cal., September 29th, and ordered to the Asiatic Station.

Births, Marriages, and Deaths.**Born**

Leys.—In Newport, R. I., on Friday, September 27th, to Surgeon J. F. Leys, United States Navy, and Mrs. Leys, a daughter.

Married.

Boyd—Stephenson.—In Roanoke, Va., on Saturday, September 28th, Dr. John Otto Boyd and Miss Nell James Stephenson. **Busch—Woerthle**.—In Philadelphia, on Wednesday, October 2d, Dr. John William Busch and Miss Ottolie Woerthle. **Difenderfer—Shiffer**.—In Philadelphia, on Saturday, September 28th, Dr. H. G. Difenderfer, of Beaverdale, Pa., and Miss Millie Shiffer. **Hertz—Beisel**.—In Philadelphia, on Saturday, October 5th, Dr. Clarence W. Hertz and Miss Florence Beisel. **Hubert—Smith**.—In York, Pa., on Monday, September 23d, Dr. William Day Hubert, Medical Corps, United States Army, and Miss Maude Rue Smith. **Judd—Rife**.—In Baltimore, on Saturday, September 21st, Dr. Charles Chauncey Winsor Judd and Miss Mildred Rife. **Scofield—Gould**.—In South Clinton, Conn., on Wednesday, October 2d, Dr. Walter L. Scofield, and Miss Frances Gould. **Shepler—Gaul**.—In Philadelphia, on Wednesday, October 2d, Dr. Norman B. Shepler, of Harrisburg, and Miss I. Corrine Gaul. **Stout—Bowman**.—In Philadelphia, on Tuesday, September 10th, Dr. E. J. Stout and Miss Laura M. Bowman. **Weaver—Jones**.—In Baltimore, on Wednesday, September 25th, Dr. Joseph M. Weaver, of Allentown, Pa., and Miss Frances Pierson Jones. **Webb—Wright**.—In Damascus, Va., on Tuesday, September 24th, Dr. Jesse R. Webb and Miss Hattie Wright. **Wilhelm—Leuf**.—In Philadelphia, on Tuesday, October 1st, Dr. Arthur Farrington Wilhelm, of Raubsville, Pa., and Miss Grace Hall Leuf, daughter of Dr. and Mrs. Alexander H. P. Leuf.

Died.

Ambrose.—In New York, on Tuesday, October 1st, Dr. Daniel R. Ambrose, aged seventy-seven years. **Banks**.—In Columbia, Mo., on Friday, September 27th, Dr. S. M. Banks. **Beall**.—In San Marcos, Texas, on Friday, September 20th, Dr. Adam J. Beall, aged eighty-five years. **Butler**.—In Baltimore, on Friday, September 27th, Dr. James H. Butler, aged seventy-six years. **Cobleigh**.—In Kingston, Pa., on Sunday, September 22d, Dr. Benjamin J. Cobleigh, aged forty-nine years. **Colton**.—In Lowell, Mass., on Monday, September 23d, Dr. John Jay Colton, aged eighty-two years. **Friedeberg**.—In St. Louis, Mo., on Saturday September 28th, Dr. Arthur Hugo Friedeberg, aged forty years. **Hasbrouck**.—In Dobbs Ferry, N. Y., on Wednesday, October 2d, Dr. Joseph Hasbrouck, aged seventy-three years. **Higgins**.—In Los Angeles, Cal., on Saturday, September 28th, Dr. Bayard T. Higgins, aged forty-six years. **Hughes**.—In Westerly, R. I., on Thursday, September 26th, Dr. John W. Hughes, aged twenty-nine years. **Knapp**.—In Union, N. Y., on Wednesday, September 25th, Dr. Theodore P. Knapp, aged seventy-nine years. **Knight**.—In Lakeville, Conn., on Friday, October 4th, Dr. George Henry Knight, aged fifty-seven years. **Maust**.—In Philadelphia, on Thursday, September 26th, Dr. George Walton Maust, of Lock Haven, aged forty-seven years. **Palmer**.—In Rochester, N. Y., on Wednesday, October 2d, Dr. Lewis Palmer, aged forty-four years. **Parker**.—In New York, on Wednesday, October 2d, Dr. Frank Judson Parker, aged thirty-nine years. **Rugh**.—In New Alexandria, Pa., on Saturday, September 28th, Dr. Jacob Welty Rugh, aged eighty-five years. **Williams**.—In Conaways, Md., on Sunday, September 29th, Dr. William G. Williams, aged seventy-five years.

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Original Communications.

THE TREATMENT OF CANCER ON BIOLOGICAL PRINCIPLES.*

By JAMES EWING, M. D.,
New York.

The problem of treating inoperable cancer engaged the ancients. The literature of India, at 2000 B. C., contains references to the attempt to prevent recurrence after operation, by means of arsenical ointment. Herodotus states that Democedes, a Persian slave, about 500 B. C., cured Atossa, the daughter of Cyrus, of cancer of the breast apparently without the knife (Wolff).

The venerable age of the problem has not rendered it more palatable to modern science. So uniformly negative has been the history of attempts to limit the growth of inoperable cancer that a certain odium attaches to any one who ventures to discuss the subject in a hopeful vein. One may, however, escape unfavorable criticism, and even receive considerable approval for sound judgment, by enumerating the scores of useless remedies that have been employed, and condemning the entire list as worthless. So widespread is the antagonism against any serious efforts to relieve in the advanced stages of the disease that surgeons often neglect the ordinary rules of cleanliness in dealing with these patients. A tuberculous ulcer is energetically treated in the same ward where an inoperable cancerous ulcer is covered up by bandages and left to itself.

There is reason to believe that the initial favorable results so often following the use of new experimental methods have been due chiefly to the introduction of ordinary surgical cleanliness and reasonable medical care of neglected patients. It is well to remember that many cancers are very chronic diseases and get along very well if saved from secondary infections, and that the natural termination of many epitheliomas is death by infection and not by cancer.

While the incredulity of the profession regarding cancer cures is well founded, it does seem to be a very helpful service to rehearse the long list of past failures. The significant thing about these failures is not the length of the list, but the fact that so many widely different procedures have given some evidence of temporary effect.

It is in my opinion a very superficial judgment to assume, because many cancer cures are inef-

fective, that they are of no further significance. Thyroid extract has had a long history in the treatment of cancer, and while this agent is not a cancer specific, it is a highly interesting fact that some patients improve and some tumors partially regress under its use. It has long been known that a definite relation exists between arsenic and many tumor processes, a fact of more importance than its failure to cure cancer. Many cancer remedies relieve the pain of the disease and deceive the inexperienced therapist. So far as I know, the modes of action of thyroid extract, arsenic, and most other remedies have never been the subject of thorough investigation.

In order to deserve the designation of a rational treatment of cancer, the agent must specifically affect the growth of the cancer cell. At present there are two classes of agents which seem to possess, in some degree, this specific action.

Bacterial toxins may exert a pronounced inhibiting action on the growth of tumor cells, sometimes leading to extensive regression. As is well known, Fehleisen saw complete disappearance of a malignant tumor during an attack of erysipelas. The therapeutic application of the principle here involved is beset with many difficulties. Granting a small proportion of cures of certain types of sarcomas by the mixed toxins of streptococcus and prodigiousus, the method is applicable only to a limited group of tumors of variable malignancy, and the severity of the treatment is a bar to its general use. Much the same limitations surround the employment of various more recent methods of treatment by toxins of microorganisms. Of these methods the best known are those of Doyen, with his *Micrococcus neoformans*, of San Felice, with blastomycetes, and of Schmidt with *Mucor mucedo* (cancroidin). The complex history of these agents need not here be followed in detail, but it is of interest to point out that they have certain common properties. They produce a general intoxication and considerable fever. Their administration is often followed by partial regression of the tumor, after which they are usually ineffective. The regression is most marked in the central portions of large growths where nutrition is poor and necrosis is readily produced, while they are less effective with the growing edges, where cellular vitality is highest. There is little doubt that complete disappearance of malignant tumors has been observed in a small proportion of cases during the use of these agents. Not the proportion of cures, but the mode of action of the remedies is the important question here involved. Vidal points out that these

*Read before the Practitioners' Society, New York, January 5, 1912.

poisons are all pyrogenetic and that the effect on the tumor is usually proportional to the fever. Emerich and School admitted this relationship for their streptococcus serum, and it appears clearly in certain of Schmidt's cases. During an attack of erysipelas lasting six weeks, in a case of bulky carcinoma, I have noted regression of the tumor after each marked elevation of the temperature, but little change in the intervals.

In Coca's extensive series of vaccinations, marked regression of the tumor was frequently seen, but chiefly in febrile cases. Vidal saw complete disappearance of a canine lymphosarcoma after puncture of the thermic centre of Richet, producing a temperature elevation to 40.8° C. Simple exposure to heat does not destroy the vitality of cancer cells, but it hastens autolysis, facilitates formation of antibodies, and excites leucocytosis, and in some such mechanisms may probably be traced the favorable effects of pyrexia. Vidal denies any specific action of bacterial poisons upon tumor cells, but it is not entirely clear, although as yet without experimental proof, that such poisons may not be bound more actively by tumor cells than by normal tissues. Until such action has been demonstrated, the use of bacterial poisons cannot be classed as a specific method of treatment.

Various arsenical preparations have long been known to exert a favorable influence on many cancers. Recently Czerny reports considerable regression in several cases, under injections of salvarsan. That these agents have any specific influence on cancer cells must at present be doubted.

SERUM TREATMENT.

The hope of successfully treating cancer by blood serum, variously influenced by the growth of tumors, was stimulated especially by the results obtained with transplanted tumors in lower animals. Clowes and Baeslack obtained only twelve per cent. of successful grafts in mice treated with the serum of cured mice, against thirty-two per cent. in controls. Sticker cured four cases of the lymphosarcoma of dogs by the serum or blood of recovered dogs; and Crile and Beebe saw complete regression in nine successive cases of this disease after repeated transfusion of blood from immune dogs. The numerous observations showing that animals could be rendered insusceptible to tumor implantations by means of injections of many organ extracts, pointed in the same direction, in spite of the failure to find specific antagonistic agents in such extracts or sera. Normal human placental blood was employed by Edel in ten cases of cancer in which he temporarily reduced the size of the tumor. Heterologous normal serum of domestic animals appears to have given more definite effects of the same order. Arloing and Courmont reduced the inflammation and swelling about epitheliomas by normal serum. Hofbauer argued that heterologous serum ought to inhibit the action of tumor ferments, but his results with pig and beef serum were slight. Bier cured one lupus cancer by interstitial injections of heterologous serum, believing that the serum ferments could facilitate autolysis of cancer cells. Long before this Bayle seems to have cured a rodent ulcer by interstitial injections of blister fluid from the

patient. Korbsch used the serum of very young animals with the usual temporary relief. Beebe has observed considerable general and local improvement of intraperitoneal growths after intraperitoneal injections of sheep serum. All of these sera seem to produce much the same effects, relieving pain, causing partial regression, sometimes improving the patient's nutrition, and often controlling hemorrhage.

Vidal recognizes several factors in the action of these normal sera: 1. Toxic action. The sera usually cause central necrosis but fail to influence the growing edges, in which respect they resemble the bacterial toxins. He found dog serum more active if drawn after the animal had eaten heartily of meat.

2. Ferment action, including that of ferments antagonistic to those of the cancer cells and that of ferments directly injurious to the cells.

3. Action of true antibodies produced by the serum; it has been shown that injections of blood and organ extracts render animals refractory both to tumor grafts and to normal tissue grafts (Rous). This immunity is therefore not specific against cancer.

4. Thermic action. Normal sera, especially the toxic forms, may produce fever and in this way inhibit the growth of tumor cells. As Vidal points out, it is important to recognize that normal heterologous serum exerts a very definite action on many tumors. This action includes the relief of pain, reduction of inflammatory processes, and frequently the regression of the tumor to a certain point, after which the serum becomes inert and growth is resumed. His careful analysis of the factors concerned, of which, however, very little is known, reveals many features in common with the bacterial toxic agents, and suggests that an effective treatment of cancer can never be attained by this means.

TREATMENT BY SEROUS EXUDATES OF CANCEROUS SUBJECTS.

In 1907, Mackay reported the spontaneous recovery of a very advanced and apparently moribund patient with mammary cancer coincident with the absorption of a bilateral pleuritic exudate. The patient had reached the terminal stages of a bulky cancer *en cuirasse*, which nevertheless rapidly diminished until only slight traces remained. Mackay expressed the opinion that the regression was caused by the action of some antagonistic substance in the absorbed exudate. Yet in a considerable series of cases of unexpected recovery from advanced cancer reported by Czerny, and in one mentioned by Barlow and Cheyne, there does not appear to have been any absorption of fluid. Nevertheless, Mackay's observation was highly suggestive and it was one of the considerations that led Hodenpyl to employ as a therapeutic agent the ascitic fluid from a supposedly recovering case of mammary cancer. In this patient, thirty-seven years of age, developed large recurrences in the breast, axilla, and neck, while the liver became greatly enlarged and extensive chylous ascites appeared. After three years of progressive growth the tumor began to regress, all swelling disappeared from the chest and neck, and the liver became nor-

mal in size, while the patient's strength considerably improved.

Hodenpyl found that injections of small amounts of this chylous fluid caused regression, necrosis, and sometimes disappearance of mouse tumors. From December, 1909, until May, 1910, some forty cases of inoperable carcinoma were treated by injections of serum. The first results were very encouraging, many of the tumors diminishing rapidly in size and the general health distinctly improving. In a few cases the improvement was really remarkable. The later results were less favorable; in April the serum seemed to be losing any potency it may have possessed, and its effect on new cases was less evident. So far as I can learn, all the advanced patients treated by this serum are now dead, or still suffering from the disease, with the exception of one with cancer of the thyroid, in whom an inoperable recurrence was so much reduced in size after large intravenous infusions of the serum that it was later successfully removed. Meantime, the patient herself began to fail, and without apparent recurrence of the tumors, she died in the summer of 1910. A partial autopsy, by Dr. Mortimer Warren, revealed that the liver, while of normal size, was almost entirely replaced by scar tissue. On section I found wide areas of hyaline connective tissue with scanty groups of atrophic cancer cells, suggesting a very unusual degree of spontaneous regression of the cancer process.

While these observations were in progress an almost identical case was encountered by Dr. E. J. Ill, of Newark, and the ascitic fluid from this case was kindly placed at our disposal. Its effects were very similar to those observed by Hodenpyl.¹ This patient also died while apparently in good condition, from a sudden accumulation of the fluid, and autopsy revealed the same extensive hyaline and atrophic changes in the liver, as well as scirrhus cancer of both ovaries. The chemical composition of these fluids was found by Shaffer not to differ greatly from that of other cancerous and noncancerous ascitic fluids. Weil failed to find that they exerted any specific influence on cancer cells, and that they did not yield the complement deviation test with cancer antigen. These two sera and several others were extensively used in New York without producing any permanent cures of cancer. In Boston, Rushmore had a similar experience. The conclusion is therefore reached that the ascitic fluid of certain advanced but apparently stationary cases of cancer exerts an influence on many growing cancers, causing first a marked swelling, with pain and hyperemia, followed by rapid regression, sometimes by necrosis and sloughing of the tumor, and often by increase in the weight and strength of the patient, but that this process does not go on to a cure of the disease. Yet Tuffier reports a complete cure of a typical cancer *en cuirasse* with pleuritic effusion, after several inoculations of the pleuritic fluid, followed by repeated injections of gramme doses of sodium nucleinate. A continuous, febrile reaction was maintained for three months.

The interesting questions remain unsettled whether these fluids exerted any greater action than that belonging to normal serum, and if so, to what

was this action due. From observations on many of these cases I am convinced that the fluids, especially the earlier portions used by Hodenpyl, exerted a greater activity than can be ascribed to normal serum. As a factor in this action, thermic influence can be eliminated, as the effects often followed without fever. Likewise there was no evidence of a local or general intoxication, for local reaction was usually missing and as much as one and a half litre of the fluid was given intravenously without constitutional disturbance. It is possible that the serum contained a substance antagonistic to cancer cells, either cytolytic or directed against essential cell ferments. Hodenpyl believed that the activity resided in absorbed products of regressing or necrotic tumor cells, a view which seems as acceptable as any, but the mode of action of such products can at present only be surmised.

Recently some notable studies have been devoted to the biological properties of the blood serum of cancerous patients which are calculated to throw some light on the nature of Hodenpyl's serum. Freund and Caminer find that normal human serum dissolves cancer cells in the test tube, while the serum of cancer patients has lost this property. The authors reached this remarkable conclusion by a technique which involved the addition of fresh serum to an emulsion of cancer cells in 0.6 per cent. salt plus one per cent. sodium fluoride. The action of the serum was determined by counting the cells before, and at intervals after, the addition of serum. Fresh surgical material proved unsuitable for the tests which were carried out on post mortem material. The test proved sufficiently uniform to render it of diagnostic value, and in a series of fifty-four cancer cases the result was always positive; while in forty-five noncancerous cases, with one exception, it was always negative. The cytolytic agent of normal serum they found to be nondialyzable, thermolabile, precipitable by alcohol, and soluble in ether; and they believe it to reside in the lecithin of the serum which they found much reduced in cancer blood. The inhibiting substance of cancer serum, they found in the euglobulin fraction, precipitable by alcohol and soluble in sodium carbonate. They also observed a specific precipitin reaction which occurred when cancer serum was added to cancer extract, but failed with normal serum. This reaction occurred in forty-five out of fifty-four cancer sera tested. In a later communication the authors admit the importance of very careful adjustment of the proportions of the elements entering into the reaction, and they discard the cytolytic test for the precipitin reaction in diagnosis.

It would be difficult to overestimate the practical and theoretical importance of these observations if they could be trusted. While confirmatory results were obtained by Ranzi, Arzt, Stammer, and Schmorl, yet Kraus and his associates found many difficulties in repeating the work. Out of forty tumors he secured only four suitable emulsions, and he observed the same absence of cytolytic power in the blood in pregnancy. In a series of cancer sera I failed to secure conditions which would permit of any conclusions whatever regarding the action of the blood serum upon cancer cells *in vivo*. Freund and Caminer did not mention bacterial contaminations in their work, but I found it impossible to

¹See report by Ill and Minningham, *Journal of the American Medical Association*, lix, 497, 1912.

secure a bacteria free emulsion of post mortem cancer material, and observed that bacteria grew freely in the fluids employed. Moreover, Simon and Thomas had previously shown that cancer cells autolyze rapidly in salt solution or Ringer's fluid, and they found exactly the opposite action of normal and cancer sera on cancer cells, from that observed by Freund. No active cytolytic serum has ever been produced against any tissue cell except red blood cells. Lambert and Hanes found that mouse cancer cells grow readily in the serum of normal mice or rats, and that rat sarcoma grows well in the serum of immune rats. Finally the idea that cancer cells are actively dissolved in the circulation, and hence in premetastatic periods, secondary tumors fail to develop, is lacking in any definite basis. Embolic cancer cells probably either autolyze or, as Schmidt has shown, are destroyed by encasement in fibrin with subsequent organization. I do not believe, therefore, that any new facts have been demonstrated by Freund and Caminer, but that they were dealing with accidental variations in the autolytic processes in tumor cells.

Accordingly, the specific action of cancerous ascitic fluid on cancer growth remains unexplained, but the sharpness of the reaction produced suggests that the patients are being vaccinated by tumor derivatives. A further search in the blood of advanced cancer patients for substances antagonistic to cancer cells is urgently called for.

The theoretical basis of this treatment is found in the observations from many sources, that it is possible to secure antisera with more or less specific action upon the organ or tissue against which they are prepared. Metalnikoff prepared a spermatotoxic serum which immobilized guineapigs' spermatozoa in the test tube, but failed to affect those in the testis. Von Dungern obtained a serum which immobilized the cilia of ox tracheal epithelium, but it was not certainly different from the hemolytic agent in the serum.

Von Dungern and Hirschfeld, by means of the local anaphylactic test, demonstrated in the testis substances more or less common to the testes of all animals, but absent from other organs. Schenck obtained the same results by means of a general anaphylactic reaction, and Dunbar differentiated pollens by this means. Krusius detected specific qualities in squamous epithelium.

From the chemical side Bierry and Mayer, by using nucleoproteids of liver and kidney, believed they secured specific action of the serum against these organs. Beebe secured quite definite specific action upon kidney, pancreas, and thyroid of dogs by sera prepared against the nucleoproteids of these organs. In none of these cases was it possible to demonstrate any cytolytic power in the serum upon the particular cells, the specific action revealing itself only by far more delicate and yet fully reliable tests, such as disturbances in the functions of the organs and in their structure, and by means of the anaphylactic reaction.

The most systematic and apparently the most successful attempts to produce a cytolytic cancer serum are those of Vidal. He first demonstrated that the serum of dogs receiving injections of human cancer emulsions, dissolves cancer cells by means of a ther-

mostabile amboceptor and a thermolabile complement. In six out of seven experiments, deviation of complement could be demonstrated when cancer antigen was added to such serum. The serum proved to be distinctly specific, since the amboceptor was not absorbed by the normal tissue or by benign tumors of the organ yielding the antigen; nor by malignant epithelial tumors of other organs. He compared the antigenic activity of many tumor emulsions and extracts including the whole emulsion, fresh and after autolysis of four days, fresh aqueous extract, emulsion treated with chloroform for one or fifteen days, nucleoprotein extract, peptonized cellular albumins, cells disintegrated by freezing, etc. The whole fresh emulsion proved most effective. He next found that the antigenic properties of the emulsion were much increased, if it was treated with its specific antiserum before injection. The antiserum was further increased in activity if, six hours before the injection, the animal received a dose of rabbit-dog serum or iodized nucleic acid to excite leucocytosis. The use of such serum was followed in many cases by prompt regression of the tumor up to a certain point more advanced than that following the use of normal serum, after which the serum became inert. Vidal then found that the blood or pleuritic fluids of his patients contained an antiamboceptor which prevented the cytolytic action of the serum *in vitro*. He therefore prepared a serum against this inhibiting substance by injecting blood or serous fluid of such patients into dogs, and he used this second serum to support the action of his first serum. The result was further regression of the tumor and some cures. Of 100 patients treated during the past ten years, fifty showed no definite improvement. Three advanced inoperable cases, an epithelioma of the tongue, a cylindrical cell cancer of the rectum, and a carcinoma of the breast were completely cured and have remained so from five to seven years. Of forty-eight patients treated by operation, eight died of recurrence in spite of serum treatment, twenty-eight remained permanently well, twelve passed from observation. In three cases the regression of the tumors to small nodules eventually removed by operation, was observed under serum treatment.

The serum treatment often rendered valuable service in making difficult cases more accessible to operation by mobilizing the neoplasm and liberating adhesions. Vidal comments also on the wide difference in the behavior of apparently identical cases with the same serum.

In spite of the systematic plan of the research and the persistence with which it was pursued, there are several difficulties in the way of accepting Vidal's conclusions. His assertion that the antiserum dissolved cancer cells *in vitro* will not meet with ready belief. Only the labile, red blood cell dissolves in its antiserum. The absorption experiments showed very unusual specificity for cancer proteins, but this tissue contains many receptors in common with other organs. The theory of an antiamboceptor is based on a questionable method of demonstrating a cytolytic action on cancer cells. The use of dog serum complicates the situation by introducing a distinctly toxic influence for man which resides in this serum. It seems possible that Vidal's considerable therapeutic

successes might be due to the frequent use of a toxic serum.

TREATMENT BY VACCINATION.

The possibility of treating cancer by means of vaccination with tumor emulsions was early suggested by the success attained in immunizing animals by inoculation or implantation of living tumor cells of reduced activity, which were absorbed immediately or after a short period of growth. Thus Ehrlich, by employing a hemorrhagic tumor which produced small abortive growths or none, was able to protect mice against tumors of maximum virulence. Many others have had similar success. Yet definite cure of a growing cancer by means of vaccination has proved much more difficult to secure, and has been obtained only by von Dungern and Coca and by Gay.

Without complete experimental proof of the efficacy of the method, the vaccine treatment of cancer in man has been extensively tested. The first successful result in this field seems to have been that of Coca and Gilman, in Manila, who saw the rapid and apparently complete disappearance of a recurrent epithelioma of the cheek after two inoculations of a fresh emulsion of the tumor tissue. In this case there was no inflammatory reaction in the tumor. Yet after an extensive trial in Manila, Philadelphia, and Havana, Coca was unable to repeat this result, although he often secured marked temporary regression.

At the International Cancer Congress, in Paris, 1910, Bertrand presented a patient in whom an extensive recurrent mammary cancer had resolved until it could no longer be detected. This patient had received for six months frequent injections of dried breast cancer tissue. At the same congress, Rovsing reported the cure of a recurrent osteosarcoma of the tibia with inguinal metastases, after eighteen injections of one to five c. c. of emulsion of the tumor. Two other cases showed remarkable improvement under vaccines, but Rovsing had no success with carcinoma.

Gaylord presented at the meeting of the American Association for Cancer Research, 1911, a patient in whom an osteosarcoma of the jaw had regressed during treatment by dried substance of rat sarcoma. Beside these reports which are accessible in the literature, it is well known that others have attempted vaccine treatment with results which they do not consider as demanding immediate publication.

The experience with vaccine treatment has revealed certain dangers which cannot be too strongly emphasized for any who may undertake this method. It was at first believed that the injection of fresh tumor emulsion without the addition of any agent that would injure the cells was necessary in order to secure any immunization. Hence such emulsions have been extensively used, but it does not appear that the results are any better than when heated and sterilized emulsions are employed, while the obvious danger of causing a new tumor at the site of inoculation is avoided by using devitalized emulsions. I believe, therefore, that the use of fresh, viable cancer cell emulsion is unjustifiable. It soon became apparent that the preparation of sterile emulsions of cancer tissue is often very difficult, and many severe infections have followed the use of im-

perfectly sterilized material. Thorough sterilization tested by bacterial culture highly diluted, is demanded.

Including the cases of Vidal, Bertrand, Coca, Tuffier, Rovsing, and Gaylord, there are now recorded twelve inoperable malignant tumors which may be accepted with tolerable certainty as having been cured by some form of serum therapy. In view of the conditions in which these patients were found, wholly inaccessible to any other mode of treatment, these results might appear encouraging. Considering also the far larger number in which palliation of the disease was secured, there would seem to be ample justification for the pursuit of this type of investigation. Although probably less than one per cent. of the cases treated have received permanent benefit, it should be remembered that experimental cancer therapy is required to do almost the miraculous in essaying to rescue patients from the last stages of cancer. Concerning the influence which vaccines or serum, cytolytic or autogenous, might have on the early stages of the disease, we know nothing, but we do know that the organs and metabolic functions of the advanced cancer patient are distinctly altered from the normal. The great majority of cases that reach the experimenter are apparently far beyond the reach of any help, and that any of them should be cured ought to command admiration as much as it excites incredulity. It is a fact of much significance that the advanced cancer process has been arrested artificially by methods planned in accordance with what little is known of the laws of cancer immunity. On the other hand, it is not legitimate to assume that this treatment has transformed so many cases of the type we daily encounter steadily declining with a progressive cancer. The complexity of the situation is well indicated by Tuffier, who speaks of his cures as paradoxical. One has to consider several factors as possibly concerned in the result.

There are probably more cases of spontaneous cures of cancer recorded or observed than of recovery after specific therapy, and some of these spontaneous recoveries have occurred with surprising rapidity. The psychical element has also a notable influence on the nutrition of the cancer patients, and the improved medical attention the experimental patient receives is not a negligible influence. From this point of view we may suspect that some of the paradoxical cures occur in cases in which a natural tendency to spontaneous cure is stimulated and rendered effective by the complex influence of serum or vaccine therapy. While in certain cases the therapeutic result has been prompt and complete and plainly referable to the agent employed, it is clear that we are not yet in control of an effective method of establishing artificial immunity against a malignant tumor process in man.

Yet there are definite indications that important progress is to be made along the lines of passive immunization by tumor products. Thus far the cytolytic sera employed seem to be lacking both in activity and in specificity. There is no satisfactory method of estimating the strength of a cytolytic serum prepared against cancer. We can hardly expect such a serum to dissolve cancer cells *in vitro*, and observations on such phenomena do not seem

trustworthy. Cancer cells autolyze rapidly in salt solution, and the addition of most sera tends to retard this process. Likewise a specific action of cancer antisera made against the whole tissue must be slight, and it is not entirely clear that any particular fraction of the tumor tissue can be isolated which possesses entirely specific qualities. In this field the demonstration by von Dungern and Hirschfeld, that testicular tissue possesses specific qualities common to the testicle of various animals, but differing from those of other organs in the same animal, is of fundamental importance.

While Vidal found little general or special activity in sera prepared against cancer nucleoproteids, his observations need not perhaps be regarded as final, since many competent workers are now agreed that nucleoproteids in certain organs carry specific chemical and biological properties.

Vaccine therapy in some improved and specialized form is strongly encouraged by such observations as those of Mackay, in which extensive cancerous growths resolved during the absorption of pleuritic fluid, while in Tuffier's case this resolution followed artificial treatment by such fluid. These observations indicate that when the right conditions are provided cancer tissue melts rapidly away, apparently regardless of the general cachexia of the patient. There could be no better demonstration of the fact, long recognized by experimental cancer research, that the cancer process is, after all, very insecurely balanced.

While certain evidence points to the loss of important qualities of the blood in cancer rather than to the addition of new factors, the conclusion seems unavoidable that in these cases the absorbed fluid contained some new substance very strongly antagonistic to the tumor cells. The tumor itself is the only logical source of such a substance. Hence there is a clear indication calling for further studies of the blood and fluids of advanced cancer, to determine what specific changes occur which might have a bearing on the problem. The loss of antitryptic power can hardly be concerned in this connection. The physicochemical changes leading to the miostagmine reaction do not seem to bear directly on the problem. While the Wassermann reaction may be present in from five to eighty-six per cent. of various types of cancer blood, this reaction is only slightly less specific of cancer than of syphilis (Caan). Its presence does not seem to offer any significant clue to the important changes in the blood of cancer. Anemia is inconstant, and many patients die in a marantic state with concentration of the blood.

The metabolism of cancer has not been shown to vary from that of other diseases, but studies now in progress in the Cornell laboratories indicate that there are specific features in the metabolism of advanced cancer, and that the cancer process is closely dependent on the character of the patient's nutritive processes. The assertions of Neuberg, and Blumenthal and Wolff, that cancer tissue contains specific chemical substances and specific ferments, are not borne out by their published data and still remain unverified or actively contested (Hess, Saxl, Kepinow, Lieblein).

It thus seems impossible at present to construct

any theory to readily account for the specific substances in the blood of such cases as those of Mackay, Hodenpyl, and Tuffier, but the situation encourages further study of the blood, as well as vaccination of animals with various cancer products. I believe the work in these fields is of fundamental importance. In 1885, Freund asserted that the blood in cancer contains an excess of glycogen. Gulland has shown that hyperglycemia exists only in the advanced stages of the disease. This and other observations indicate that the blood in cancer is in some way more favorable for the nutrition of cancer cells than is normal blood. The results of Crile and Beebe in causing the disappearance of dog sarcoma by exsanguination and infusion of immune or normal dog blood suggested to the writer that simple variations in nutrition, and not any immune factor, were concerned in the process. It has long been known that many actively growing tumors are very rich in glycogen, and Brault has assumed that this substance is an essential factor in the excessive nutrition and growth of cancer cells. In the normal cells in the neighborhood of malignant tumors, some of which may be gradually transformed into tumor cells, he finds a progressive increase of glycogen. Keating-Hart has collected many observations on the relation of cancer and glycogenesis, and constructed a theory that the growth of malignant tumors depends on an excessive production of glycogen. It is also known that growing tumors are rich in potassium, while calcium predominates in stationary or regressing growths (Beebe). Therefore it seems possible that a control of the sources and consumption of these elements may prove of importance in the treatment of cancer.

Speculating on the theory that cancer is a disease of senility, some have been led to use thymus extract as a curative agent. Gwyer avers that he has cured rat cancer with an ingredient derived from the thymus. Some years ago, Beebe and I employed the nucleoprotein of fetal squamous epithelium in cases of epithelioma. There was at first a sharp local reaction in the tumor and some regression, after which the agent soon lost its activity. Israel recommends chondroitin sulphuric acid on the ground of the immunity of cartilage to malignant growth. I have not known of any encouraging results in several cases treated with these agents, which I have examined at autopsy.

Fichera reports encouraging results from the use of autolyzed human embryonal tissues. He employs the substance of two to six months' embryos which have autolyzed for two months under toluol. Out of thirty-six patients treated by local or distant injections, five appeared to be cured, five were said to be recovering, eight received no benefit, and with fourteen the treatment was interrupted for various reasons. In this method it is difficult to see any other principle than the action of a general toxic agent. The prolonged autolysis must degrade the embryonic tissue proteins beyond the point of specific action. Surgical measures seem to have entered largely into the treatment and, as essential details are lacking in the available reports of cases, it is difficult to form an estimate of the significance of Fichera's results.

The experience with serum therapy of cancer em-

phasizes a feature of the disease which does not always obtrude itself into other departments. Before the knife all cancers are much alike, but to the experimental pathologist they are all different. Considering the variety of etiological factors, the natural history of the disease, the various complications, and the complex nature of systemic changes, there is no more justice in grouping mammary cancer with teratoma testis than in confounding tuberculosis with lobar pneumonia. One group illustrates infectious inflammatory processes, the other neoplasms, but aside from this general relation they have little in common. In attempting to build up a rational therapeutics of cancer, it is highly important to realize that the factors concerned with the incidence, growth, and constitutional effects of one type of cancer may be widely different from those concerned with other forms of the disease. Therefore, it is a common experience to find that one type of cancer responds to a serum or vaccine with encouraging results, while another behaves in exactly the opposite manner. Even in the same stages of the same variety of cancer, different individuals, as remarked by Vidal, seem to react in a different manner to the same agent. Hence there is need of much more comprehensive study of the effects of the disease before an efficient serum therapy can be properly controlled. Furthermore, the widely different etiology of many carcinomas, and the complex altruistic relations of the different tissues concerned, foreshadow serious obstacles in the way of a panimmune serum or a vaccine. If chorioma depends for its growth upon irregularities in lutein secretion (Pick), the proper point of attack is not the tumor itself but the lutein cell. There are interrelations between the sexual organs which may eventually demand attention in the attempt to control aberrant growths in these organs. The regeneration of squamous epithelium is markedly related to the activity of the thyroid gland, and several organs and tissues respond notably to variations in the activity of the hypophysis. Perhaps the study of internal secretions may open new avenues of approach for serum therapy in cancer.

Thus, from a general survey of present conditions, the complexity of the problems seem to bar the hope that a specific treatment of cancer will shortly become of practical importance. Meantime, it may not be amiss to suggest that the combination of several methods, each ineffective alone, may increase the palliative effects and even lead in occasional instances to a virtual cure of inoperable cancer. While the indiscriminate application of these new methods would be most unfortunate, the object of this paper will have been accomplished if it serves to show in some degree that the inoperable cancer patient, instead of being a hospital burden, can be made the centre of the liveliest scientific interest.

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CHRONIC GONORRHEA IN THE MALE.*

The Difficulties of Cure by Ordinary Treatment.

BY VICTOR COX PEDERSEN, A. M., M. D.,
New York.

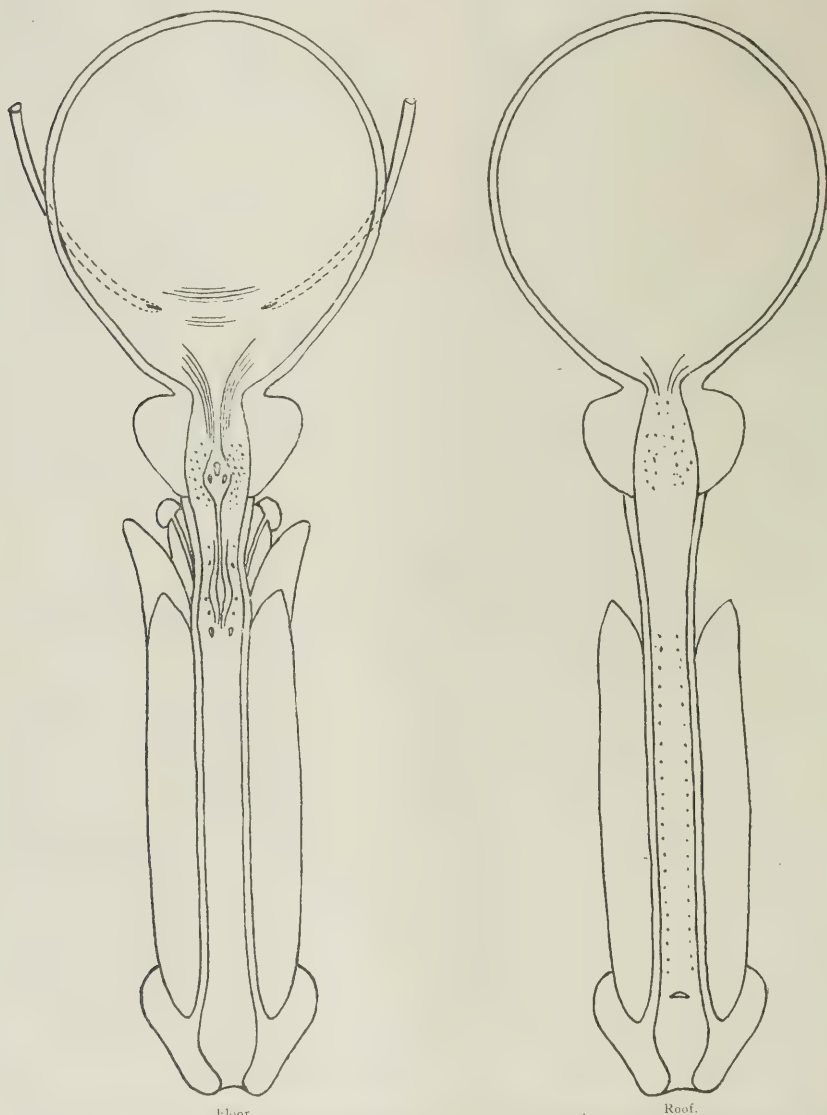
With the invention of urethroscopes a generation ago, a step forward was taken in the diagnosis and treatment of urethral conditions. In these urethroscopic tubes, the first defect of importance for remedy was inadequate light, which was removed by the introduction of practicable small electric lights of sufficient power to illuminate lesions at close range. Another difficulty with the straight urethroscopes was that the mucous membrane pouts into the transverse objective end in a manner to defy the control of the operator. Obviously, the next step was an instrument, which, either by the aid of air or of water, would enable the operator to dilate the canal, push the mucous membrane more or less away from the fenestrum, and smooth it for study and treatment. The greatest advance in this detail was the Goldschmidt instrument, which was introduced a few years ago. The error of which this ingenious device is guilty is that of having an undue amount of urethral wall presented in the instrument, that is, of having an unnecessarily large fenestrum.

The latest and greatest gain in the direction of dilating instruments is furnished by the Bueger

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urethroscope, which has like the Goldschmidt a lateral instead of a terminal opening, but reduced in size, so as to prevent undue prolapse of the mucous membrane into it. The system of lenses

will. The writer, however, has totally discarded the curved tip and uses only the straight instrument. This straight tube is manifestly a little more difficult to introduce than the curved, but practice, pa-



Anatomical diagrams for office histories for noting diagnoses of cystoscopy and urethroscopy, and recording results of treatment.

magnifies about five diameters, so that the lesions which under the old style straight tube entirely escape diagnosis, are readily diagnosticated, studied, and treated. The Buerger urethroscope is sold with a curved and a straight tip, interchangeable at

tience, and gentleness soon teach one how to overcome this trivial obstacle, by remembering two important details, namely, to keep the beak of the instrument against the pubic arch, so as to avoid the bulb of the urethra, which, in many of these

chronic cases, is redundant, deep, and hangs below the opening in the triangular ligament, so that the beak readily catches in it. Should the effort to pass the instrument high in the pubic arch fail, a finger should be introduced into the rectum as a guide. These two manipulations combined almost invariably secure the passing of the instrument without incident.

The advantage of the straight over the curved instrument is that, beginning with the neck of the bladder, one may continue the examination systematically, step by step, half inch by half inch of the entire urethra until the meatus is passed.

The writer is of the opinion that no case of gonorrhea should be discharged as cured without precisely this form of deliberate and thorough examination. Perhaps above all, those patients who give a history of long continued discharge, and of prolonged and persistent treatment in the hands of competent physicians, should always be thus examined. One might multiply the number of cases in proof of these simple statements, but the following are, perhaps, worthy of note.

CASE I. N. W., United States, white, eighteen years old, single, clerk. Denied all venereal infection, other than gonorrhea fourteen months ago, which was severe and persistent, with much chordee, but without complications. Relieved by private treatment with internal and injection methods. Treatment stopped by patient himself without preliminary examination by physician. Sexual habit irregular and very moderate. Present trouble began four weeks ago without known exposure to infection. General complaints were a thick, scanty, purulent discharge, with smarting in the anterior urethra. Urination every three hours by day, and once by night. Difficulty of control, some urgency, moderate tenesmus. Had been under treatment by his family physician for three weeks prior to his first visit.

Physical examination negative, except in corroboration of the foregoing symptoms. The usual expectant method of treating acute gonorrhea was employed after a cultural and microscopical verification of the diagnosis. When the discharge had ceased, the urethroscope revealed the following interesting features: On the roof of the deep urethra, near the sphincter, was a large cockscomblike hanging papilloma. On the right of this was a large pocket, apparently an abscess cavity, in the prostate, which might well explain the recurrence of his gonorrhea without exposure to reinfection. The bulb of the urethra was deep, unhealthy, and boggy looking; while in the roof of the anterior urethra were very numerous and enlarged follicles.

Such, then, were the features of this case, why it was obstinate to cure, and also why the history was probably correct in asserting that the patient did not have a fresh infection.

CASE II. J. B., Ireland, white, twenty-seven years old, stoker. Denied syphilis, acknowledged chancroid six years ago. Cured by the usual surgical methods at a dispensary. Complicated with bubo, which was incised and evacuated. At the same time, he was circumcised. Last attack of gonorrhea, four years ago, treated chiefly by himself by internal measures. No examination at that time. Second attack of gonorrhea began seven days after intercourse, was accompanied by a thick, scanty, purulent discharge, with much burning throughout the entire urethra. Urination by day every two hours, otherwise no important symptoms. Treated for a while by a private practitioner, and at a dispensary for a few visits, by internal methods, then he consulted me. He had much pus, but no gonococci on microscopical investigation. He then disappeared from view, during which time he was treated by four or five physicians in private and public practice. Underwent an operation for so called stricture in the office of a well known advertising specialist, and was otherwise energetically handled. No urethroscopy was done,

however, by any one until, after the lapse of nearly three years, he again returned to my care.

At this time, he had a frank discharge, for which he received the standard conservative management. At this time the discharge did contain gonococci. As soon as the symptoms were in abeyance, I did a urethroscopy and found the following conditions: Almost the entire posterior urethra from the sphincter to the colliculus was in a state of cystic degeneration, especially dorsally in front of the verumontanum. On each side were two distinct warts or papillomata.

Here, then, in this case are the reasons why the man had a gonorrheal discharge for three years, which defied all methods of treatment. In the urethroscopic examination no signs of stricture were discovered, so that one may hazard the opinion that he never had a stricture, but that the foregoing lesions gave the symptoms of pain and stricture of moderate degree.

CASE III. J. H., Ireland, white, twenty-seven years old, valet. Denied all venereal infection previous to the present attack of gonorrhea, which began three years ago, after a four day incubation. His sexual habit was regular and moderate, and for three years he had never been free from slight urgency and tenesmus. Had been thoroughly treated by a number of physicians, without urethroscopy. In my hands, this procedure revealed the following: Fine granulations on the left and front of the colliculus and in the left prostatic sinus. On the dorsum of the prostatic urethra, back of the colliculus, was one large papilloma and many unusually large cysts. The mucous glands on the roof of the anterior urethra were numerous and greatly enlarged, and discharged pus on pressure.

In this case, we see how simple was the recognition of why the man for three years has suffered distress at the neck of his bladder, and why moisture and pus have been more or less constant at his meatus. His general appearance would suggest that excuse for a real diagnosis, namely, sexual neurasthenia. As a matter of fact, the man had real pathological lesions accounting for all his symptoms.

CASE IV. W. McC., United States, white, twenty-five years old, single, clerk. Denied all venereal infection, excepting the present, which dated back five years. Sexual habit moderate. Present disease began a few days after intercourse with a thick, scanty, mucopurulent discharge, which still persisted, accompanied by a definite burning. Urination normal in all respects. Was treated irregularly for the past five years by physicians, druggists, and himself. Treatment stopped by himself without examination. First urine showed shreds, second one clear. The patient's appearance was one of a thin skinned, girlish man, hypersensitive, nervous, overworked, so that one's first inclination was to regard his assertion of ardor urinis as a sign of his nervous depreciation. Urethroscopic examination showed that in this case, also, the man had a definite basis for the symptoms which he honestly described, namely, on each side of the colliculus, in the prostatic sinuses, were two ulcerlike areas, larger on the right than left. In the anterior urethra were a half dozen or more inflamed papulous follicles, so that we were able to prove that he has a real ground for the burning of his urine, both in the posterior and the anterior urethra.

CASE V. E. L., United States, white, forty-five years old, married, manufacturer, referred by Dr. T. J. McGeary, of Jersey City. Denied all venereal infection, except a gonorrhea twenty years ago. Had had no sexual intercourse, excepting with his wife, since marriage. The feature of this case was that he had not in these many years, at any time, been free from a morning drop, which had defied efforts at relief in the hands of a number of experts. Seemingly, no urethroscopy with modern instruments had been attempted until the patient came under my care. It revealed in the left prostatic sinus, far back, a large papilloma, and a small one on the right side of the colliculus toward its front. In the dorsum of the anterior urethra, just in front of the bulb, were five very much

dilated and diseased mucous follicles. These papillomata were of sufficient size to cause the irritation and uneasiness, of which the patient complained.

His mucous drop might be due to the papillomata alone, with or without the follicles, or due to the follicles alone.

CASE VI. R. G. I., United States, white, twenty-seven years old, merchant, referred by Dr. R. S. Morton, of this city. Syphilis and gonorrhea denied. Admitted chancreoid about three years ago. Treated in the well recognized methods by a physician. Sexual habit active with a young woman, whom he subsequently submitted to examination, and who showed culturally the presence of gonorrhea. Present sickness, namely, gonorrhea, began six or seven months ago, with a brief incubation. At the present time, he had a thick, scanty discharge of mucus and pus, otherwise was without symptoms. Physical examination showed a small stricture at the mouth, admitting only 21 F., but easily dilatable. Urethroscopic examination showed that the source of his gonorrheal discharge was a distinct row of bleeding granulations in front of the verumontanum, and a distinct, wartlike growth on the left side, back of it; also a few enlarged follicles in the anterior urethra. Culturally, the discharge showed gonococci.

CASE VII. T. P. D., United States, white, thirty-seven years old, married, waiter. Admitted four attacks of gonorrhea, without adequate treatment in any of them. Gave symptoms of stricture reasonably well marked, and complained of persistent gonorrheal discharge. Wife seemingly not infected, but no examination was permitted. Urethroscope showed the prostatic urethra inflamed as a whole. Surrounding the fore part of the verumontanum were four or five large granulations, presenting a kind of crown to the verumontanum, making, in the instrument, a particularly interesting feature. The left prostatic sinus was large, deep, and filled with unhealthy granulations. No stricture, strictly as a cicatrix, was visible.

As more and more cases of this kind are observed with the urethroscope, it will be interesting to note how many individuals give the symptoms of so called soft, dilatable stricture, precisely as this man did. It may be possible that this form of stricture is commonly due to similar lesions.

CASE VIII. J. B., Ireland, white, thirty years old, single, elevator conductor. Denied syphilis. Admitted one attack of gonorrhea, successfully treated by conservative methods by a private physician, who discharged him cured after examination. Had gonorrhea about two years ago. Sexual habit active and promiscuous. Had been troubled, off and on, for the past two years with his second attack of gonorrhea, which began three days after intercourse, with all the typical symptoms, showing severe infection, such as frequency of urination by day and night, difficulty of control, urgency, chordee, and the like. Was referred to me by Dr. W. D. Tyrell, of this city. Gonococci were easily demonstrated in this case, but disappeared under the usual gentle and conservative treatment. The discharge persisted in an aggravating manner, which led to a urethroscopic examination. It was very easy to demonstrate a thin, delicate, lacelike papilloma in the right prostatic sinus, extending almost the entire length of the verumontanum. This was burned away with strong silver nitrate, which was followed by immediate recovery.

CASE IX. S. A. H., United States, white, forty-three years old, insurance agent, referred by Dr. F. Spencer Halsey. Diagnosis, chronic anteroposterior urethritis. Denied all former venereal history. Present venereal history, divorced from wife and without regular intercourse. Had had present symptoms about two and three quarter years, beginning about ten days after a carousal and intercourse with his "divorced wife." Showed a moderate, thick, mucous discharge, normal urination, otherwise negative. Bacteriologically, no gonococci, but frequent Gram positive bacilli. Though the man denied gonorrhea, he had a stricture which dilated with some pain to accept the Buerger urethroscope, which revealed a small, lacelike papilloma on each side of the roof, just back of the colliculus. Many enlarged mucous follicles in the bulb, and a very large lacuna magna.

CASE X. F. C. L., United States, white, twenty-six years old, single, salesman, referred by Dr. L. K. Tuttle. Diagnosis, third attack of chronic anteroposterior gonorrhea. His first two gonorrheas were apparently without feature, excepting that the second was of long duration. At the end of it, his urethra was dilated to 30 F. and he then ceased treatment. His present infection began four days after intercourse. When first seen, he showed thick, scanty, purulent discharge, otherwise negative, excepting for a decided lump in the midpenile region, with many shreds and some pus in the first glass. Twenty-four F. bougie à boule passed the node easily down to the bulb. The gonococcus was found in scattered fields. Without other instrumentation, epididymitis developed on the right side, which lasted for many weeks. After it ceased, an anterior urethroscopy was performed, showing the lump to consist of a stricture, behind which were bleeding granulations, which seemed to be the source of his discharge and symptoms.

CASE XI. F. S., United States, white, twenty-six years old, single, engraver. Diagnosis, second attack of anteroposterior gonorrhea. First attack was eight years ago, followed by rheumatism in the ankles, knees, and shoulders. Present attack dated back fifteen months, after three days' incubation. Showed a thick, scanty discharge, normal urination by day, occasionally disturbed at night. Had long noticed shreds in his urine, especially after squeezing the penis. True gonococci found in the shreds and discharge. First glass filled with small shreds. Urethroscope showed, seemingly, a normal, posterior urethra and bulb, with, however, a very unusual number of enlarged patulous follicles on the roof of the anterior urethra, from which pus could easily be extruded while the instrument was in place.

CASE XII. H. J. C. S., United States, white, thirty-nine years old, single, clerk. Diagnosis, chronic anteroposterior gonorrhea. Former venereal history denied. Present attack began from ten to twelve years ago. At present and since originally infected had never been free from discharge, which was thick, scanty, mucous, and purulent. Urination was normal. First glass showed shreds and considerable pus; second glass small pus shreds; third glass pus. Bacteriological investigation showed gonococci at each examination, except the last, about four months after beginning treatment. Urethroscopic investigation was most interesting, in that it showed a mucous membrane more or less damaged from the sphincter to the bulb. In the depth of the bulb was a distinct ulcer, as seen in the instrument, about the size of a lead pencil top, with edges overhanging and an indolent, unhealthy, boggy looking base. I had never seen its like before. Mucous follicles everywhere in the regions of the prostate, colliculus, bulb, and anterior urethra were manifestly involved. The lining of the urethra seemed generally affected. One can hardly hope for much result in such a case.

CASE XIII. H., United States, white, thirty years old, married, draftsman. Diagnosis, initial anteroposterior urethritis. Referred by Dr. T. K. Tuthill. Former venereal history denied. Acquired present infection five years ago after six or seven days' incubation. Had never been free from discharge. Wife apparently not infected. Numerous relapses, independently of any exposure, had occurred. Diurnal urination every three hours; nocturnal, twice. Urgency, tenesmus, and chordee moderate; control fair. Both glasses of urine were rich in pus. Urinalysis negative; cultural of pus negative for gonococci, but showed a large Gram positive diplococcus, both intracellular and extracellular. Gonococci not found by culture or smears. The local treatment of this case was along modern lines with ascending hand injections of zinc sulphate. The particular features of the pus, however, impressed me with the feeling that the patient had overdone the treatment. I, therefore, submitted him to a careful urethroscopy and found the urethra, from end to end, presenting a peculiar shaggy exfoliation, as though there were largely a medicinal urethritis present. Moreover, a number of prostatic ducts were patulous and seemingly infected; the verumontanum was covered with unhealthy granulation tissue; the bulb was almost entirely excoriated; and in the anterior urethra were the usual enlarged follicles. In virtue of these findings, the patient was taken off all local treatment and submitted only to internal sedatives, with the result that in about one month all visible

discharge had disappeared, with the sole exception of a few shreds. The source of these shreds would probably be corrected by giving, in due course, attention individually to the lesions named.

CASE XIV. M. J. W., white, thirty-eight years old, married, policeman. Referred by Doctor Pasternack. For many years, the patient had had a chronic urethral discharge, which had defied the efforts of his family physician and several first class specialists. Seemingly, no end to end examination of the urethra was done previous to my examination of June 28, 1912, which revealed enlarged prostatic ducts, chiefly in the left lobe; a very distinct papilloma on the left side of the verumontanum; a thin, cordlike stricture stretching across the urethra in the mid-penile region, with two large mucous glands proximal to it. A number of other mucous glands were present, from which pus could be squeezed. Under the treatment hereinafter described, this patient greatly improved.

This is not a favorable case, however, for complete cure on account of the distinct nervous tendencies, although the patient is muscular, athletic, and well built. In searching for the source of this nervous defect, I found sugar in the patient's urine, which only illustrates the wisdom of step by step investigation in these cases. Treatment for the sugar in his urine has improved his nervous condition.

Having presented a few cases illustrating why chronic gonorrhea may be so persistent and intractable, we next inquire into the causes of these conditions and their appropriate treatment.

The causes are anatomical, physiological, and pathological. The anatomical causes are inherent in the fact that the various portions of the urethra more or less tend to invite infections of the gonorrheal type and its corollaries. For example, we know that the prostatic urethra is normally the widest part of the urethra in diameter and is bounded behind by the sphincter and in front by the verumontanum. In this pouchlike cavity, therefore, the gonorrheal pus may lurk, and there set up those changes in the mucous membrane that are seen everywhere in other mucous membranes as the signs of persistent inflammation.

Passing forward to the verumontanum and the right and left prostatic sinuses on each side of it, we again find a complex anatomical arrangement, in which the inflammation may very easily reside and from which it is not easy to drive it. The posterior extremities of the prostatic sinuses, called the prostatic fosses, may be so shallow that they are difficult to recognize, as offset from the floor of the urethra on either side of the crest; or they may be so deep as to be difficult to illuminate and inspect with the urethroscope. This form of prostatic sinus usually has its floor thrown into folds, which only complicate the difficulty.

Where the verumontanum rests against the lateral prostatic lobes, the sinuses are long, narrow, and relatively deep, and invite the formation of granulations therein, with or without papillomata.

The fact that in these special parts of the urethral tract the walls are in apposition, much more closely indeed than are the walls of the urethra itself as a whole, tends to invite and augment those changes in the mucous membrane which the disease produces only too actively, even where there is no such close contact. If one may draw an analogy of this condition, it would be the persistence with which the victims of eczema suffer from eczema intertrigo

wherever the skin makes an angle, is folded upon itself, and remains more or less in contact, as behind the ears and in the cavities of the armpits, elbows, groins buttocks, knees, and interdigital spaces.

The great frequency of prostatic ducts along these walls invites the penetration of infection therein by the imprisoned pus. The roof of the urethra in the prostatic region frequently possesses a number of folds, from which proceeds the fact that cysts of the roof are so common.

The membranous urethra is a little less apt to be involved on definite anatomical grounds. The bulb, however, which is the next important part of the urethra, is far otherwise in its anatomical relations. It may be a slight or an extensive pouching of the ordinary passage. In the former case, lesions of its floor seem to be relatively infrequent. In the latter, however, one not uncommonly finds an interesting variety of conditions. The circular fibres of the urethra about the bulb are sometimes seen to throw the floor of the bulb into transverse folds, precisely like a miniature of the bladder. The mucous membrane as a whole may be rough, shaggy, or the mucous crypts may be infected. Ulcers and strictures, strictly as such, are sometimes seen at this part.

In the anterior urethra, the normal arrangement is the presence of numerous mucous follicles along the dorsum, any one or few of which may become involved and go on indefinitely to chronic suppuration.

Most anatomists assert that the anterior urethra has normally large mucous crypts, whose mouths are visible to the naked eye in the adult. It would be interesting to make a study of this fact, because I have recently urethroscopied one adult who never had had venereal disease, whose urethra showed at no point, an enlarged mucous follicle, excepting the lacuna magna. He was subjected to this examination for its moral effect upon his neurasthenia, which had a sexual basis. It is a well known fact, however, that mucous crypts are not only of a simple, but also of complex types, so that they do not only constitute little cuplike depressions; but may pass along under the mucous membrane, so as to form more or less angulated cavities. In such cavities as these crypts then form, the gonococcus may abide for life and defy all human skill in eradicating it.

Last and not least is the anatomical fact that the urethra at rest is a closed, collapsed tube with walls in apposition, which only tends to imprison discharge somewhat and grant the gonococcus still more opportunity to penetrate.

The physiological causes of the chronicity and persistency of gonorrhea embrace the two features of the normal activities of the various glands throughout the urethra, and the normal sexual activity of the various organs comprising the general external genitals. Thus it is that irritation and hypersensitiveness which accompany chronic involvement in a more or less degree tend to stimulate the sexual activities. This disturbance, in turn, inclines to invite penetration and prolongation of the trouble.

The pathological causes rest particularly in the

nature of the gonococcus and the germs which frequently accompany the gonococcus to penetrate into the deeper regions of any portion of the body surface attacked. Therefore, when the anatomical and physiological conditions have played their part, we find the disease has penetrated into the mucous follicles, the prostatic ducts, the seminal ducts, and the outlets of Cowper's glands (to say nothing of the seminal vesicles, vasa deferentia, testes, etc.), from which it is extremely difficult to eradicate them.

The pathology of chronic mucous membrane inflammation is well known and differs in no degree or detail in the male urethra from the pathology of every other mucous membrane, in male or female, in child or adult. Namely, thickening of the mucous membrane as a whole, cystic degeneration, involvement and obliteration of the mucous crypts, unhealthy granulation tissue, in spots or more or less disseminated. Where folds occur, these granulations go on to the formation of warts, which act as foreign bodies and produce a chronic discharge, germ bearing or not, as each case develops, and not infrequently to the causation of symptoms of stricture.

The last consideration is the treatment of these conditions when once they have been recognized. Many of these cases, particularly those that show the thickening, granulations, papillomata, and other changes in the mucous membrane, are those which, in the less refined and older methods of treatment, frequently do well under perineal drainage, rest of the part, and occasionally curetting. In a few of these cases, also, well balanced, carefully observed dilatation with sounds or the Kohlmann dilator has been of great value. The instillation of a few drops of strong silver nitrate, from 2.5 to five per cent. has in the past also been of great remedial benefit; but, after all, these methods of treatment are more or less blind. To-day, with the modern urethroscope and electrical applications through the fulguration wire, it is often possible to accomplish wonders. The strength of the current may be varied from mere desiccation to true cauterization, and one may have the pleasure of seeing cysts disappear, granulation tissue clear up, warts drop away, mucous follicles shrivel and close, and the entire situation improve. Through the urethroscope, after recognizing the situation of definite lesion, the surgeon may use the writer's light carrier, and make any form of chemical application he chooses. Thus is gained the advantage of first recognizing the exact situation of the lesion, and then carrying out upon it a selected method of treatment.

It seems to the writer that in the majority of cases, the chronic, gonorrheal conditions, which in the past have for so many years vexed patient and physician alike, will hereafter be accessible, tractable, and curable.

Inasmuch as these refined and advanced forms of treatment are carried out by stages and steps from one to two weeks apart, so as to allow the mucous membrane to recover fully from each treatment before another is undertaken, the recording of the diagnosis and lesions is of great importance. Hence, for office records the following chart is suggested. It is an accurate anatomical diagram of

the important features of the bladder and urethra as to floor and roof, and will be found to be of great convenience in remembering the lesions and in noting results of treatment.

The following chart is elastic, adaptable to almost any variation in the cases, and will be found serviceable. It needs no individual description, as the specimen record speaks for itself. It will be noted that on some dates occasionally treatments of the posterior and anterior urethra may be carried out, if, obviously, neither is very severe. As a rule, however, it is best to proceed slowly, permitting one operative field to heal before undertaking another. Otherwise, a reaction is excited in the mucous membrane which is very difficult to distinguish from the condition under treatment itself.

PEDERSEN'S CHART.

Name, N. Y. Z. Diagnosis, chronic anteroposterior urethritis.
Dates and results of treatment.

	July, 1912	Aug.	Sept.
	1 8 15 22 29	5 12 19 26	3 10 17
Lesions and means of treatment			
Cysts prostatic urethral roof	1 > > =		
Acupuncture			
Curette	yes		
Silver nitrate		10%	
Follicles of anterior urethra	1 > > >		
Silver nitrate	5%		
Fulguration (as below)		yes	
Caustic (mild)		yes	
	to 3 near bulb	to deep one near stricture	only small scar left
Papillomata of colliculus		- - - - +	
Snare			
Curette			
Fulguration		yes	
Sparkcap		yes	
Switchpoint		yes	
Seconds' duration		5	
Desiccation		yes	
Caustic			

seems to have dropped off

In speaking of the cure of these obscure lesions, sight has not been lost of the fact, that if the mucous membrane anywhere in the body is damaged beyond a certain narrow limit, recovery through any means whatever within our present knowledge is impossible.

It must also be remembered that any one undertaking this thorough investigation of obscure cases must be prepared to devote much time and patience to it. This recalls to mind a case referred to me by Dr. Jerome M. Lynch, that of a physician who had had a rectovesical or rectourethral fistula. My duty was to find, if possible, the vesical or urethral end of the fistula, and I was asked to get in and out quickly, which was manifestly an impossibility. This fact, however, seemed incomprehensible to the patient, who was much disappointed because this could not be done.

In closing, I would lay down the principle that it is neither just nor wise, on the one hand, to discharge a patient from treatment of a gonorrhea, nor, on the other hand, to accept a case giving a history of long continued symptoms, without a most careful, persistent, and painstaking examination with the urethroscope. If this is not undertaken, we may well expect the case to remain much as it was when first presented to our care.

The day is passing, and the field is getting nar-

rower and narrower, in which any methods of blind treatment are acceptable. Hence, in this as in all other fields of medicine, careful diagnosis in chronic gonorrhea is the key of the situation.

45 WEST NINTH STREET.

BLONDS AND BRUNETTES IN THE TROPICS.

By CHARLES E. WOODRUFF, M. D.,
San Francisco,

Lieutenant Colonel, Medical Corps, United States Army. Sanitary
Inspector, Western Division.

(Concluded from page 729.)

We must revise our ideas as to where to send patients with Bright's disease, for we must consider parenchymatous nephritis an essentially climatic disease in white migrants in hot climates and due to lack of pigmentation. It is more frequent in such types in the tropics than in the United States, more frequent in our south than in the north, more frequent in our hot cities than in the cool country, and more frequent in the United States as a whole than in the northwestern corner of Europe whence we came. But in those places where the nights are so cool that one does not perspire, the hot days are less harmful, as thirst makes us replace fluids when the specific gravity of the blood rises unduly. It is one of our national perils, yet the tropical board did not see the evidence of what might be called *tropical dehydration* from lack of pigment.

Though many physicians advise a wee bit of alcohol in the tropics and deprecate too much, we have an explanation of the paradox that drunkards, in spite of the damage done by alcohol, often stand the climate better than abstainers who take too little water. The drunkard takes enormous quantities of water and his kidneys are less irritated by alcohol than by the high blood specific gravity of abstainers.

The manner in which dehydration produces uremic symptoms in heat cramps and cholera, and cloudy swelling of the kidney cells, is not known, but it is probably through an alteration of the blood's osmotic power, though Dr. Martin H. Fisher, of Columbia University, has proved (*Curtwright Prize Essay*, 1911), that both acids and alkalies produce swelling of kidney cells, and that salts administered simultaneously prevent it, by diminishing the capacity of colloids to take up and hold water. He mentions cases of nephritis, some with complete anuria and coma, in which rapid recovery followed rectal injections of solutions of NaCO_3 and NaCl , as in the miraculous cures of heat cramps in the navy. Fisher says: "All the changes that characterize nephritis are due to a common cause — the abnormal production or accumulation of acid in the cells of the kidney." It is to be noted that interstitial nephritis, though a frequent complication of parenchymatous nephritis, has entirely different causes and really belongs with the sclerosis, yet all cases are often grouped together in morbidity reports, making it difficult to

detect effects of climate. Some years negro soldiers had more nephritis than whites, some years less or none at all.

Hematin, chlorophyll, and visual purple are all intensely sensitive to changes by light rays, and are similar chemically. When there is not sufficient pigment to keep the light out, the hemoglobin is always reduced, even in the face of a high blood count. I do not remember having seen any comparative studies in any tropical place of a group of say twenty or thirty yellow haired, light blue eyed men of the Baltic race and an equal number of black haired, dark brown eyed, swarthy skinned men of the Mediterranean race, but it is safe to predict that the former will show a higher grade of this kind of anemia after sufficient time. What I do know from thousands of observations without microscopic confirmation, is that this form of anemia is progressively worse with the blondness and length of stay. Moreover, there is a disease which should be called *tropical anemia* and it is due to light and probably to the light alone. The existence of this condition has been denied many times, but denials do not destroy the fact that the only cases of disabling blood diseases were in "blonds," one each of pernicious anemia, secondary anemia, and polycythemia. In spite of this evidence, speaking of light rays which penetrate the skin and are absorbed by the blood, the board says: "Whether they can produce such changes in that fluid as to lead to constitutional disturbances still remains an unsettled problem." On the contrary, the NEW YORK MEDICAL JOURNAL, years ago, called attention to the fact that Haldane, in 1896, proved that light remarkably diminished the oxygen carrying power of the hemoglobin, and Hasselbach, ten years later (*Upsala Läkareförenings Förhandlingar*, ii), showed that light had "a marked effect upon the tension of the oxygen in the blood" and modified the respiratory efficiency of the cells. In addition, Warthin (*American Journal of the Medical Society*, May, 1907) has shown that x rays, whose penetration is the same as the shortest ultraviolet, did cause, in cases of leucemia thus treated, extensive degeneration of the kidney epithelium, with calcareous deposits, a toxemia due to excessive destruction of leucocytes, and more or less damage to the nervous system, and now we hear (*Münchener medizinische Wochenschrift*, May 21, 1912) that even thorium emanations have proved fatal in a case of rheumatism in which they were administered to stimulate metabolism. A hemorrhagic diathesis is produced, with bleeding from intestinal tract or kidneys, and the condition has been caused experimentally in lower animals. Moreover, albuminuria may occur as in the case of the twelve soldiers injured by dehydration.

The board failed to find a change in blood pressure by long residence, but other observers have found it. There was no investigation of changes in viscosity. Watkins-Pitchford has found in South Africa that with the increase of red blood cells which always goes with elevation, there is greater viscosity, more arterial friction, compensatory hypertrophy of the heart, and, later, dilatation (*Transvaal Medical Journal*, December, 1910). Only thirty-four per cent. of white school children in

Johannesburg have normal hearts, yet these Boers, because they have not died at once, are often cited as proof that they will never die out in such an unsuitable place.

We must remember that there is a general agreement that living substance originated in darkness, when the earth was warm and surrounded with dense clouds by which sun rays were wholly excluded, and that the molecule of protoplasm, while adjusted to a certain intensity of infrared, is broken up by all other rays, if intense enough. The reason we cannot see ultraviolet and infrared is very evident. The retinal elements (rods, cones, and visual purple), which transform a wave into a sensation, could not possibly exist if they utilized rays which could destroy them. Hence the most vision is in the relatively slow and harmless yellow, and the visibility decreases as we approach the harmful ends of the spectrum, as these are absorbed or destroyed in proportion to their harmfulness, and the most harmful are so completely destroyed as to be wholly invisible.

Some lower animals are intensely sensitive to infrared and ultraviolet, and the rays near the red and violet may give them a sensation of light, but it is much more likely that the sensations are merely those of comfort and pain. Certain ants, for instance, flee in great excitement from the ultraviolet, while infrared of moderate intensity attracts other insects. But in the case of man's retina, everything shows that both infrared and ultraviolet, as well as the visual rays at both ends of the spectrum, are very harmful. Amber glasses exclude both ends and are protective for that reason, and yet the visual rays are not diminished. In this respect it must be noted that plants which utilize sun's rays for nutritional purposes absorb a band or two in the visible spectrum or some dark rays just beyond either end. They cannot use very long or very short rays, nor much of the yellow as a rule, nor any of great intensity, no matter what the length. There is probably a close relation between wave length and the size of the molecule of protoplasm, and this may be the basis of all these remarkable phenomena. The protective pigments of animals are derived from hematin which has been changed by the light, and chlorophyll is very similar chemically. It might be well then to look into the gradation of our hemoglobinometers, which were largely developed in the cloudy northwestern corner of Europe. A reading of 100 is so rare in sunny America that many physicians have been inclined to believe the grading too high, but now we must consider whether the results do not mean climatic anemia.

The board says that monkeys exposed to heat die of thermic fever, as man does in similar conditions, therefore these and similar facts make it doubtful whether light is a factor of any importance. It surely is not, as heat alone causes thermic fever. Besides, monkeys are well protected from light and live in the cool shade. If they had been dipped in boiling water in the dark, they would have died sooner still and we should be sure that light was not responsible. "It is well known that heat and humidity in an experimental chamber and in the absence of light, can produce symptoms simi-

lar to those occurring in milder degree among residents of the tropics." This is the opposite of the facts; if we avoid a danger, it never hurts us, but our escape does not disprove the danger. A ship has never yet been sunk by icebergs if it steers around them, but that does not disprove their danger. Tropical light has not hurt white ants in millions of years, because they hide from it. Similarly, I know of blonds who have been in the tropics over forty years, with occasional trips home for recuperation, but they stay indoors as a rule, like white ants. The purpose of the original publication was to point out only one of the many dangerous factors which caused so much death and invalidism in the war conditions from 1898 to 1902 when exposure was inevitable. Since 1902 there have been very laudable, persistent, and successful efforts to avoid these dangers, and as a result the sick and death rates have been and are progressively lessening. If we could avoid all climatic damage the blonds and brunettes would fare alike. If we could accept the board's figures they would be a splendid proof of the success of the army sanitarians, but there is still a marked difference, even with all the care we now take to keep men out of the sun and heat in peace times.

In an article on The Harmful Effects of Small Amounts of Light and Heat (*American Medicine*, New York, July, 1912), the following is stated as the result of the study in 1910 of 323 men of troops which had been in the tropics two years:

There were but two deaths from disease, both men with blue eyes, fair skin but dark brown hair. Six were sent home with illnesses not curable in the tropics, five of these had blue eyes, fair or ruddy complexion and the usual brown hair of our lighter types, one being light brown, and one was a light Brunette with brown eyes, dark skin but brown (not black) hair. The one man who committed a serious crime (murder) had a fair skin, blue eyes, and light brown hair. Of the six who had been overcome by the heat exhaustion, five had blue eyes, and one brown but as he had brown hair and ruddy skin he was not a Brunette. One troop reported thirty-two as having been overcome with the heat—evidently misunderstanding the question, as no organization ever has that many prostrations—and they had the usual proportions of blonds and brunettes. Three troops said that no one had improved in health, one reported two who were of medium complexion, and one reported twelve with the usual proportions of types. That is, a blond underfed recruit can improve in health even under adverse conditions if fed up, but from the large number in this one company where others had none, the figures cannot be accepted. Sixty reported that their health had deteriorated, and 169 that there had been no change in their health, but on the way home seventy-nine of the regiment broke down and went into hospital, sixty with malaria, one of them dying. As they were a rather anemic thin looking lot, they were not as well as they thought.

In interpreting the foregoing, it must be remembered that thirty per cent. of the troops were recorded as brown eyed, but only thirteen per cent. of the sick and dead.

The board tries to prove that the few insane or nervous wrecks still going home on every transport do not indicate this climatic damage in spite of all our care, and then it compares tropical with home statistics, but fails to state that many of the home cases arose in the tropics. As in all the rest of the world most of the neurasthenics are women, and it states that women "rarely go out in the

sun," whereas they are notorious for their carelessness.

To show by actual figures the results of three years' exposure in war conditions, the following is quoted from *The Effects of Tropical Light on White Men*:

In two regiments which gave me the data of 1,294 men who had served over two years in the tropics the results are as follows:

	Numbers		Percentages			
	Blond.	Mixed. Brunette.	Blond.	Mixed. Brunette.		
Died	22	32	16	5.25	6.20	4.50
Invalided	47	72	31	11.20	11.00	8.70
Deteriorated	106	130	76	25.25	25.00	21.40
Retained health	227	201	211	54.00	50.40	59.20
Improved	18	23	22	4.30	4.40	6.20
	420	518	350	100.00	100.00	100.00

In less than three years, forty per cent. of the soldiers in the field die, are invalided home, or are deteriorated in health. The surgeon general's report for 1904 shows that in the previous year the losses by death and invaliding were 70.67 per 1,000, which is a vast improvement over the foregoing statistics, and shows how much harm resulted from exposure to the climate in war time, and how much illness we can avoid by careful protection.

"It does not seem that any effort is now made to spare officers or men from exposure to the sunlight," is a reflection on the line and medical officers who have exerted themselves so successfully. The error arises from the fact that the board did not serve with troops and was evidently unaware of what it denied.

The foregoing facts when properly analyzed to eliminate conditions like venereal diseases and accidents having no climatic bearing, thus show that in spite of care the blonds as classified still have decidedly greater morbidity than brunettes. If marked blonds are compared with marked brunettes the difference is greater, as also shown, and if we compare white men with the black and brown the difference is enormous, as shown in the following table, copied from the *Report of the surgeon general (1910)* as to admission rates for diseases in the three types in the Philippines in 1909 (p 114), remembering that the browns are the best adjusted, black less so, and whites the least.

1909 ADMISSION RATES IN THE PHILIPPINES.

	White.	Black.	Brown.
Venereal	290.20	418.46	48.61
Dengue	138.13	50.04	12.20
Diarrhea and enteritis	31.22	25.02	38.74
Dysentery	44.50	28.47	9.50
Furuncle	37.15	23.30	18.07
Alcoholism	23.63	8.61	...
Muscular rheumatism and myalgia	18.66	32.79	16.95
Tonsillitis	18.83	15.53	1.80
Articular rheumatism, acute and chronic	6.85	15.53	3.54
Appendicitis	7.70	2.59	.93
Typhoid fever	6.59	1.73	1.30
Malaria	115.10	84.56	291.05
Beriberi .....	.17	...	103.93
Bronchitis, acute and chronic	24.47	34.51	43.40
Intestinal parasites	3.68	...	29.43
Dhobie itch	12.32	25.50	19.09
Tuberculosis	4.96	6.04	5.96
Influenza	1.03	...	4.28
Pneumonia	1.20	.86	3.54
Cholera .....	...	...	1.68
Smallpox .....	...	...	.56

In 1910 there were no black troops reported, but the relative morbidity of white and brown in the Philippines was essentially as in 1909.

The greater the maladjustment, the more the sickness, as shown by the following statistics (*Surgeon General's Report, 1909 and 1910*). Western Alaska closely resembles our ancestral environment in northwestern Europe, and deterioration in the Hawaiian Islands is slower than in the real tropics.

ADMISSION RATE PER 1,000.

	Disease only.	Total.
Whites in Philippines, 1909	1,159	1,351
Negroes in Philippines, 1909	1,127	1,314
Whites in Philippines, 1910	1,048	1,242
Whites in United States, 1910	866	969
Whites in Hawaii, 1909	839	1,180
Philippines in Philippines, 1900	747	876
Whites in Hawaii, 1910	720	1,009
Negroes in United States, 1910	623	827
Whites in Alaska, 1910	329	452
Whites in Alaska, 1909	281	390
Army as a whole, 1910	931	1,007

That is, in the Philippines brown men are the best adjusted, have only two thirds the sickness of whites, and have the smallest rates in everything except the diseases to which they are susceptible by race or habits—malaria, beriberi, bronchitis, intestinal parasites, cholera, etc. The blacks are not so well off, as they too are unadjusted, but they have far less sickness than whites, excepting rheumatism, which is elsewhere explained, bronchitis, and venereal diseases. In the other conditions the cases are too few for generalizations and vary from year to year. In spite of these tremendous facts, reported year after year, the board says: "We do consider that they (the blonds) are fully as resistant to the Philippine climate as are their darker skinned companions!"

The error follows upon the well known deception of averages and totals. When we include all diseases, each dark race is found to have something (venereal diseases, malaria, or beriberi) to increase its total sickness. Injuries increase the totals still further and tend to equalize them, as the figures show.

The gradual deterioration in the tropics is shown by the death rates in the Philippines by years of service in the army, much of which is in the tropics (*Surgeon General's Report, p. 112, 1911*):

Years of service.	Per 1,000.	
	Deaths.	Admissions.
Under one	1.86	1,121.70
One to two	1.26	1,388.01
Two to three	2.83	1,199.07
Three to four .....	...	723.68
Four to five	3.35	924.81
Five to ten	3.10	985.17
Over ten	5.81	735.14

The increasing mortality is in marked contrast to the reduction in morbidity through elimination of the weaklings and increasing knowledge of how to avoid illness. Old timers are the most resistant survivors, but when they do get sick in spite of acquired knowledge, their death rate is nearly ten times that of men after the first year of stimulation is passed. The two classes cannot be compared. In addition to all this, we are now learning that the damage resulting from the climate may not show itself for many years. The Spanish War volunteers did not begin to enter the National Soldiers' Homes with tuberculosis until some years after the war closed. Those who think the islands an Elysium for children and old men, or even for those past the physical prime, but wise enough to avoid illness, should ponder well the following facts as to whites in the Philippines (*Surgeon General's Report, p. 112, 1911*):

Age.	Per 1,000—	
	Died.	Sick.
Nineteen and under	5.15	932.40
Twenty to twenty-four	1.62	1,349.30
Twenty-five to twenty-nine	3.32	1,042.30
Thirty to thirty-four	2.82	811.33
Thirty-five to thirty-nine	5.44	744.08
Forty to forty-four	1.58	618.07
Forty-five to forty-nine	10.60	663.12
Fifty and over	20.62	597.94
None are over sixty-four.		

That is, in spite of carelessness, the boys get sick less than men under thirty years of age, but suffer dreadful mortality, and men over fifty years old have less than half the illness of men of twenty to twenty-four, but when they do fall ill, their death rate per 1,000 of sick is nearly thirty times more. How erroneous, then, for the board to have grouped the older men of long residence with the young men still undamaged! How wrong for men over fifty years old to go out there!

If in the Philippines we give the same light protection to white men that Nature gives to the brown, guard them particularly from temperatures over 82° F., protect them a little more from mosquitoes, and forbid long residence, the sickness would be reduced by at least one third, not counting possible reductions of venereal diseases. This shows how serious it is to deny the influence of factors against which pigment is a protection.

The *Journal of Tropical Medicine* for February 1, 1911, says: "Doctors Duncan and Sambon have separately proved that the best sunprotecting color is an orange red wherewith to line the helmet, hat, or headgear, whatever its form," and that a certain cloth is impervious to the light which is so injurious to skins not as heavily pigmented as the natives of light countries. E. C. C. Baly (University College Chemical Laboratory, London) showed that ultraviolet rays were stopped by certain opaque cloths, and certain cases of "prickly heat" were thus cured. Any color opaque enough will do the same, but the quotation is inserted here to show what little scientific weight is so far given in England to our board's failure to find any harm in light in the tropics. Even in darkest England, where blonds are nevertheless intruders, Shrubbsall found them specially liable to certain diseases (St. Bartholomew's *Hospital Reports*, 1903), and MacKintosh also finds similar facts (*British Medical Journal*, October 8, 1910). Professor Lionel W. Lyde, of London University (*Contemporary Review*) almost goes to the extreme of predicting the eventual extinction of blonds from their lack of adjustment to modern industrialism, though they will last forever in their appropriate breeding grounds. Now comes Sir William Bennett (*Practitioner*, June, 1910) with a keen observation that the tuberculous need the conditions of their "native" climate, even if it be a dark house in darkest London—and by native he means "adjusted."

Other scientists are discovering unexpected facts, showing that we are limited to a much smaller zone or area than we formerly imagined, but that we can survive migration a long time if the change is not marked, and modification by survival of the fittest takes place and a new type results. For instance, Professor Ellsworth Huntington (*Palestine and its Transformation*) found in the Bashan highlands at 33° N., where the climate is cool and somewhat moist and cloudy, that among the Druzes there still persist the blue eyes and brown hair left by the crusaders. Only 120 miles further south, in a very small, isolated, rough country in the Dead Sea depression, where the climate is wholly different, there is a remarkable negroid survival. This is the same phenomenon as we find at the southern end of our Alleghanies. In the cold, cloudy mountain tops the Baltic type survives pure, but at the foot of the

mountain, 100 miles away, negroes live. Neither type can survive where the other does. Similarly in the tropical Andes there are decaying remnants of the Mediterranean race, but the very dark Indians of lower levels cannot survive there. In central Italy too the blonds are mostly in the cloudy uplands—also in northern Spain. But there is absolutely no instance of survival of many generations of blonds in sunny places—that is, real blonds of the Baltic type.

The same phenomena are seen in northwestern Canada, as a physician from Alberta tells me. The Indians and halfbreeds suffer severely from racial susceptibility, the whites less so, but the blonds among them have an undue proportion of cases. During the cold, dark winter they all do so well that they rarely ask medical advice; but, as the light season begins, about March 21st, they deteriorate, and as it ends, September 21st, the cases are improving. The heat lasts only a few weeks, from June 20th to August 20th, and cannot be the sole cause.

Exactly the same phenomena of deterioration in the light months and improvement in the dark, are seen also in New Mexico, so I am informed by Doctor Ingalls, of Roswell, where there is no cold weather at all. Moreover, he tells me that his cases from the north are blue eyed to a large extent, and that the cases doing the worst are those so accurately described by Hippocrates. Roswell has 300 clear days and the Adirondacks about an equal number of cloudy ones, and the deterioration in Roswell is more than in the Adirondacks. Indeed there is a summer exodus from Roswell. During the rest of the year patients are kept in the shade, as those who exercise much in the sun come to grief.

While this investigation was going on, I learned that the Bureau of Science borrowed books on light effects to study, not having them in their own library! Nevertheless, in spite of knowing nothing about the subject, they were willing to aid and abet an attack on an accepted scientific law so universal as to have no exceptions,—the law of adaptation. It was not so long ago that this bureau, or the agricultural bureau, made an attempt to breed up a horse fit for the islands by selecting as breeders some animals which had utterly failed and had been discarded by their owners as unfit for the environment. The bureau did some most excellent work before the climate began to affect any one, but it is now time to question its publications. It is pertinent to remark that the members of the board were light types except one or two, and one of the dark was found professionally unfit for promotion about the time the investigation was begun, but was given another trial. Rumor says he failed on this subject of tropical sanitation, and the blond president was one of the examiners! This must not be interpreted as meaning brunettes are more injured by the climate nor that the blond examiner was at fault. It may have been due to the system, as well as tropical light. The newspapers inform us that there is bitter opposition to these examinations, which were designed by men long since dead, and which have been abandoned in civil organizations long ago. The claim is made that they are mere memory tests which favor drones with keen memories who have never done anything but draw pay, and we are

liable to deprive the nation of the services of experienced workers who have been too busy to memorize details with which no officer should burden his mind. In the tropics they are said to be very unfair as the light and heat destroy memory for details in both blonds and brunettes. It is said that line officers are now studying ways and means of ending their system and make promotion depend upon prior work—original or executive.

"The direful effects of the Philippine climate which have been so vividly depicted by Woodruff relate to the earlier days of the American occupation, and are not seen at the present time." The remark is too flippant to appear in a serious article, and it indicates inability to see the bad conditions still being produced; particularly in the chief surgeon, who was in a deplorable condition at that very time and who died before the article denying any such effects was received in this city. He was a blond, and, by the way, his death, though due to the tropics, is necessarily classified as due to pneumonia induced by California's climate—an illustration of the way death rates in tropical places are kept low.

It must not be thought for a moment that the board deliberately made false statements. It believed everything said. It is an illustration of "suggestion" and could be used in a course of lectures on psychology. It is significant of "suggestion" that the chief surgeon believed the climate beneficial, but he paid the penalty which will be meted out to many another misled by such articles. This one was "published with permission of the Chief Surgeon, Philippines Division," and it now looks as though he ordered it, but he is dead and cannot tell us.

Increased normal suggestibility, by the way, is another of the effects of light on blonds, as I have often noticed it in others and have been victimized by it myself. It is the cause of much of the bickering among tropical residents and arctic explorers. Twice have I seen an evil minded man, lacking in a sense of honor, put a large command into a state of inefficiency, through constantly suggesting to the suggestible commander, that officers were always doing wrong. One officer was so influenced by the "suggestion" that the climate was perfect that he actually proposed to accustom his soldiers to it by marching them in the sun at the hottest part of every day. He too was a blond stimulated by light, but he was in hospital within a year of leaving. Some years ago a certain nation would have been brought to the verge of war by the misinformation of a tropical agent, affected by the climate and under the influence of suggestion, had his mental condition not been recognized by the cooler heads at home.

"The subject needs much more study before a definite conclusion can be reached." Yet these blonds come to a very definite conclusion from one year's study that pigmentation *per se* is useless, and reject the twelve years' study of one who has specialized on it, and reject the work of hundreds of others too. A little pigment was seriously needed.

In tropical medical articles we must now do as the constabulary officials do, and scrutinize more closely before acceptance, to see if the facts really are as stated, whether facts adverse to the conclusion have been omitted and all available assistance

has been obtained from experts. The complexion of the writers must be taken into account and how long they have been in the tropics and whether they have yet been affected by tropical light. I have been informed many times that in the civil profession here and in Europe, there is the same conservative opposition to new ideas, as led our professional forefathers to vilify Jenner, Pasteur, and Lister for their bizarre theories. Anything which appears to negative a new truth is seized upon with delight, and now von Schmaedel's theory must suffer the same martyrdom through misrepresentation. I have been repeatedly informed that many physicians are industriously circulating the rumor that I, and not Duncan, of England, had advised orange red underclothing, and they have expressed the greatest pleasure at the failure of these tests to show the vast benefit of wearing thick red underclothes in hot weather. The unscientific experiments were not made with my knowledge and I have always disapproved of them. The result, nevertheless, confirms my theory.

Most of the medical journals were at first incredulous as to von Schmaedel's theory and published harsh things about it, particularly the *British Medical Journal* and the *Journal of Tropical Medicine*. They have all been more or less convinced of the truth except our own *Journal of the American Medical Association*, which in this respect is the most backward in the world. An editorial writer on its staff has been persistent in false statements, misinterpretation of facts, and in the naive faith with which he accepts all adverse opinions and rejects the favorable. Luckily, to use his words, any careful reader must have observed the lack of poise which characterizes many of his pronouncements. Some of the debatable features are presented by him in a form so convincing and a style so entertaining, that the lack of poise in places is readily overlooked. The members of the association should resent this misuse of their journal, and, thank God, there are independent journals to give the truth.

The *National Geographic Magazine* has been another offender, though it should have been eager for new climatological facts. C. J. Con, of the Weather Bureau, wrote me that he would not even read such "hallucinations." This accounts for much. One physician who opposed the theory confessed to me he had not read the evidence. Even Osler misstated the facts in his textbook. Nevertheless, Professor Giuffrida Ruggieri, of the University of Naples, told the Eugenics Congress in London, July 25, 1912, that researches in the United States (not the Philippines) make it certain that the races of man acted in exactly the same way as the races of animals.

Professional opposition is gradually fading, and, what is much more important, the alleged benefit of sunshine in tuberculosis is rarely mentioned, though a few years ago, Dr. S. A. Knopf, of New York, who applied these dangerous rays to the naked bodies of his patients, was able to publish many opinions in their favor, but no facts. In the very issue of the *Journal of the American Medical Association*, June 1, 1912, which accepts without scrutiny the alleged proofs that blonds in the tropics are as well off as brunettes, Dr. Lawrason Brown de-

scribes the treatment of tuberculosis and does not mention sunlight at all. On the other hand, he shows that in the Adirondacks during the light season beginning about Easter time, the patients lose weight quite rapidly, and this continues until late in August, or early in September, when the glary season is over. Then, when the light is reduced to safe limits for northerners, the patients increase in weight until Christmas, the darkest period of the year. They hold their own or decline but slightly until the light comes on again, and this slight decline of some may be due to the excessive cold, for which they are not adapted. The rapid decline at the beginning of the light season has no relation to heat, which does not begin to be oppressive until the summer solstice. It must, then, be the light of the tropics as well as the heat which makes tuberculosis so appallingly rapid in those lacking pigmentation. Even in the native, who normally hides away at midday, the disease is rapidly fatal if he works outdoors at that time, but if properly treated, he is quite as curable as Norwegians in Norway. We should take a lesson from Hippocrates and find out which ethnic types do best in each season in the Adirondacks and which worst. We do not know what types are best there, as the country had never been inhabited the year round, until a century ago. The Indians lived in the lowlands in winter and went up in the mountains only when the snow did not drive the game down. Soon we will hear the phthisiographers advising against sunshine, for it is safe to predict that the blonds, as as in the Alps, will be found to do worst in summer and perhaps the little brunette the worst in winter.

Light is very effective in curing local foci it can reach, but it does this through its irritation, not as a bactericide, as the bacteria have been proved to be unaffected until the increased serum flow damages them. Air outdoors, cool enough for the type of man, seems to be the main reliance, neither hot nor very, very cold, and it is as good for a tuberculous vertebra as for a tuberculous lung. Its effect is lessened by excessive light to the body as a whole.

These comments are based upon the article published privately by the president of the tropical board, as I have not seen the official report, but I reserve for future publication more dark facts explanatory of this curious opposition to the acceptance of the proofs of the effects of light on men. If we ignore the use of pigment, the government will continue to lose many thousands of dollars yearly through sending unfit types to the tropics—not to mention avoidable pensions to unfit men.

CONSTIPATION AND ANEMIA.

By BEVERLEY ROBINSON, M. D.,
New York.

With girls and young women the two conditions are more frequently found than with older women, or men. Indeed, as we know, among all classes this unfortunate combination exists and affects a very large number of people. The causes, prevention, cure, have time and again been considered by able and experienced physicians who, both by written and spoken word, have tried to lessen or overcome

the evil—I mean the ill health always resulting therefrom. It may be that I have nothing new or effective to add to the total of knowledge thus far acquired. It may be also that what I advise will not be of service, except to the limited few. With daily and increasing experience, as I have, of the importance practically of this matter, I herewith offer some thoughts and suggestions which will now, or later, I trust, prove helpful.

Many mothers are to blame in this matter, not always through lack of conscience, but by reason of ignorance. The ignorance proceeds from the fact that the trusted family adviser is becoming non-existent; hence the mothers are not instructed as they should be. If they were, the grave outcome of neglect would be plainly, and if need be, repeatedly told them. There are, regretfully be it said, quite a few silly, indifferent, or lazy mothers to-day, when it is a question of primary home duties. Other things, and many of them, occupy all their time and attention. They must run the house, attend to exacting social duties, be participant in reforms outside of ordinary humdrum life, minister to charities and churches. The young daughter grows daily paler, weaker, perhaps listless; school is found to be too much; subsequently, perhaps, theatres, teas, dinners, late hours, and insatiable novel reading must be limited. The doctor is consulted. He is a young fellow who is still doing general practice until he can get higher, as he believes, or until, at all events, he can have an easier, less arduous, trying life. Again, it is the man who has already acquired a reputation as a specialist in one direction, or another; heart, lungs, stomach, kidneys, etc.

Up to date, God be praised!—we have few doctors who are anticonstipation experts. If one or other of the specialists be consulted, what is the outcome? Usually the bowels are attended to once with a dose, or fractional doses of calomel, followed by salts. Is the constipated habit duly considered, as it should be, not for a day, or two, but for weeks or months until it is corrected or cured? In hospitals, as well as in practice outside of them, careful daily ocular examinations of stools are too much neglected, and yet they are quite as important in many cases, as repeated routine examinations of urine. On hospital charts, while we see many specified data recorded about urine, we find little or nothing about stools except the number, or the fact noted that there has not been a fecal evacuation. Of its nature, or quantity, unless there is diarrhea, marked or profuse, frequently nothing is recorded. Not infrequently, however, the daily stools are hard or insufficient; or they are foul smelling, too light or too dark in color, showing too little or too much bile, or they contain notable quantities of inspissated mucus or some blood, or they afford distinct and easily recognized evidences of indigestion, stomachal or intestinal—proofs, it may be, of improper or badly prepared food.

Again, it may all simply mean that the digestive organs are functionally not doing satisfactory or healthful work. The blood or mucus or other things noted, may put one on the lookout for some organic local trouble which previously had not been suspected. The neglect of which I write must be shared sometimes by attending physician, house

physician, and trained nurse. The two latter, not to say the former, are occasionally both ignorant and careless.

It is not always essential to make microscopic or other laboratory examinations of the stools. The experienced eye or the symptoms and previous history of the patient will determine this necessity. When they do, in a positive way, however, the patients are not ordinarily the every day young women, who are presumably suffering from simple anemia and constipation. They are rather those affected with some obscure or unusual disease or complication, in addition to anemia, which once tracked, so to speak, is not again lost sight of, but followed up with the best methods of investigation. The moral of the tale is, never ignore, practically, the precise conditions of the stools in any patient.

How may cases of anemia and constipation be cured? First, it is essential to go to the closet every day at a fixed time; usually, soon after breakfast is best. Again, it is necessary to have the diet properly regulated, not to overeat, to avoid foods that are known to be constipating, for a while or until immunity is established; to avoid excess of sweets and uncooked fruits or vegetables. Proper daily exercise in the open air, particularly walking, is obligatory. No fashionable observances or unwise advice should be permitted to interfere with the régime pointed out.

In the way of drugs, aloin in minute or small doses, given as granules or tablets, at dinner or at bedtime, is the most useful and least objectionable. Frequently it may be combined advantageously with belladonna, strychnine, and ipecac. When the daily evacuation has been delayed or prevented from some accidental cause, one or two glycerin suppositories will give a sufficient movement in a few minutes, and are preferable to other local means. Without strict attention being paid to the preceding instructions, it is frequently almost useless to insist upon iron or arsenic in any form, or combined. It is all very well to give Blaud's pills or Fowler's solution or both to anemic girls and women, and indeed it must be done to get a permanent cure of anemia. But, primarily, the thing to provide against, correct, or cure is the constipated habit. The longer it lasts, the more difficult it is to counteract effectually.

A time may come, when neither habits nor medicines will cure. Relief, even temporary, is the best we may hope for. I rule out of consideration risky or ill advised surgery.

42 WEST THIRTY-SEVENTH STREET.

DIAGNOSIS BY INSPECTION.*

By MARK I. KNAPP, M. D., LL. B., LL. M.,
New York.

Is it possible to make a diagnosis by mere inspection? This question must be answered in the affirmative. Perhaps a diagnosis by inspection cannot be made in fully 100 per cent., but, surely, it can be made in seventy or eighty per cent. of the cases; it is simply a matter of training and practice.

To understand this question, one must first be fully convinced that there could not possibly exist any pathological condition within the body without influencing the body as a whole, or without leaving its impress upon the body. *A priori* this must be assumed, and this assumption is warranted by the indisputable fact that all our organs and all our tissues exist for a certain and definite purpose; they all have their definite functions. True, we have not yet fathomed the functions of all the organs, but this would not argue against my proposition.

The human body, as a composite entity, reflects outwardly the constructive unity of its component elements. And, while we flatter ourselves that the perfectly formed body is an object of beauty, nevertheless, it would be idle folly to assume that beauty was ever intended in the make up of our body. Furthermore, the very conception of beauty is arbitrary. The very object which enraptures the Caucasian may be an object of pity and sympathy to the Chinaman or Indian and vice versa. Therefore, let us not look upon the human body as devised and intended for the mere purpose of beauty, but that, instead, the outward appearance and shape are the necessary consequences of the forms and conformations of the organs which are secreted beneath the outward shell. Our skin and the adipose tissue beneath might perhaps be compared to a coat of varnish, equally applied over the organs and structures of the body. The varnish, when equally applied, necessarily follows the outlines of the body which it covers. So does the skin; the skin follows the outlines of the organs and tissues which it covers.

The one thing, prerequisite and essential to acquire the art of inspection, is to acquaint ourselves, first, with the appearance of the normal body. This cannot be studied by any set laws, or by any pictures, no matter how beautifully executed these may be. Every opportunity must be sought and used to practise and to train ourselves in the inspection of the entire body. No matter what be the symptoms of the patient, the entire body should be inspected. If the patient is made to understand that he consults the physician in order to get well and, if he is made to understand that from the symptoms alone not always can the seat of the pathological condition be guessed, the patient will soon realize the importance of a thorough, routine examination of the entire body. Without such routine examination, insisted on and persisted in for years, I should never have discovered this art of inspection.

We must first learn to know how the normal body looks. What is the usual appearance of the tall, and what of the short person? How looks the fat, and how the lean person? In the normal person all changes of level are rounded, graceful, and pleasing, never abrupt; there are no obtruding prominences, nor marked depressions. Any abrupt changes should make us ask, mentally, the reason why. At all times we must look for symmetry. How does the one side of the body compare with the other; how does the right side compare with the left side? Any difference noticed, no matter how insignificant, is not a matter of chance, but must be explained. The slightest depression, the slightest elevation, a scarcely noticeable sulcus or ridge, a tremor, a

*Read before the Philadelphia Clinical Society, followed by demonstration upon patients supplied by the society, May 6, 1912.

twitching, a slight pulsation appearing on one side and not visible on the corresponding side of the other half of the body, must be noticed and properly interpreted. After our eyes are trained to know the appearance of the normal body, any abnormalities will at once attract the attention of the observer. Large tumors, large outbulgings, deep furrows are easily seen by everybody. But by constant training one must learn to see what I may be excused in calling microscopical lines, microscopical elevations, microscopical grooves.

In order to detect such very fine changes, we must take a certain position in relation to the body we are to observe. Our line of vision must be oblique; we must not view the body from right in front; we must stand to one or the other side of the body which we are inspecting. All lines and grooves and other markings upon the body throw a shadow, which serves to intensify such grooves, elevations, lines, and ridges. Shadows are formed when the light strikes obliquely. Therefore our position to the body of the patient must be such as to look at the patient from an oblique position, and, up to a certain distance, the further from the patient, the better formed is the shadow, the better we can see.

Direct sunlight is to be avoided; diffused daylight is the best; artificial light, if not intense, is also good. The lines and shadows, just mentioned, are seen, because they move with respiration; they are not stationary. There is always a change of level, as one organ overlaps the other at the margin, where such overlapping takes place. The left lung overlaps the heart; the liver overlaps the intestines and the stomach; the transverse colon overlaps the small intestine; some coils of intestine overlap other coils. Due to respiration, the endothoracic and the intraabdominal pressures are alternately increased and decreased. These alternate changes of pressure cause the viscera to move; therefore, the viscera move with the respiration. But also the skin, necessarily, moves with the respiration. There is, however, a distinct difference in the axis in which the skin moves on one part, and the viscera on the other part. The axis of the respiratory movement of the skin is perpendicular to the axis of the respiratory movements of the viscera. The movement of the skin is expansive, is lateral, is horizontal; the movements of the abdominal viscera are vertical. There is no space left between the viscera and the muscles and skin overlying them. The skin and muscles appose the viscera underneath and mould themselves upon the viscera, provided the skin and muscles lie relaxed upon the viscera. If the abdominal muscles are, for some reason, kept rigid, taut, there is no such adaptation to the form and shape of the underlying viscera, and all lines, unless very prominent by protruding structures, are entirely effaced from the skin; nothing of the viscera can then be seen. But, under normal conditions, the movements of the margins of the viscera are seen as they glide up and down under the skin with the respiration; the margins of the viscera, so to say, scrape the under surface of the skin in their respiratory movements; they move down with inspiration, and return in expiration.

All observers agree, and the textbooks have long

ago mentioned, that the viscera could be seen. But they have qualified their statements by saying that only in the most emaciated persons could the viscera be seen. As a matter of fact, however, in the fat person the movements are seen just as well, if not better, than in the ordinary person. There is no exception; the moving viscera of all, lean and fat, persons can and must be seen; even an abundance of hair growth does not check the vision—it only makes it a little more difficult.

The next requisite is the knowledge of anatomy to the extent of knowing that a certain line, seen moving, in the region of the stomach, most likely indicates the stomach, and not the uterus or the heart.

In order to see the outlines of the organs the beginner will do well to bring his eyes to the level of the patient's body, whether the patient be in the recumbent or in the erect posture. For the inspection of the lungs, heart, spleen, and kidneys the erect posture of the patient is the best. But to see the liver, stomach, pancreas, intestines, urinary bladder, and the enlarged uterus, the recumbent position of the patient is the best.

To see the apices of the lungs we observe the triangle formed by the clavicle in front, the trapezius muscle behind, and the posterior border of the sternocleidomastoid. We can see the margin of the apex of the lung as it strikes the skin at the end of inspiration and recedes with the expiration. The apices can be seen either when standing in front, or at the side of the patient; always preserving a certain distance and a certain angle of vision. To see the heart, we stand at the right side of the patient and in front of him. Not only can the left margins of the heart be seen, but we can also see that, in its systolic contraction, the heart rotates upon its longitudinal axis from right to left. My observations have taught me that the left boundary of the heart can be outlined with the greatest facility. To do this a straight line is drawn from the upper margin of the thyroid cartilage through the left nipple. If the nipple is in the normal position, this line will give the boundary of the absolute dullness of the heart. A line drawn parallel to this, and from half to three quarters of an inch to the left, indicates the beginning of the relative dullness of the heart; between these two lines the heart is covered by lung. The upper and lower margins of the heart can also be seen.

The lower margin of the liver, as it normally extends from about half to three quarters of an inch beyond the free border of the ribs, produces a marked change of level upon the skin. Compared with the left side there is a convexity to be seen below the margin of the ribs on the right side; this convexity is not present on the left side. The upper margin of the liver, that is, so much of it as apposes the thoracic wall, can also be seen. In the normal condition of the stomach only its greater curvature can be seen; in gastropnoia both curvatures can be seen. The kidneys and spleen can be seen in the back at the height of inspiration, when they strike the wall and recede with the expiration.

Once we have trained our eyes to get familiar with the normal appearance of the body, pathological conditions will be easily and instantly

noticed. Compared with the nutrition of the rest of the body, the apex region of the lung may appear bulging out, which is to be interpreted as an infiltration (but, of course, may also be due to a tumor), or it may appear as a concavity, which would indicate a retraction of the lung. Where the changes are only slight, we can best judge the condition of the apex by looking at the posterior upper margin of the clavicle and noting the distinctness of this line. If the uppermost border of the clavicle is seen distinctly and sharply outlined, it shows, that the structure immediately behind it is concave; there is therefore a retraction behind the clavicle, there is abnormality due to retraction of the lung. In the normal person the upper border of the clavicle is indistinct, shading off gradually. The other and already known phenomena, which are revealed by an inspection of the chest as heretofore taught, need not be dwelt upon here.

Enlargements of the liver are readily seen. The skin over the enlarged surface of the liver continues as a smooth surface, showing no breaks, no lines, down to the margin of the enlarged organ. The right hypochondrium shows a convexity; the skin over the enlarged liver shows no change of level. An atrophic condition of the liver shows the right border of the ribs well marked off against a concavity; the region immediately below the ribs looks as if it were scooped out. Enlargements of the gallbladder and common bile duct can be recognized by the tubular swelling running obliquely downward and inward.

A distention of the duodenum is seen as a tubular swelling, running parallel with the median line, extending about two inches or more to the right of the median line. Tumefactions in the region of the pylorus and adhesions can be seen by the shadow they produce. Very recently I made the diagnosis of ulcer of the stomach with the possibility of adhesions. This diagnosis was disputed by the surgeon who, after a little persuasion, finally agreed to operate, much against his wish, and tried his best to dissuade me from insisting on the operation, even when the patient was already on the operating table. He operated and found my diagnosis correct; this is only one of many like incidents. Slight tumors, slight thickenings can be diagnosed with precision by inspection, when standing at quite a little distance from the patient, so as better to bring out the shadows they give. Pulsations and tremors have their distinct significations. The most common thing is to see the pulsations in the region of the stomach; it looks rather like a vibration. Another place where tremulation is quite frequently seen is the region of the cecum and ascending colon. These pulsating, tremulating distentions mean the presence of gas.

Prolapse of the kidneys can very easily be seen. Normally there is no concavity to be seen in the back just below the last ribs. In prolapse of the kidney there is such a concavity, which can best be seen this way: The patient stands up; the examiner stands in front of the patient and brings his head down to the lumbar region of the patient, his eyes being on a level with the muscles of the back of the patient. The physician moves his eyes from in front of the patient to the patient's back, so as

just to catch the outline of the patient's longissimus dorsi. In the normal condition, the physician sees a straight line, gradually and gracefully curving over the gluteal region. Where the kidney left its mooring the physician sees a marked caving in, a concavity below the last rib. A floating kidney can also be seen with the patient in the recumbent position, as a large tumor somewhere on the right side of the median line, depending upon where the kidney happens to be at that time. An enlargement of the uterus, in the early stage of pregnancy, can be seen above the pubic bones; but the bladder must first be emptied.

My intention in this paper is to bring out the facts which have been unknown hitherto; namely, that the very finest of pathological changes can be seen throwing their shadows upon the surface of the skin. I have diagnosed with absolute precision, and against the opinions of over thirty prominent physicians and clinicians, a thickening, which on operation proved to be an adhesive band, holding together the ascending with the transverse colon at the hepatic flexure in a kinked condition. Also here the surgeon hesitated to operate and was unable to find anything in an examination of the patient under full anesthesia before the operation.

I preach the gospel of inspection. Without in the slightest degree disparaging any other methods of diagnosis, inspection is the method *par excellence*. It is only a matter of training, of constant training, of unremitting training. Try, try, try again. It took me years to develop my sight and I did not have the advantage of anyone's training or guidance, or even suggestion that all organs could be seen. The physicians who took their courses with me have been able to learn to see one or more organs during the short course of four weeks; I am sure they will be heard from as soon as they have practised enough, and have learned to see all the organs in every case. We know from trustworthy sources that animals have trained their sense of smell and hearing to a degree unknown to us. One who has seen a blind person read with his fingers, just as quickly and just as unerringly as we do with our eyes, will appreciate to what degree one can train one's senses. What now seems incredible, miraculous, will be commonplace ten years from now. After our eyes have become trained, inspection becomes the exactest method of physical examination. Touching this subject I beg leave to refer the reader to my articles in the February number of the *St. Louis Medical Review*, 1908, and in this *JOURNAL* for November 18, 1911.

616 MADISON AVENUE.

GENERAL SURGICAL INFECTION.*

A Preliminary Report of the Use of Mixed Infection Vaccine (Schafer).

BY CHARLES A. HILL, M. D.,
Pittsburgh,

Attending Surgeon, Presbyterian Hospital.

The treatment of acute, subacute, or chronic infections, such as are met with in surgical practice,

*Read at the meeting of the College of Physicians, Pittsburgh, April 25, 1912.

has become, in view of the better understanding of bacteriology, a very interesting problem. Not so many years ago, the surgeon had but to resort to the radical use of the knife and his duty to his patient was fulfilled. To-day, however, the careful surgeon makes a tentative diagnosis, based upon



FIG. 1.—Showing arthritis, before treatment with tuberculosis phylacogen was commenced.

the clinical symptoms, but in every instance, where possible, seeks confirmation from the bacteriologist.

I realize that it is not always possible to obtain specimens for confirmatory diagnosis before, or even after, instituting surgical interference. In such cases a study of the temperature curve, a carefully made differential blood count, together with the clinical symptoms, will show a condition so strongly indicative of infection, that symptomatic treatment may be instituted and developments safely awaited.

My past experience in this class of infections would seem to indicate that, except in rare instances, there is no such thing as an infection by any one microorganism, the bacteriological report showing a multiplicity of pathogenic bacteria, one strain usually predominating.

The theory of *multiple infection*, elaborated by Doctor Schafer, of Bakersfield, California, has, in my experience, been proved. I quote from a recent article by Doctor Schafer: "1. Practically all the acute and many of the chronic diseases are caused by the metabolic products of bacteria.

2. The human subject is the host of microorganisms that are pathologically latent, but capable of setting up a disease process under certain conditions.

3. The growth of infecting microorganisms can be arrested, and their effects neutralized by products derived from their development in artificial culture media."

Based upon this theory there has been elaborated a polyvalent toxine (?), known as phylacogens¹ or modified bacterial derivatives, made by planting in artificial culture media many different pathogenic

bacteria, for example, streptococci, the several staphylococci, *Bacillus pyocyaneus*, *Diplococcus pneumoniae*, etc., incubating for seventy-two hours, or longer, the removal of all bacteria by filtration through porcelain, and the addition of five tenths of one per cent. of phenol as a preservative. Where a definite bacteriological diagnosis has been made, an amount of the toxines (?) produced in this manner, from the selective bacteria, is added to an equal amount of the mixed toxines. This insures fifty per cent. plus of the selective toxine in combination.

The dose varies in the individual patient, governed by the severity of reaction and the clinical condition, two c. c. of any, with the exception of the tuberculosis phylacogen, being a safe initial dose. My procedure has been to begin with this dose, with a view of developing any idiosyncrasy the patient may have. The dose should be increased rapidly to five c. c., then to ten, fifteen c. c., or even higher, being administered daily, or, where the reactions are severe, every other day.

Marked reaction is evidenced by chilliness or a distinct chill, increase of from one to four degrees in temperature, corresponding increase in pulse rate, nausea, and sometimes vomiting; increased bowel action, with or without abdominal pain, marked muscular soreness and numbness, etc. When symptoms of reaction persist, which they seldom do for longer than twenty-four hours, I lengthen the interval between doses, but keep the amount the same.

All injections are given subcutaneously, just under the skin, and not into the fascia or muscle. The site of injection is at the discretion of the operator, my procedure being to use the arms or interscapular space. With reference to the toxicity, from fifteen to forty-five c. c. were given daily, for a period

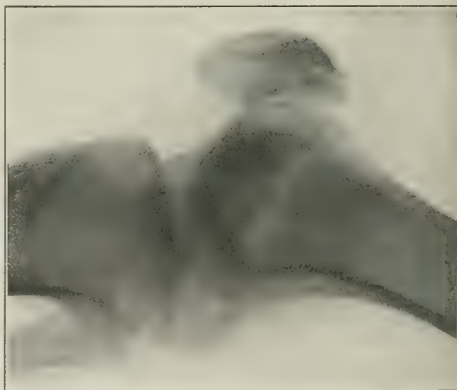


FIG. 2.—Same patient as shown in Fig. 1, after about two months of treatment with tuberculosis phylacogen.

of fifty-five days without harmful effect, as I will show later, save for the usual local reaction.

CASE I. Mrs. X., aged thirty-eight years, housewife. Family history was negative with the exception of one brother dying from pulmonary tuberculosis. History of injury to knee several months previous to present trouble. Patient presented marked emaciation and was

¹See footnote, p. 677, JOURNAL for October 5th

extremely nervous. Came under my care at the hospital, presenting an acute inflammatory condition of left knee, this being the only articulation involved. Marked redness, soreness, extremely painful to touch and on movement, marked swelling, circumference 13.5 inches. No fluctuation. No rise in temperature. No obtainable history of gonococcus infection at any time. Pain so severe that morphine hypodermically had to be administered. Blood examination normal. Patient refused to allow aspiration. Based upon clinical symptoms and appearance, treatment with the gonorrheal phylacogen was instituted November 1, 1911, as follows:

November 1, 1911, 2 c.c. gonorrheal phylacogen.

November 2, 1911, 5 c.c. gonorrheal phylacogen.

November 3, 1911, 7 c.c. gonorrheal phylacogen.

November 4, 1911, 7 c.c. gonorrheal phylacogen.

November 5, 1911, 10 c.c. gonorrheal phylacogen.

Under this treatment the patient grew progressively worse, and at no time was the reaction marked. Treatment was now changed to rheumatism phylacogen.

November 6, 1911, 5 c.c. rheumatism phylacogen.

November 7, 1911, 7 c.c. rheumatism phylacogen.

November 8, 1911, 8 c.c. rheumatism phylacogen.

As patient was steadily growing worse and becoming more emaciated and suffering from the increased pain, rheumatism phylacogen treatment was suspended, and a tuberculin test was made, which was markedly positive. A radiogram was ordered and made at this time and will now be shown on the screen. (FIG. 1.) You will note the evidence of a productive arthritis, the obliteration of contour, etc.

Treatment was now instituted with the tuberculosis phylacogen, dates and doses being as follows:

November 12, 1911, 4 minims tuberculosis phylacogen.

November 14, 1911, 5 minims tuberculosis phylacogen.

November 16, 1911, 8 minims tuberculosis phylacogen.

November 18, 1911, 12 minims tuberculosis phylacogen.

November 20, 1911, 23 minims tuberculosis phylacogen.

November 24, 1911, 3½ c.c. tuberculosis phylacogen.

November 26, 1911, 4½ c.c. tuberculosis phylacogen.

November 28, 1911, 5½ c.c. tuberculosis phylacogen.

November 30, 1911, 6½ c.c. tuberculosis phylacogen.

December 2, 1911, 7½ c.c. tuberculosis phylacogen.

December 4, 1911, 8½ c.c. tuberculosis phylacogen.

December 6, 1911, 10½ c.c. tuberculosis phylacogen.

Knee less painful. Inflammation subsiding rapidly, soreness nearly absent. A very decided improvement. Knee now 12.5 inches.

December 8, 1911, 12.25 c.c. tuberculosis phylacogen.

December 11, 1911, 12.5 c.c. tuberculosis phylacogen.

December 13, 1911, 13 c.c. tuberculosis phylacogen.

December 15, 1911, 13.5 c.c. tuberculosis phylacogen.

December 18, 1911, 13.5 c.c. tuberculosis phylacogen.

December 20, 1911, 14 c.c. tuberculosis phylacogen.

December 22, 1911, 14.5 c.c. tuberculosis phylacogen.

December 26, 1911, 15 c.c. tuberculosis phylacogen.

December 29, 1911, 15.5 c.c. tuberculosis phylacogen.

December 31, 1911, 15.5 c.c. tuberculosis phylacogen.

January 3, 1912, 15.5 c.c. tuberculosis phylacogen.

January 7, 1912, 15.5 c.c. tuberculosis phylacogen.

The patient began to improve after the sixth injection, and grew progressively better from then on. Pain, tenderness, and swelling disappeared, and morphine was discontinued. Again I wish to call your attention to a radiogram taken at this time (FIG. 2). You will readily note the difference. This woman was discharged from the hospital, January 8th, in fine condition, only the resultant ankylosis persisting.

CASE II. R. R., male, aged twenty-eight years, salesman. Diagnosis, mixed infection periostitis. Patient came under my observation at the hospital, October, 1911, with a history of injury. Upon examination, found an acute inflammatory condition of right leg from knee to ankle, but not involving the joints. Operated upon, and free drainage allowed. Bacteriological examination showed the presence of both staphylococci and streptococci. Temperature from 10° to 103° F. before operation. Discharge profuse. Periosteum over tibia gone for a space of six inches. From October 27th until November 18th, the usual line of treatment was carried out, but the discharge persisted and increased in amount.

November 10, 1911, 10 c.c. mixed infection phylacogen.

November 20, 1911, 10 c.c. mixed infection phylacogen.

November 21, 1911, 20 c.c. mixed infection phylacogen.

November 24th, discharge very much lessened; bacteriological examination showed but few staphylococci and streptococci. Wound granulating nicely. Marked improvement.

November 25, 1911, 20 c.c. mixed infection phylacogen.

November 26, 1911, 27 c.c. mixed infection phylacogen.

December 1, 1911, 27 c.c. mixed infection phylacogen.

Bacteriological examination failed to show any evidence of infection. December 5, 1911, thirty-five c.c. mixed infection phylacogen. Reactions not marked in any way. Patient discharged from hospital, December 11, 1911, with no evidence of infection, and wound healing rapidly. March 17, 1912, patient reported with wound entirely healed and in good shape.

CASE III. Mr. H., aged forty-four years, diagnosis, streptococic infection of lip. This patient became infected by having a few hairs removed, by a barber, from his lower lip. Within a short time the lip began to swell rapidly, glands in neck becoming involved. Temperature, maximum 101° F. A small incision was made in swelling and from the serumlike exudate obtained, many streptococci were demonstrated.

December 18, 1911, 10 c.c. mixed infection phylacogen.

December 10, 1911, 20 c.c. mixed infection phylacogen.

A slight chill followed the last injection. Temperature went to 103° F. maximum. December 20th, swelling subsided rapidly. December 22, 1911, 20 c.c. mixed infection phylacogen. Very little reaction. Lip normal in size. Glandular involvement nil. December 24th, discharged from the hospital without any evidence of infection.

CASE IV. Mr. M., aged forty-five years, clerk. Diagnosis, streptococic and gonococic infection of bladder. This man gave a history of gonococic infection of long standing. Became infected with streptococci through careless use of sounds. Examination showed marked tenderness over perineum, ardor urinae, frequent urination. Urine turbid and loaded with streptococci and gonococci. Had been under treatment for long time without showing improvement.

Treatment began, November 15, 1911, with a dose of two c.c. mixed infection phylacogen. Injections were given daily, alternating mixed infection and gonorrheal phylacogen, the dose being very rapidly increased until a maximum dose of forty-five c.c. was given. This treatment was continued until January 10, 1912. From the fourth injection this patient began to improve. Very carefully made bacteriological examinations, from time to time, showed a gradual diminution of the bacteria, until treatment was discontinued, January 10th, when they were entirely absent. Patient was in excellent condition at this time. No untoward symptoms. This patient reported, some months later, to a genitourinary specialist with a second very acute attack of gonorrhea.

KEENAN BUILDING.

A LANDMARK AND TECHNIQUE FOR THYROID MEASUREMENT.

(Preliminary Note.)

By MALCOLM S. WOODBURY, M. D.,

Clifton Springs, N. Y.

In a recent article,¹ I described certain postures which were designed to bring the normal thyroid gland into the most advantageous position for manual examination. The conclusions reached were based on experiments on the cadaver, corroborated by subsequent examination of patients. Further work along this line has developed other points which are deserving of mention. The anatomical relation of the superior pole of the normal thyroid lobe to the oblique ridge on the ala of the thyroid cartilage of the larynx (illustrated in Fig. 1, which is a photograph of a dissection of a normal

¹A Method of Outlining the Thyroid Gland. *Journal of the American Medical Association*, lviii, No. 22.

larynx and thyroid gland), together with the findings recorded in the article above mentioned, justify us in laying down the following rule:

To locate the upper pole of the lobe of the normal thyroid gland, first locate the most prominent eminence of the thyroid cartilage (Adam's apple), follow down the median line from 1.5 to two cm., to

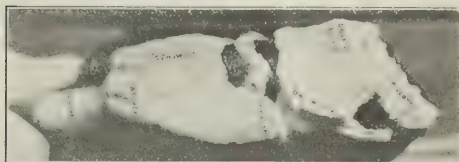


FIG. 1.—Anatomical relation of the superior lobe of the thyroid

the space between the thyroid and cricoid cartilages; follow the inferior border of the thyroid cartilage laterally, about one to 1.5 cm. till the median end of the oblique ridge is felt; follow the oblique ridge upward and backward to its posterior end. Press the finger into the groove just below the oblique ridge and parallel to it. The upper side of the finger will rest against the oblique ridge—the lower side of the finger will come into contact with the upper pole of the thyroid lobe. The landmark, then, is the oblique ridge on the wing of the thyroid cartilage.

While carrying out the above described manoeuvre, slight extension of the neck, with or without rotation, is desirable. I usually prefer to have the neck partially rotated (away from the side which is being examined), as in that position the second step in examination follows rather more readily.

With the forefinger (right or left, depending upon which side of the patient he stands) pressed firmly against the upper pole, the examiner should rotate the patient's chin (away from the side being examined) until it is as nearly over the opposite shoulder as is possible without undue extension on the sternomastoids; the neck should at the same time be extended, that is, the chin should be tilted up. The patient should be directed to let his head *absolutely rest* against the assistant's hand or whatever support is provided (Fig. 2). If the sternomastoid is still too tense, the assistant should

slightly flex the side of the patient's head on the chest, thus bringing the sternomastoid origin and insertion nearer together and so relaxing the muscle. Now, having the head in proper position, the examiner should place the tip of his free forefinger one to one and a half cm. from the median line, just above the suprasternal notch, and should make rather firm pressure. He should then attempt, by pressing downward on the upper pole of the lobe, to bring the lower pole into contact with the lower examining finger. By slight readjustment of the lower finger, this is usually quite readily accomplished. When both poles are clearly felt, the patient should be instructed to swallow; the upper pole ascends beneath the upper examining finger and the lower pole moves out of contact with the lower finger, but is felt again as the lobe descends when the act of swallowing is completed. The assistant then measures the lobe with compasses under the direction of the examiner (Fig. 2).

For measuring the width of the lobe, I try to select a line which is continuous with the lower margin of the isthmus of the gland. This measurement is usually easily made. With the neck moderately

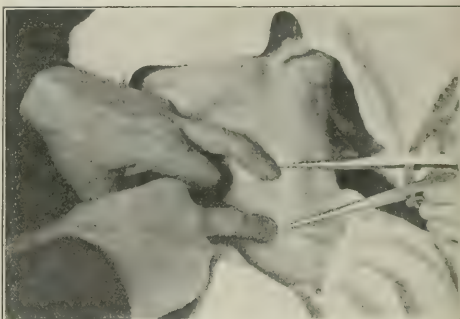


FIG. 2.—Position for measuring the left thyroid lobe

extended and rotated about 45° (away from the field of examination), the lobe is rolled under the forefinger and its width measured with the compasses. One must not confound the sternohyoid or

Case.	Age, Years.	Height, Ft. In.	Weight, Lbs.	Menstruating.	Dimension—		Width of isthmus, cm.	Sex.	Single or married.
					Right lobe, cm.	Left lobe, cm.			
1.....	26	5-7½	100	Yes	4.0X1.6X.5*	4.4X1.5X.5	1.6	F.	S.
2.....	(Same patient)			No	4.4X1.5X.5	4.4X1.4X.5	1.6	F.	S.
3.....	70	5-10½	130	....	4.0X1.5X.5	4.8X1.5X.5	Not measured	M.	M.
4.....	24	5-3	105	No	4.0X1.5X.5	4.7X1.6X.5	Not measured	F.	S.
5.....	12	5-0	135	No	4.2X1.7	4.2X1.7	Not measured	F.	S.
6.....	50	5-6	175	....	5.4X1.7X.7	5. X1.5X.5	Not measured	M.	S.
7.....	42	5-6	140	No	4.0X1.7X.5	4.6X1.6X.5	1.7	F.	M.
8.....	45	5-10	157	....	5.2X1.6X.7	4.8X1.6X.7	1.6	F.	M.
9.....	31	5-8	121	Stopped 2 years ago	4.4X1.5X.4	4. X1.5X.4	1.6	F.	M.
10.....	28	5-4	115	No	4.8X1.4X.5	4.4X1.5X.5	1.6	F.	S.
11.....	48	5-7	128	....	4.1X1.6X.7.5	5.2X1.3X.1	Not measured	M.	M.
12.....	47	5-2	163	No	3.5X1.4X.5	3.2X1.3X.4	Not measured	F.	M.
13.....	30	5-8	110	No	3.7X1.5X.5	3.7X1.5X.5	1.5	F.	S.
14.....	24	4-11	115	No	4. X1.5X.4	3.9X1.4X.4	Not measured	M.	M.
15.....	27	5-5	115	Yes	4. X1.5X.5	3.8X1.3X.5	Not measured	F.	S.
16.....	28	5-10	160	....	4.2X1.8X.6	4. X1.5X.6	Not measured	M.	M.
17.....	38	5-7	134	No	4.1X1.5X.5	3.9X1.4X.5	Not measured	F.	S.
18.....	(Same patient)			Yes	4.5X1.5X.5	4.2X1.6X.5	Not measured	F.	S.
19.....	23	5-7	123	No	4.1X1.5X.5	3.9X1.4X.5	Not measured	F.	S.
20.....	(Same patient)			Yes	5.2X1.6X.5	4.6X1.6X.5	Not measured	F.	S.
21.....	40	5-3	172	....	5.2X1.6X.6	4.7X2.4X.6	Not measured	M.	M.
22.....	25	5-0	100	No	3.8X1.6X.4	3.8X1.6X.4	Not measured	F.	M.
23.....	50	5-5	162	....	5.6X1.6X.5	4.6X1.6X.5	1.6	M.	M.
24.....	32	5-1	103	No	3.8X1.1X.4	3.4X1.1X.4	1.	F.	S.
25.....	30	5-0	150	....	4.0X2.3X.6	4.0X1.8X.6	...	M.	M.

*Thickness is estimated not measured and is approximately one half the actual thickness.

sternothyroid muscle with the lobe; these structures can with a little experience be differentiated.

Judging from the work on the cadaver the length and width measurements should agree quite accurately with the actual anatomical dimensions. I have not succeeded in measuring the thickness of the normal lobe in the living subject and can only estimate it by the feel; but I was able to determine on the only cadaver on which I tried it, that the palpable thickness of the lobe was practically one half the actual thickness. Thus, I could palpate a "bulge" as only 0.5 cm. in thickness, over the lower pole at the level of the lower border of the isthmus—whereas the actual thickness was one cm. This relation between palpable and actual thickness is probably distorted in thyroids which are considerably enlarged.²

To outline the normal isthmus, begin with one forefinger at the lower border of the thyroid cartilage, the other just above the suprasternal notch, and palpate, gradually bringing the fingers toward each other till the isthmus is encountered. In most subjects its width can be easily measured, and its thickness approximately determined.

The following table is entirely preliminary, and I have attempted to draw no conclusions from it, but hope that it may arouse sufficient interest to stimulate other careful examinations. I have only once seen and accurately measured an apparently normal sized thyroid gland in the operative field. Probably this gland was not below normal size for this individual, as the patient was thought by several thoroughly competent observers to be suffering from hyperthyroidism. In this instance the two lobes were symmetrical and measured 3.4 cm. x 1.5 cm. x 1.2 cm. The patient was a woman, unmarried, aged forty-five years, height about five feet eight inches, weight 135 pounds.

The patients thus far selected for measurement have been chosen by virtue of absence of thyroid symptoms, or visible thyroid enlargement.

THE EARLY DIAGNOSIS OF LARYNGEAL TUBERCULOSIS.

By WILLIAM LAMBERSON, M. D.,
New York.

Clinical Assisant, Manhattan Lyc. Ear. and Throat Hospital.

In presenting the subject of this communication, on the symptoms and diagnosis of laryngeal tuberculosis, it is intended to adhere as closely as possible to the most important points of diagnosis, and to submit briefly conditions which have been found by experience to have been most helpful in reaching a diagnosis of this serious tuberculous condition.

The term tuberculous condition is here employed

²Since writing this article, further experience has shown, that when the thickness of a lobe is considerably increased (i. e. to 2.5 cm. or more) it can be measured directly with accuracy. This has been demonstrated by measuring enlarged lobes before and after operative removal. For a good degree of assurance and accuracy in estimating the thickness of small, normal, and slightly enlarged lobes one must practise on the cadaver as he may there verify his findings. Between the normal lobe thickness (only about one half of which can be palpated) and a thickness sufficiently great to be measured directly, lie several stages which must be determined by judgment and experience. The thickness of the normal isthmus can be directly estimated.

rather than complication, for apparently there are undoubted cases of tuberculosis of the larynx in which no other coexisting focus can be found during life. In these cases the absence of lung involvement can be shown by means of all the methods of examination at our command, yet, autopsy might disclose some focus in the bronchial or cervical lymph glands, or deep in the tonsil, which might well be the primary seat of infection. In this connection it might be mentioned that Pizzini found that forty-two per cent. of bodies he examined at autopsy showed tuberculous glands which gave rise to no symptoms during life; and that a large percentage of autopsies in Vienna showed healed tuberculous lesions in the lungs, where no diagnosis, or even suspicion of consumption was intimated during life. It can readily be seen, therefore, that these apparently primary cases might easily be secondary to some hidden focus, but they are, however, so few and far between, that for all practical purposes they may be disregarded, and the question left for further proof.

At the tuberculosis clinics of the department of health, every patient giving reasonable cause for chest examination, has also a complete nose, throat, and ear examination made. In these examinations two facts have been impressed upon the writer: First, the frequency of tuberculous laryngitis among patients who gave positive signs in the lungs; and, second, the frequent occurrence of a subacute or chronic laryngitis which was not of a tuberculous character. Moreover, either of these conditions in the larynx, tuberculous or nontuberculous, has been found in a number of cases in which little or no reference was made to the throat, but owing to the slight degree of involvement, its insidiousness, or to the fact that lung symptoms have overshadowed those of the throat, the laryngitis has been ignored or even denied in some instances. Of the total number of 730 patients coming under observation, 244, or one third, have been found to have tuberculous trouble in the lungs. Of these 244, forty-five per cent. have had tuberculous laryngitis, and twenty-one per cent. had varying degrees of laryngitis nontuberculous in origin, making a total of sixty-six per cent. of positive chest cases with some pathological laryngeal condition.

In view of these observations it seems reasonably certain that many of these cases with a moderate degree of interarytenoid thickening diagnosed as catarrhal, are in reality tuberculous, with perhaps tubercle formation in the deeper layers, for noting the condition after a lapse of time, during which they have not been under observation or suitable treatment, a typical, tuberculous condition has been found to exist. Thus, the question of the original condition is still open for discussion, for under proper treatment either process can, with or without general improvement in the patient's condition, go on to complete recovery.

Tuberculous lesions in the larynx given in order of their frequency, are then infiltration, granulation, ulceration, tuberculoma, and miliary tubercle. The situations, given in order, are the interarytenoid space, vocal cords, arytenoid cartilages, aryepiglottic folds, the epiglottis, and last, the ventricular bands. The most frequent, earliest manifestation

then is a thickening in the interarytenoid space. This may be covered by normal epithelium, and of an angry reddish color. This thickening may be divided by a median sulcus, but is more often roughened into many papillomatous points, with a characteristic pallor at their apices. There follows usually an early extension to the cords, though the infiltrate may persist for many months with neither breaking down nor extension. A unilateral, or an unequal bilateral affection of the cords is the rule. This may take place in the whole extent of a cord, or in one segment, usually the posterior third, and is a granular hyperemia. Suspicions of an early tuberculous affection are often aroused by the loss of lustre of one cord, its rounded, thickened appearance, or its slow response in adduction. Later the cord assumes a bottle or fusiform shape, partly overlapped by the corresponding ventricular band.

So frequently is a differential diagnosis called for during this stage, that I feel it should be mentioned at this time. Trauma, giving unilateral or bilateral redness may be excluded by the history. Catarrhal laryngitis, important by reason of its frequency, will more often present symmetrical bilateral hyperemia, a uniform and symmetrical thickening in the sulcus which responds more readily to treatment than does the infiltration of tuberculosis. While on the other hand the association of a unilateral hyperemia of the cords, with thickening in the interarytenoid space, is practically diagnostic of tuberculosis, if positive signs in the lungs are present. As both the acute and chronic forms of catarrhal laryngitis are frequently found in tuberculous subjects, thorough investigation of the history, and complete examination of the nose and pharynx are necessary in reaching a diagnosis. In the chronic hypertrophic form, such etiological factors as catarrh of the upper respiratory tract, nasal obstruction, the inhalation of irritating dust or vapors, or any condition causing passive hyperemia of the larynx must each be considered. A true ulceration will exclude catarrhal laryngitis. In syphilis the history may aid in diagnosis, the presence of cicatricial tissue in the larynx or elsewhere, its rapidity of development, and its tendency to attack the anterior third of cords, rather than the posterior, as in tuberculosis. Syphilis, in its infiltrative stage, will present a slightly mottled appearance rather than the even hyperemia of tuberculosis. The smooth infiltrate of carcinoma before ulceration has begun is practically impossible to diagnose from tuberculosis without the aid of the microscope. This does not include those cases where the growth is sharply defined, with the typical inflamed base, nor where ulceration or glandular involvement has started. We might bear in mind, however, that in carcinoma there is an earlier loss of mobility, and where a ventricular band is the site of lesion, there are usually no other coexisting lesions as in the case in laryngeal tuberculosis. Lupus of the larynx is generally secondary to skin and mucous membrane lesions. There is no pain; and infiltration, ulceration, and repair are to be seen going on at the same time, side by side. Furthermore, lupus is nodular in character. Pachydermia laryngitis presents at one vocal process an excrescence, with a corresponding depression on the other cord, associated

with a moderate amount of hyperemia of the posterior third of the cords.

The importance, therefore, of a careful laryngeal examination at the beginning of, and during treatment of a lung condition is apparent, for it is in just these early cases that most can be done to arrest or cure the existing lesion.

The swelling over the arytenoids and that of the aryepiglottic folds usually occur simultaneously. The tumefaction is greatest over the arytenoids, gradually diminishing into the aryepiglottic folds, assuming a pear shape. The color may at first be an angry red, soon, however, assuming a characteristic dull gray which may appear to be only in the mucosa or extend deep into the swelling. This, if bilateral, is pathognomonic of tuberculosis. There is usually an accompanying edema, causing dysphagia of greater or less degree.

The importance of epiglottic involvement cannot be impressed too strongly. Though implicated in a minority of cases, the grave prognosis it signifies, the pain which accompanies it, and the rapidity and extent to which destruction may take place all demand our closest attention and skill. The epiglottis may at first only show slight loss of mobility, and change in appearance from the usual pink to a soft, velvety congestion. Later the color may be deep red. The swelling is uniform, obliterating the glossoepiglottic folds, presenting a turban shaped appearance. This swelling, accompanied frequently by a sagging backward of the epiglottis, will cause a certain amount of shortness of breath, as well as obliterate the view of a portion of the cords. As the process becomes chronic the epiglottis assumes the grayish, soggy character typical of chronic tuberculous infection. Ulcerations appear early or late, and manifest themselves upon the tip or laryngeal surface, in contrast to syphilitic ulcers, which more frequently attack the lingual surface and free margin. The epiglottis is frequently the site of considerable edema, which adds to our difficulty in determining the amount of destruction taking place.

The ventricular bands are affected in many cases of laryngeal tuberculosis, either by a definite tuberculous process which may appear early, or are swollen because of irritation from coughing.

The ulceration, starting in the subepithelial layer, is primarily due to the breaking down of the milary tubercle and the extension of this disintegration of caseated material toward the surface. The typical ulcer of tuberculosis is shallow, the edges are irregular or saw toothed, which appearance is often accentuated by granulations surrounding the edges, and the floor is covered by minute granulations which may be hidden by a tenacious gray or yellowish secretion. It must be borne in mind that ulceration may be much more extensive than surface appearances indicate; especially is this true in the arytenoid and epiglottic tissues. In this latter situation this process soon follows the infiltrative stage, and destruction may be rapid and extensive. Ulceration of one or both cords usually accompanies extensive interarytenoid infiltration, assuming the frequent saw tooth appearance in its entire extent, or limited to the posterior segment. In the involvement of both cords it frequently happens that the ulcerations are symmetrically situated.

and when this occurs at the posterior third the condition must not be confounded with pachydermia, to which I have referred. An ulceration of syphilis of the larynx is more clearly cut than that of tuberculosis, more regular in outline rather than nibbled, giving it a punched out appearance. The syphilitic ulcer is deeper, the granulations on the floor are lacking, a zone of hyperemia surrounds it, pain is not as a rule present, and the process is more rapid. Rarely, miliary tubercles are seen about the edges of an ulcer, and when present are absolute evidence of its tuberculous character.

Carcinoma presents a deep jagged ulceration surrounded by a livid purplish areola, immobility is more marked and occurs earlier than in tuberculosis, and glandular involvement is more frequent. Pain is of a more continuous character, radiating to the ear, and cachexia is more rapid.

Thus far, I have endeavored to group the various lesions of laryngeal tuberculosis with regard to their position and the pathological changes, giving such conditions noted in the mirror which might aid in diagnosing tuberculosis from other diseases, and have drawn upon subjective symptoms only when it seemed necessary to do so. It is not the typical tuberculous larynx which gives difficulty in diagnosis so much as the atypical, the early lesion, and one of mixed infection. These give the most trouble, are very frequent, and compel us to draw upon the subjective symptoms as an additional aid.

Of these symptoms, the systemic disturbances which are associated with all tuberculous infections in the body will be omitted, for though they apply as well to laryngeal involvement, only those which are more directly concerned in the function of the larynx will be considered.

Voice. Variations of voice are perceived, ranging from simple weakness, or change in timbre, to complete aphonia, being dependent upon the situation of the lesion and the extent of the involvement. The change may be described as a weakness or huskiness of voice rather than a hoarseness, not having the full raucous quality produced by a syphilitic larynx. A frequent change in the voice in tuberculous subjects is weakness, produced, not by any pathological change in the larynx itself, but resulting from a local weakening due to the general anemia and malnutrition. As a rule the huskiness is aggravated in the morning upon rising and on confinement in a warm room. Frequently dysphonia on attempts at loud phonation is met with. Incomplete adduction of one or both cords may be due directly to a lesion in the musculature, or to a paresis by pressure upon, or involvement of the recurrent laryngeal nerve by pleuritic thickening, an exudate, or by bronchial glands. The right recurrent is more frequently involved in tuberculosis, owing to its proximity to the pleura. A paresis of the muscles of adduction, or tension, may be one of the earliest symptoms of tuberculosis of the larynx.

Cough is a symptom which is present in practically every case of laryngeal tuberculosis, and, though of little practical value for diagnosis, is a source of considerable discomfort to the patient. Either an infiltration of the interarytenoid space, or a thickening of the posterior wall may be the only pathological change in the larynx, yet the patient

may be subjected to a cough, the persistence and severity of which are out of proportion to lung involvement. This fact seems to bear out the theory advanced years ago by Stoerk, who mentioned these situations, as well as the under surface of the vocal cords and the bifurcation of the trachea, as points at which thickening of any character or lodgment of sputum, etc., would cause a cough. Upon rising in the morning, and during the night, cough is apt to be worse.

Pain is not a constant manifestation of tuberculosis of the larynx, and too much importance should not be attached to its presence or absence, especially in the incipient cases in which it is rarely found. It may be present, however, in cases of simple inflammatory swelling, especially of the posterior wall, and later it nearly always accompanies ulceration, superficial or deep, in which there is involvement of perichondrium or cartilage. Some pain, or difficulty on swallowing is caused by a certain amount of protective rigidity of muscles found in these cases. The pain is not continuous, as a rule, being experienced only on swallowing, especially of small quantities of food, fluids, and saliva. Some patients complain of continuous pain in the throat, others of the pain radiating to the ears. though I have found this more frequently the case in carcinoma. Pain is, as a rule, not found in syphilis, lupus, or pachydermia.

Dysphagia is due to the pain present, or to the fear of pain, and usually denotes the involvement of the deeper structures and a moderately severe process. Any patient in whom the epiglottis is affected, is especially liable to experience difficult or painful swallowing.

Other symptoms of which these patients complain are dyspnea, the feeling of a foreign body in the throat, dryness, rawness, tickling, and burning. The dyspnea is not, as a rule, alarming in character unless caused by an acute condition, such as abscess formation, or sudden edema occurring during a chronic or well advanced process. It may, however, be more gradual in onset, due to swelling of the epiglottis or aryepiglottic folds, a large tumor formation, or an abductor paralysis.

It may be readily seen what a wide variety of symptoms, objective and subjective, may be met with in laryngeal tuberculosis, and it is only by giving consideration to many of these symptoms that a positive diagnosis may be made. There is no one absolutely diagnostic feature of tuberculosis of the larynx, unless it is the miliary tubercle, and many atypical or early cases must be studied during several visits before a diagnosis can be made.

CONCLUSIONS.

Every tuberculous patient should have a laryngeal examination made when first seen, and frequently during treatment.

Tuberculous involvement of the larynx is not proportionate to the extent of the disease in the lungs.

Many cases of serious tuberculous laryngitis may be aborted by recognizing the importance of, and treating a slight or intermittent huskiness of voice at the proper time.

Do not wait for the typical, pear shaped swelling

or anemia before making a diagnosis of laryngeal tuberculosis.

The majority of cases start with hyperemia rather than anemia.

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269 WEST 136TH STREET.

REFRACTION WITH AND WITHOUT CYCLOPLEGIA.

By N. J. WEILL, M. D.,
Pittsburgh.

Is it fair to say that suitable lenses cannot be prescribed without absolutely relaxing accommodation by using a cycloplegic? It cannot be gainsaid that, with the aid of a cycloplegic, such as atropine sulphate solution, one per cent., instilled on three successive days into a healthy eye (conjunctival cul-de-sac), the shadow test or skiascopy in experienced hands, a mathematically correct measurement of the refractive state of an eye (with the cornea free from scarring) at rest from accommodation, is possible. It is admitted that this mathematical accuracy is frequently impossible at the hands of an examiner who can completely relax his accommodation while using the ophthalmoscope in the direct method (upright picture) of examination and employs the ophthalmometer to measure the corneal astigmatism.

Those who know will agree with me that the Javal-Schiotz ophthalmometer does quite accurately record the curvature of the principal meridians of the cornea. Furthermore, with it, irregular astigmatism of the cornea is more absolutely reckonable than with the skiascopy in the most proficient hands; and thus, too, irregular astigmatism (corneal) is never overlooked and keratoconus is detected early. I have yet to measure the curvature of a cornea with my ophthalmometer and find the principal meridians equal; therefore, I contend every one has corneal astigmatism, though it be only one twelfth of a diopter.

My readers will also, I hope, coincide in my view that it is possible for the examiner, by practice, at will absolutely to relax his accommodation, if he has any. It is a fact that patients do generally obtain the sought for relief, e. g., from headache, etc., after prescription from a proficient examiner, who has applied the ophthalmoscope properly in the direct method and employed the measurements recorded by the ophthalmometer in his control test with the trial lenses in the subjective examination.

The success of the correction for eye strain lies fundamentally in remedying the effort of accommodation required to overcome the corneal astigmatism. Therefore, in an eye with a clear lens, as a rule, neutralize *entirely* the corneal astigmatism when ordering a refractive correction. That the axis of the corneal astigmatism may not be accurately measured with the ophthalmometer is conceded, though generally it is accomplished quite satisfactorily for practical purposes. Fortunately, the subjective test with trial lenses aids in the control of this latter.

External eye muscle imbalance, excluding esotropia, exotropia, and hypertropia, is usually quite sufficiently overcome by wearing constantly suitable lenses which correct the error of refraction, thus obviating the necessity of prisms. Even the tropias (or strabismus) are favorably influenced when properly fitted, before the offending eye, or eyes, have become quite inferior.

In the correction of hypermetropic eyes, in addition to the astigmatic lens, found by means of the ophthalmometer, prescribe the strongest convex (spherical) lens accepted with both eyes, giving the maximal visual acuity with a well illuminated test card at twenty feet in an otherwise dark room. Ofttimes, to be able to select with accuracy this maximum acceptable convex lens, it is essential to know quite accurately the hypermetropia in the principal meridians, and to this end (without cycloplegia) certain positiveness of measurement in the direct ophthalmoscopic method is essential on the part of the examiner.

In myopia, the foregoing obtains except that the weakest, spherical, concave lens is selected, in addition to the full correction of myopic corneal astigmatism, as found by the astigmatometer.

In the correction of mixed astigmatism (myopia in one and hypermetropia in the other principal meridian), the same principle is applicable.

In very young children, who will not do exactly as they are directed by the examiner during the direct ophthalmoscopic method of examination, and where the application of the ophthalmometer is precluded, the shadow test is necessary. Occasionally, too, in adults, we are compelled to resort to this latter method; however, only very exceptionally.

A physician can more readily acquire proficiency with skiascopy under cycloplegia, than he can train his accommodation (if he has any) to relax completely for the measurement of refraction, in the direct ophthalmoscopic method of examination.

CONCLUSION.

To recapitulate, in competent hands under absolute cycloplegia skiascopy is mathematically more exact for refractive measurements than is the ophthalmoscope in equally competent hands, assisted with the ophthalmometer to estimate the corneal astigmatism and the trial lenses for the check subjective test. For practical, satisfactory results, for the patient, the latter method, without cycloplegia, is generally applicable, equally trustworthy, and, is preferable for the reason that the patient is not incapacitated, inconvenienced, nor alarmed.

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THE SURGICAL TREATMENT OF PEST BUBO.

How to Reduce the High Death Rate.

By CHARLES G. ROEHR, M. D.,
Fort Pierce, Fla.

The advice, now universally given, in the treatment of pest bubo, is free opening and drainage. This accounts for the high death rate, also for the spreading of infection in the patients treated, and to any one brought in contact therewith.

We recognize that this disease, bubonic plague, is primarily limited by the lymphatics and glands, although extremely liable to spread through fresh tissue. Science teaches us to appreciate that to make a fresh wound, and allow this to be flushed, or freely exposed to active and virulent bacteria, is unsafe.

The thinker, to-day, if he happens to be a surgeon, knows that the great danger in operative measures in cases of tuberculous adenitis, is absorption, and miliary tuberculosis as a result of the exposure of freshly cut tissues. On account of this danger, and to avoid such results in the treatment of tuberculous glands, I have used (first case in 1900), by hypodermic injection, a one per cent., and occasionally, in small quantities, as high as a two per cent. net solution of formaldehyde. I can prove by positive results in cases so treated, that when properly done, it is absolutely safe in itself, and positive in its destruction of pathogenic bacteria, even when used in such small quantities as, by diffusion, to be diluted in tissue to the strength of one twenty-fifth of one per cent. When this solution is retained by the cyst wall of a gland, it will positively kill bacteria, even when diluted to one one hundredth of one per cent., because such cyst walls retaining these contents, they act exactly as in a test tube, if retained twenty-four hours or longer.

I have proved by positive tests, made in the Columbus Medical Laboratory of Chicago, that one tenth of one per cent. for one tenth of a minute exposure, with thorough mixture, will kill all bacteria not having spores; further, that one tenth of one per cent., with one minute exposure, with thorough mixture, will positively kill all spore bearing bacteria.

A scientific method which I have used and advised, is to draw out the secretions of a gland with a syringe for examination, and if proved to be of a virulent pest variety or tuberculous (in fact, any bacterial infection), inject a two per cent. formaldehyde solution, sufficient in quantity to make the gland contents at least one one hundredth of one per cent. formaldehyde. This causes extreme pain for from two to five minutes, followed by local anesthesia.

Please note carefully that the operator making such exploratory operation, must allow the needle, for safety, to remain in the gland when once introduced, until he has injected the formaldehyde solution, obtaining his secretions for microscopical examination by separating the syringe from the needle, never allowing the needle to be withdrawn enough to allow even one bacterium clinging to the needle to be drawn out and cause a fresh infection to the patient.

I would emphasize this word of caution. During such injection of the formaldehyde solution, and for one full minute afterward, circumferential pressure must be maintained sufficient to prevent this solution from passing into a vein and so into the circulation. After using a two per cent. formaldehyde solution, the toxine in the gland may cause necrotic softening. If so, it is now sterile and may be aspirated or safely opened with a knife. I prefer aspiration in such cases, as it leaves no scar and recovery is more rapid. If let alone, it

would be absorbed slowly, being sterile, but still the pest toxine may be in excess of what the system can tolerate.

Therapeutic Notes.

Treatment of Pneumonia in Adults.—Lemoine, in *Quinaine thérapeutique* for May 25, 1912, recommends the administration of hot baths (40° or even 42° C.) in this disease. The whole body, except the head, is immersed in water of the temperature mentioned for about ten minutes, twice daily. A towel previously dipped in cold water is placed over the head during the bath and renewed whenever it becomes warm. After the bath the patient is quickly dried off, wrapped in a blanket, and carried back to bed. From one half to one hour later, a flannel shirt is donned, which is worn until the next bath is to be given.

The immediate effect of the baths is to produce an unpleasant sensation of heat, with marked acceleration of breathing and increased pulse force. Upon removal from the water, the sensation of heat persists for an hour at least, and is accompanied by free sweating. While the procedure is thus a disagreeable one for the patient, the results obtained are excellent, at whatever stage of the disease the measure is employed. The general condition rapidly improves, especially in adynamic cases, sleep is favored in delirious patients, the output of urine increases, and the tongue remains moist. Especially striking is the effect upon the temperature, which, after three, four, or five baths, shows a sudden drop, coincident with improvement in the condition of the lungs. Dyspnea is much diminished, expectoration is free, and on auscultation bronchial breathing is observed rapidly to decrease and disappear. Crepitant râles reappear more promptly than in pneumonia treated by other methods. The drop in the temperature always takes place by the end of the third day at latest. No formation of new foci nor relapse has been observed by Lemoine in cases of bronchopneumonia in adults or influenza pneumonia treated by the hot bath method. The maximal number of baths administered in a single case was six.

In children the method is unavailable because of the hardships it imposes on the patient, which would excite opposition on the part of the parents, and the fact that convulsive phenomena might be induced.

Treatment of Metacarpal and Phalangeal Fractures.—James Jefferson, in the *Pennsylvania Medical Journal* for May, 1912, states his belief that the best method of treating metacarpal fractures is by a long, palmar splint with adhesive strips at the wrist for counterextension and two strips applied to the finger after the manner of Buck's extension apparatus; pads are placed above and below the line of fracture to prevent displacement.

In fracture of a finger, an important point in the treatment is to maintain the alignment of the phalanx, and especially to guard against rotation of the distal fragment upon its long axis. In a com-

pond fracture, the greatest care must be exercised in procuring absolute surgical cleanliness, since infection spells ruin, necrosis, and suppuration involving functional impairment. Any method of fixation giving complete rest to the part will suffice. A thin, wooden splint, narrower than the finger, is generally recommended, but the author prefers a plaster mould, which can be cut to fit any shape, size, or condition.

Treatment of Mammary Fissures.—Arquellada, at a meeting of the Spanish Medicochirurgical Academy (*Revue de chirurgie*, May, 1912) advocated the application of tincture of iodine to fissures of the breast. Since iodine causes considerable pain when directly used on mammary ulcerations, the affected region is first painted with a one per cent. solution of novocaine. The child should not be given the breast for from four to six hours after the application, and nursing from the affected organ should be preceded by washing with tepid water of the whole area to which iodine has been applied. The breast, as well as the infant's mouth, should also be washed with a solution of hydrogen peroxide before and after each nursing throughout the period of treatment.

The iodine is used on alternate days, and a cure is generally obtained after two or three applications. In a series of twenty-eight cases treated by this method, cure was obtained in every instance in less than ten days, without complications.

Treatment of Chronic Metritis.—Schmitt, at a meeting of the Société de Thérapeutique, Paris (*Revue de thérapeutique médico-chirurgicale*, May 1, 1912), recommended a form of treatment consisting of vibratory massage for five or six minutes, followed by electroionization for ten minutes and appropriate dressing of the cervix and vagina. In executing the vibratory massage, the uterus is first immobilized by the introduction of two fingers into the vagina, and the vibrating ball is then drawn over the abdomen, starting from the anterior superior iliac spine and proceeding toward the pubes in order to force inward to the uterine cavity mucus or pus that may be present in the tubes. The uterus is then massaged from above downward with the exertion of a progressively increasing degree of pressure and special attention to the angle of curvature of the organ when the latter is flexed. The curve of the uterus is reduced and the organ gradually becomes movable; where previously congested, it is diminished in size and may, without difficulty or marked pain, be replaced in its normal position, if not at the first sitting, at least after three or four.

By this procedure the introduction of the electrolytic sound into the uterus, otherwise difficult, painful, and even dangerous, is rendered possible or facilitated. The sound consists of a rod of zinc forming the negative pole; a sheet of tin covered with absorbent cotton is placed over the abdomen. When the current passes, the sodium chloride present in the uterine mucosa—as in all other tissues—is attracted by the negative pole and tends to pass through the inner layer of the organ. The chlorine ion of the chloride is drawn toward the zinc and unites with it to form zinc chloride.

Of about 120 patients thus treated by the author in the last seven years, thirty per cent. were cured in

nine or ten sittings and fifty per cent. in fifteen to eighteen sittings; ten per cent. showed slight improvement, while the remaining ten per cent. were unimproved or were not treated long enough to show results.

Cane Sugar in Myocardial Degeneration.—Sir Robert Simon, in *Birmingham Medical Review* for May, 1912, reports the case of a woman aged sixty-six years, suffering from pronounced circulatory weakness due to myocardial degeneration, in which "extraordinary" benefit was derived from the ingestion of large amounts of cane sugar. The patient had been treated with strophanthus, caffeine, saline purges, and later, digitalis, and potassium iodide, without much success, the dyspnea, cyanosis, and edema increasing until it appeared that she could not have many days to live. One ounce of lump sugar was then given morning and evening (later increased to four ounces per diem), with the result that the pulse became regular, its rate dropped from 110-125 to 88-96 and later to 72-84 a minute; the edema disappeared, the patient became alert and active, and finally left the hospital entirely free of discomfort. Simon concludes that, given a suitable type of case, sugar is at least a valuable adjunct in the treatment of obstinate cases of heart failure due to deficient heart muscle without valvular lesion.

Treatment of Osteomalacia.—C. Koch, in *Medizinische Klinik* for June 23, 1912, refers to three cases of osteomalacia, running a very slow course, which were favorably influenced by daily subcutaneous injections of one to two c. c. of pituitary extract. At first the extract seemed to cause a slight constitutional reaction, which may be characteristic of osteomalacia, since it has not as yet been noted under other circumstances. Continued use of the preparation, however, was not accompanied by any unpleasant side effects.

Treatment of Pemphigus of the Conjunctiva.—H. B. Chandler, in the *American Journal of Dermatology* for April, 1912, states that, contrary to the usual descriptions of this disease, bullæ are seldom seen, but instead, slightly elevated patches, apparently of granulating tissue, covered with small, gray spots. The initial stage is characterized by the general symptoms of catarrhal conjunctivitis, with marked lachrymation and photophobia, and swelling of the fornices. After weeks or months occurs the stage of adhesion (symblepharon), which may persist for years, and is complicated by entropion and trichiasis. The third and final stage of the disease is shown by a complete xerosis of the conjunctiva, occasionally with corneal ulceration. It is important that the disease is not mistaken for trachoma, as the application of any irritant aggravates it. Though the affection is incurable, its advance may be checked and more or less useful vision retained. All lashes should be removed daily. An ointment of equal parts of hydrated wool fat and simple salve to which a little boric acid or aristol has been added, should be used twenty or thirty times a day; the patient's assiduous cooperation is necessary. Arsenic in small doses should be continued indefinitely. Salvarsan proved beneficial in one case.

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THE NOBEL PRIZE.

Beside being a source of gratification, two notable facts endow the granting of the Nobel prize to Dr. Alexis Carrel with special interest: It is the first time that the prize has been given for researches in medicine in this country; it marks a change in the attitude of those who are intrusted with the selection of the yearly beneficiary. None would regret the selections previously made; yet it is true that in several instances the Nobel prize has been granted for work done many years earlier, i. e., long after the honored investigators had finished their work and taken up other lines of research. This fact has evoked criticism in various parts of the world, the specified purpose of the prize being to reward him who had done most for the good of humanity during the preceding year and to aid him—with the munificent sum of forty thousand dollars—to pursue his good work. In selecting Doctor Carrel for the honor this year the Nobel Prize Commission has not only complied strictly with the wishes of the generous benefactor who created it, but has shown admirable discernment; no man is doing work more promising for the good of mankind; none is worthy of greater encouragement.

The perpetuation of life in tissues separated from the body and its circulation—facts which betoken the existence of the vital potential in the elements themselves, or perhaps in a certain aggregate of

them—opens a field almost bewildering in its possibilities. Carrel's investigations on the transplantation of organs are none the less promising, especially if additional research can make it possible to overcome the apparent incompatibility between heterogeneous tissues. Thus a kidney from one animal grafted into another animal of the same kind will carry on its functions only for a time, while the same function will continue if it is the animal's own kidney that has been grafted. This relegates to the future, at least, the one feature which would render the procedure invaluable in practice, viz., the replacement of a diseased organ by a normal one derived from an individual whose death has been due to some accidental or noninfectious cause. That this desideratum will ultimately be reached, however, is suggested by Carrel's admirable results in the transplantation of vessel segments, even arteries into veins or vice versa, which before use had lain many days on ice, having been grafted successfully. This shows conclusively that detachment from the body had not destroyed their power to live or to resume their normal functions notwithstanding their complex organization.

Doctor Carrel is entitled to sincere congratulations for the new honor conferred upon him. The Rockefeller Institute, which affords him facilities perhaps unequaled anywhere, should not be forgotten in this connection; it is the American side of the splendid result attained—the precursor of many others.

THE FALLACY OF FUMIGATION.

The recent International Congress on Hygiene and Demography at Washington arrived at the conclusion that disease is almost invariably conveyed by contagion and not by infection, that is to say, by contact, either direct or indirect, with a patient suffering from the disease in question. The method of direct infection is obvious; indirect infection is caused mainly by the inhalation of dust acting as a vehicle for the pathogenic organisms diffused by an infected person.

This conclusion, in conjunction with the appointment of a joint committee of this congress and of the International Congress of Applied Chemistry with the object of defining a simple method of testing disinfectants, may have a far reaching effect upon the health of the nation. At first sight the appointment of this joint committee may appear to be of little more than academic interest. Such, however, is not the case. At the present time, in this country, there is no accepted method of controlling the sale and manufacture of disinfectants, and the result is the use of many prepa-

rations which are disinfectants in name only. When once a workable test has been decided upon, this abuse will come to a speedy end, and users of disinfectants will be able to assure themselves in advance that the preparations which they employ are capable of performing the work required of them.

An illustration of the unsatisfactory condition of disinfection in this country may be found in the practice of fumigation by means of formaldehyde. Contrary to the generally accepted notion as to the use of formaldehyde for fumigating rooms, this disinfectant *does not act in the form of a vapor or gas*; in practice, it is dissolved in the minute droplets which result from the condensation of steam, in the absence of which formaldehyde has no bactericidal action whatever. Water will take up in solution forty per cent. of formaldehyde gas, in which form it is known officially in the *United States Pharmacopæia* as "formaldehyde solution," the Rideal-Walker coefficient of which is 0.3, i. e., it has about one third the efficiency of pure carbolic acid. If we take one part of carbolic acid in twenty parts of water as our standard of efficiency, to prepare a solution of formaldehyde capable of doing the same work, one part must be mixed with six parts of water.

We now see the difficulty of obtaining uniformly trustworthy results when working with formaldehyde. If too much steam is admitted into the chamber the ultimate dilution produced may be too weak, and if too little steam is admitted, part of the formaldehyde will be unavailable, i. e., it will remain in the gaseous form, which, as already explained, has no bactericidal action. Compare with this the ease and accuracy with which a standardized disinfectant can be prepared and applied in the form of a fine spray.

The *British Medical Journal* for November 3, 1894, referring to the disinfection of rooms by fumigation, stated: "On the ground even of economy there is no comparison between this obsolete process and a disinfectant spray; and while cases of renewed house infection are familiar to almost every medical officer in this country, we have Dr. Dujardin-Beaumetz's authority for saying that where the disinfectant spray has been introduced they are practically unknown in France."

alcoholism, it is prolonged much beyond the normal limit. In psychoepileptics one meets with vomiting, cardiac arrhythmia, hypotension, contractions, and even cessation of the respiration; but the action of the narcosis is temporary and merely requires postoperative care, particularly that pertaining to the cardiac functions. In the majority of cases, especially in the so called functional psychoses, narcosis is well borne, but a certain amount of prudence must be exercised when there is a marked predisposition to delirium, in which case local anesthesia is to be preferred.

Postoperative psychoses are far less frequently observed since asepsis has taken the place of antiseptics, a fact which would seem to prove that often they were the result of intoxication from the substances employed. It is also quite evident that many so called instances of postoperative psychoses were simply instances of autointoxication from suppuration or from the removal of some essential organ, for example the thyroid gland.

Leaving aside emergency operations, let us consider surgical interference in cases of exocranial lesions having an indirect action on the mental condition, and that for the relief of a cranial lesion having a direct relationship to the psychic disturbances. Operations on the exocranial organs undertaken with the intent to improve the mental condition are based on somewhat theoretical general views, or at least on purely empirical considerations. Removal of the ovaries has been greatly abused in cases of hysteria, and at present has, with great propriety, been given up. Hysteria can perfectly well occur with absolute integrity of the sexual organs and, on the other hand, it may come on after removal of the uterus and annexa. The same cannot be said of feminine psychoses, although we cannot consider operations on the sexual organs as a direct means of treatment, neither can we deny the marked action of genital lesions on the nervous system, so that certain special operative indications may arise from this fact.

It is quite certain that the genital influence is less marked in the male, but there are cases where operative interference may be of very considerable utility, such as urethral stricture or vesical calculus.

THE INFLUENCE OF SURGICAL OPERATIONS AND NARCOSIS ON THE MENTAL CONDITION OF THE INSANE.

Insane patients differ in their susceptibility to the action of ether and chloroform. In melancholics the initial period of excitement is relatively short, while in cases of mania, likewise in chronic

MEDICAL MEN AS GEOLOGISTS.

It is a curious fact that many of the most important medical discoveries were made in the first instance by nonmedical investigators, and that medical men, on the other hand, have often been leaders in arts and sciences remote from their own. If there is any department of pure science in which

we should expect physicians to take a minimum of interest, it is that of geology. Yet it is precisely in this field that we find them doing some of the most brilliant and effective work. The *Airs, Waters, and Places* of Hippocrates is indeed the first scientific study of the terrain or lay of the land, so important in the selection of sites for cities, dwellings, camps, and hospitals. Theophrastus founded petrography (*De lapidibus*). Avicenna was, however, the pioneer geologist, and his wonderful description of the formation of mountains has been justly praised by Draper¹ and others as worthy to be in any modern textbook. Fracastorius was, with Leonardo da Vinci, the first to see fossils² as animal remains instead of products of special creation or of astral influence. Descartes first stated the nebular or "molten magma" theory of the earth's formation. Stenson (of Steno's duct) discovered that the glossoptæra found in north Italian rocks were fossil teeth of the shark or dogfish tribe and his *De solido intra solidum* (1669) lays down the fundamental laws of stratigraphy. In 1881, a bust over his tomb was unveiled³ by the geologists of all nations. John Hunter's paper, *On Extraneous Fossils*, set forth the important view that they are coeval with the strata in which they are found. The Huttonian theory of the formation of the earth's crust was stated by a physician, James Hutton, in 1795. Wollaston, famous for his early analyses of urinary calculi, is also remembered by wollastonite and the Wollaston medal awarded by the Geological Society of London. Cuvier and Lamarck, the founders of vertebrate and invertebrate paleontology respectively, as well as Agassiz, were physicians. Sir Richard Owen wrote thousands of pages on the extinct reptiles, mammals, and birds of Great Britain and Australia. Karl Vogt was a geologist, Johannes Müller a paleontologist, and von Baer devoted the latter half of his life to working up the physiography of the Russian Empire. Samuel G. Morton's book on fossil remains (1834) was the starting point of all American studies, and Leidy was one of our ablest paleontologists. Three eminent English clinicians, Bright,⁴ Murchison, and Parkinson,⁵ were also enthusiastic geologists, the last one of the leading authorities on fossil remains, and Huxley's brilliant researches on fossil fishes and crocodiles, on the ancestry of the horse, and on geological time are by no means the least of his titles to scientific fame.

¹See Draper, *Intellectual Development of Europe*, 1, pp. 40-43.

²Taken from rocks employed in building the citadel of San Felice, Verona, in 1517.

³In the Basilica of San Lorenzo at Florence.

⁴Bright investigated the geological strata around Bristol in 1811 and in Hungary in 1818.

⁵For an account of Parkinson's work, see *Johns Hopkins Hospital Bulletin*, xxiii, 39, 1912.

THE ATTACK ON COLONEL ROOSEVELT.

While expressing our profound regret as citizens at the shocking attack upon former President Roosevelt, and our lively satisfaction that apparently no permanent harm has been done, as members of the medical profession we can say little that is not obvious. Never has there been a more striking demonstration of the superb resisting power developed by clean, temperate living, and systematic attention to physical culture, which have built up the former President from a delicate youth to a man whose physical characteristics excited the admiration of the attending surgeons, men not lacking in experience in the examination of athletes. Surrounded by the best professional advisers and every modern scientific aid at hand, there seems to be little for the distinguished patient to fear.

MALARIA IN THE TROPICS.

The first expedition from the Tulane University School of Tropical Medicine to the tropics for the study of malaria was made possible through the kindness of an unknown friend, who, through Dr. Isadore Dyer, dean of the medical department, contributed a fund to finance the project. The steamship company, which had already contributed \$25,000 toward the expenses, placed their equipment at the service of the school for the transportation, gratis, of the expedition and apparatus. Colonel W. C. Gorgas, chief sanitary officer of the Canal Zone, with various members of his staff, placed all the material in his hospitals at the disposal of the expedition and extended every possible courtesy.

The personnel of the expedition consisted of two members of the school, Dr. Charles Cassidy Bass, assistant professor of tropical medicine and hygiene, and Dr. Foster Mathew Johns, assistant in the laboratories. The object of the investigation was the cultivation of the malarial parasites *in vitro*, in which the party obtained complete success. It was found that malarial plasmodia can be grown in human serum, in Locke's fluid (from which calcium chloride is omitted), and in human ascitic fluid. In the majority of the cases dextrose must be added to the medium to secure satisfactory growth. The most favorable temperature for the cultivation of plasmodia is about 40° C.

Positive cultures were obtained in twenty-nine cases of estivoautumnal malaria, six cases of tertian, and one case of quartan. Cultures were carried on for four generations from the parent culture before the expedition left Central America, and can probably be maintained indefinitely.

The school has also carried out experimental work on pellagra, leprosy, beriberi, blackwater fever, filariasis, and other tropical diseases, which work is under the direction of Dr. Creighton Wellman, formerly of West Africa and the London School of Tropical Medicine, and is an integral part of the medical department of Tulane University of Louisiana.

TRACHOMA AMONG THE INDIANS.

According to the *Public Health Report* for September 13, 1912, trachoma has been found by officers of the Public Health Service to be prevalent on Indian reservations in Minnesota. The Department of the Interior reports that this condition is by no means confined to the Indians of Minnesota, but that it extends to practically all the tribes of which it has cognizance.

As trachoma is chronic in nature, mutilating in its course and results, and frequently produces partial or even total blindness, it seems that all efforts effectually to stamp it out are both timely and necessary. With this end in view the Department of the Interior is causing an investigation to be made of the sanitary conditions prevalent in all the Indian schools and reservations in the United States. While special attention will be paid to the prevalence of trachoma, the same investigation will also aim to estimate the extent of smallpox and tuberculosis among the Indians. Ten medical officers of the Public Health Service have been loaned to the Department of the Interior to conduct this investigation. These men have been specially selected, not only on account of their knowledge of the diseases in question, but also because of their special aptitude for field work.

Congress has appropriated \$10,000 to cover the expenses incidental to the work. All reports must be completed not later than December 28th of the present year, and it is consequently expected that definite recommendations can be made during the early part of the ensuing year, and if the conditions warrant it, active measures for the suppression of these diseases among the Indians will at once be taken.

Medical Law.

X. THE PHYSICIAN AS WITNESS.

In the case of the Indianapolis Southern Railway Company vs. Tucker, 98 Northeastern Reports, 431, a physician, testifying on behalf of an injured passenger, was permitted to answer the question, if he had heard plaintiff "make any complaint of pain about his hand, expressions of pain, and if so to state what he said." Mr. Justice Felt, of the Appellate Court of Indiana, in passing upon the correctness of this ruling, said:

The question fairly construed, asked him to state what he heard, if anything, in the way of expressions of present existing pain relating to the time he saw appellee (plaintiff). This class of testimony in competent, and its admissibility does not depend upon the statements being made before suit is begun. The ground of this objection might be considered in weighing such testimony, but not in determining its admissibility.

The exact words of the person whose expressions of present and existing pain are called for in evidence need not be given, and slight departure from the rule admitting such testimony is not sufficient ground for reversal.

In the case of Rump vs. Woods, 98 Northeastern Reports, 369, the Appellate Court of Indiana held that the fact that plaintiff did not call the physician who attended him at the hospital to testify as to his injuries, should not be considered by the jury as detrimental to plaintiff's case.

In the case of Manning vs. State, 123 Pacific Re-

ports, 1,029, it was held by the Criminal Court of Appeals of Oklahoma to be an error to permit a physician to testify in a homicide case as to the position of the body of the deceased when the shots were fired that caused his death.

XI. PRIVILEGED COMMUNICATIONS.

In the case of Schamberg vs. Whitman, 135 New York Supp., 262, a physician had begun an action against a patient to recover for professional services. The complaint disclosed information acquired by plaintiff while attending defendant in a professional capacity and which was necessary to enable him to act in that capacity, and the defendant moved to strike out all allegations and parts of allegations containing such disclosures. Justice La Fetra, of the City Court of the City of New York, held that such disclosures in a pleading offended against the provisions of section 834 of the Code of Civil Procedure which renders physicians incompetent as witnesses to testify to such information, and that the matter complained of should be stricken out. Incidentally he referred to the fact that the legislature did not intend to deprive a physician of his cause of action for services, if he could prove them by proper evidence, and that under the rules of pleading he should set forth a plain and concise statement of the facts upon which he sought to recover, but not the evidence of those facts.

XII. MISCELLANEOUS REGULATIONS AND MATTERS.

In the State of Washington an act was passed by the legislature which provided: "It shall be unlawful to sell or in any way dispose of any vinous, spirituous, malt, or other intoxicating liquors, with or without a license, within two thousand (2,000) feet of any normal school, agricultural school, reform school, or State school for defective youth, now established or which may hereafter be legally established within the State of Washington."

In the case of State vs. Pomery, 123 Pacific Reports, 514, the defendant, a physician and a druggist, who owned a drug store situated within 2,000 feet of a normal school, prescribed a quart of whiskey for a patient and filled the prescription at his drug store. Upon this state of facts he was found guilty of violating the statute. Upon an appeal from the conviction, the question whether defendant was exempt from the operation of the law by reason of his being a physician and pharmacist, was presented to the Supreme Court. The Supreme Court affirmed the judgment and in so doing expressed the view that the language of the act was plain and unequivocal and that to read into it an exception in favor of defendant would be to substitute the will of the court for the clearly expressed will of the legislature.

News Items.

Changes of Address.—Dr. Tom A. Williams, to 1705 N Street, Northwest, Washington, D. C.

Dr. Benjamin Fidler, to *The Kortwright*, 1990 Seventh Avenue, New York.

Dr. B. Sachs, to 116 West Fifty-ninth Street, New York.

Dr. Edward Harris, to 29 South Centre Street, Cumberland, Md.

Dr. Wilbur M. Phelps, from Washington, D. C., to 214 Market Street, Staunton, Va.

A Memorial Tablet to Dr. Walter Reed at the University of Virginia.—The Virginia Medical Association is planning to erect at the University of Virginia a memorial tablet to Dr. Walter Reed, who died a martyr to his researches in yellow fever.

Harvey Society Lectures.—The next lecture in the series will be delivered on Saturday evening, November 9th, by Professor Joseph Erlanger, of the George Washington University, Washington, D. C., his subject being *The Localization of Impulse Initiation and Conduction in the Heart*.

Section in Medicine of the Academy of Medicine.—The meetings of the Section in Medicine of the New York Academy of Medicine are usually held on the third Tuesday of each month, but this month the meeting has been postponed to October 20th. Professor Carl von Noorden, of Vienna, will read the paper of the evening on *Treatment with Radium and Thorium*.

Lectures on the Care of Children.—Dr. Irving D. Steinhardt will give a course of lectures to mothers on *The Mental and Physical Care of Children from Birth to Preparation for Parenthood*. The lectures will take place Tuesday evenings, at 8:15 o'clock, beginning October 15th, at the headquarters of the Hebrew Educational Society, Pitkin Avenue and Watkins Street, Brooklyn.

Laying of the Cornerstone of the Montefiore Home.—The president and directors of the Montefiore Home, a hospital for chronic invalids and a country sanatorium for consumptives, have issued invitations to the ceremonies of the laying of the cornerstone of the new buildings of the institution, situated at 210th Street and Gunhill Road, adjacent to Jerome Avenue, the Bronx, on Sunday, October 27th, at 3 o'clock. In case of stormy weather the ceremonies will be postponed to the following Sunday.

Medical Association of the Southwest.—At the closing session of the annual meeting of this association, held in Hot Springs, Ark., on October 10th, the following officers were elected: President, Dr. W. T. Wootton, of Hot Springs; first vice-president, Dr. W. B. Dorsett, of St. Louis; second vice-president, Dr. E. H. Carey, of Dallas, Tex.; third vice-president, Dr. J. H. Barnes, of Enid, Ok.; fourth vice-president, Dr. C. C. Nesselrode, of Kansas City, Kan.; secretary-treasurer, Dr. F. H. Clark, of El Reno, Ok. The next annual meeting will be held in Kansas City, Mo.

The Society of Sanitary and Moral Prophylaxis.—A meeting of this society will be held in connection with the New York Association of Biology Teachers, at the New York Academy of Medicine, 17 West Forty-third Street, on Thursday evening, October 24th, at 8:30 p. m. The subject for discussion will be the Report of the Special Committee of the American Federation for Sex Hygiene—Dr. Prince A. Morrow, Professor Maurice A. Bigelow, and Professor Thomas M. Balliet—on the Teachings of Sex in Schools and Colleges. Prominent educators, sociologists, and physicians will join in the discussion.

Examination for Assistant Surgeons in the Public Health Service.—A board of commissioned medical officers will be convened at the Bureau of the Public Health Service, Washington, D. C., on Monday, November 11th, at 10 o'clock a. m., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health Service. Candidates must be between twenty-three and thirty-two years of age, and graduates from a reputable medical college, with one year's hospital experience, or two years' professional work after graduation. For full information regarding the scope of the examination address the Surgeon General, Public Health Service, Washington, D. C.

Northern Medical Association of Philadelphia.—This association, which, next to the College of Physicians, is the oldest medical society in Philadelphia, held a meeting on Saturday evening, October 12th. Dr. Albert Bernheim presided. The chief feature of the programme was an address by Professor Hermann Strauss, of Berlin, on *Carbohydrate Treatment in Diabetes*, an abstract of which will appear in this JOURNAL. A general discussion followed, which was participated in by Dr. James Tyson, Dr. Thomas McCrae, Dr. James M. Anders, Dr. Hobart Amory Hare, Dr. Alfred Stengel, Dr. A. J. Ringer, and Dr. David Riesman. Professor Strauss was elected an honorary member of the association. At the close of the meeting a reception was held.

Help Wanted in Work on Omentum.—Dr. Hugh Crouse, of El Paso, Texas, is preparing a monograph on tumors and diseases of the omentum, and wishes either to purchase or secure otherwise gross specimens, photomicrographs, drawings, or sections of this structure. Credit will be given to the physician from whom they are secured. A competent pathologist, in the laboratory attached to his office, will take the gross specimens, work them up, make a laboratory report, and return remnants of specimens, if so desired.

Third District Branch of the New York State Society.—The sixth annual meeting of the Third District Branch of the Medical Society of the State of New York was held in Troy, October 1st, under the presidency of Dr. John B. Harvie, of Troy. Delegates were present from Rensselaer, Albany, Columbia, Greene, and Ulster counties, and the visitors inspected the Lake View Tuberculosis Sanatorium, and the various hospitals in Troy, where special clinics were held. All the officers were re-elected to serve another year.

A Bureau of Health at Columbia University.—Dr. W. H. McCastelene, who for years has been connected with the department of physical education in Teachers' College, will have charge of a bureau of health which has been established at Columbia University, for the purpose of overseeing the health and sanitation of the entire student body. Doctor McCastelene has opened an office in Earl Hall and has equipped it with the more simple devices of an operating room, including a dentist's chair, and a laboratory in which the eye, ear, nose, and throat may be examined. All cases of illness, whether in the dormitory or the student's home must be reported to Doctor McCastelene.

Medical Association of the Greater City of New York.—A stated meeting of this association will be held in Du Bois Hall, New York Academy of Medicine, on Monday evening, October 21st, at 8:30 o'clock. Dr. Alfred Kahn will describe a new method for direct transfusion of blood and its possibilities, theoretically considered. Dr. Alexis Carrel, of the Rockefeller Institute, will read a paper on *Transfusion of Blood with Technique Recently Much Improved and Simplified*, which will be illustrated with numerous lantern slides. Dr. George E. Brewer will open the discussion on this paper. A paper on the *Effect of Drainage on the Prevention of So Called Typhoid Perforation* will be read by Dr. Forbes Hawkes and discussed by Dr. Victor A. Robertson and Dr. Henry Roth.

Raw Milk Approved by Chicago Physicians.—At a recent meeting of the Chicago Medical Society the physicians in attendance expressed their belief that raw milk that is clean is better than milk that has been pasteurized. Dr. James W. Vanderslice read a paper in which he said that milk that was properly taken care of did not need to be pasteurized, that raw, fresh milk, if pure and clean, was incomparably better than impure milk put through the pasteurizing process. Doctor Vanderslice is also reported to have said that frequent tests have proved that there are many more groups of bacteria in one c. c. of milk after it has passed through one of these so called pasteurizers than there were before. The machines served to break up the large groups of bacteria, forming thousands of smaller groups. The milk was not cleaned in the process. There were as many harmful bacteria in it as before.

Medical Expert Testimony to be Discussed.—The Medicolegal Society announces that its opening fall meeting will be held at the Waldorf-Astoria on Wednesday, October 23d, at 8 o'clock, p. m. The principal feature of the evening's programme will be a discussion of *Medical Expert Testimony in Homicidal Cases where Insanity is Pleaded*, and the merits of the bill proposed by ex-Chief Justice Emery known as the Maine Bill. Clark Bell, Esq., will read a paper on the subject, which will be discussed by chief justices from the supreme courts of Connecticut, Illinois, Minnesota, Utah, Ohio, Vermont, South Carolina, and other States. Dr. R. L. Parsons, of New York, Dr. E. S. McKee, of Cincinnati, Clarence A. Lightner, Esq., of Detroit, and Charles E. George, Esq., of San Francisco, will also discuss the question. Judge J. C. Moreland, of Salem, Oregon, will be present and offer a brief historical sketch of the Supreme Court of Oregon. The American Institute of Criminal Law and Criminology, the National State and City Bar Associations, the State Medical Societies, and all cognate associations are invited to send delegates to participate in the discussions.

Twenty-fifth Anniversary of the Scandinavian-American Medical Society.—The Twenty-fifth anniversary of the Scandinavian-American Medical Society was held in Chicago on October 10th and 11th, under the presidency of Dr. William J. Anderson. Practically every Scandinavian-American physician of the Middle West was in attendance, and an excellent programme was presented. Papers were read by Dr. Ludvig Hektoen, Dr. A. J. Carlson, of the University of Chicago, and Dr. William Jopson, of the University of Iowa.

Poliomyelitis Epidemics Under Control.—The number of cases of poliomyelitis reported in Buffalo is decreasing. For the three weeks ending October 5th, the number of cases reported for each seven day period were 28, 14, and 12, respectively. At Batavia 21 cases were reported during the month of September. The disease is present in many localities in western New York, but the reports received are not sufficiently complete to warrant a numerical estimate. The State department of health, however, is taking active measures to obtain full records of all cases. In Los Angeles the outbreak may be considered to be over. During the week ending September 28th only one case was reported.

American Hospital Association.—This association closed a most successful four days' meeting in Detroit, Saturday, September 28th. Dr. F. A. Washburn, Jr., administrator of the Massachusetts General Hospital, Boston, was elected president, and Dr. W. P. Morrill, of Winnipeg, and Miss Mabel Morrison, of Toledo, were made vice-presidents. Dr. J. N. E. Brown, formerly superintendent of the Toronto General Hospital, and now in charge of the new general hospital in Detroit, was re-elected secretary, and Mr. Asa Baker, of Chicago, was re-elected treasurer. An interesting feature of the meeting was an exhibit of useful hospital appliances and devices arranged by hospital workers.

Popular Lectures on Human Efficiency.—The fifth annual series of Sunday morning lectures at the Mount Morris Baptist Church Bible School, New York, was inaugurated on October 13th. The general topic selected for the course was the Evolution of Human Efficiency. The introductory lecture was given by Dr. Luther Halsey Gulick, who spoke of the significance and meaning of human efficiency. The next three lectures will deal with efficiency in relation to the individual, the speakers being Dr. Thomas Denison Wood, professor of physical education, Columbia University, Edward Lee Thorndike, Ph. D., of Columbia University, and Herman Harrell Horne, Ph. D., also of Columbia University. These lectures are held every Sunday morning at ten o'clock from October 13th to April 27th.

Yellow Fever.—*Public Health Reports* dated October 11th show that on October 6th the steamship *Chaucer*, from Santos and Rio de Janeiro, Brazil, by way of Barbados, arrived at the New Orleans quarantine station with a case of yellow fever aboard. The case was isolated and proper precautions were taken to prevent the spread of the disease. During the last few days of September three cases of yellow fever were reported in Mexico as follows: One at Merida, one at Laguna del Carmen, and one at Frontera. The disease has been present for some time in the State of Yucatan, where, during the months of August and September, there was a total of 71 cases, and in the State of Tabasco, where, from May to September, there were 60 cases. In the State of Campeche there were two cases during the month of September.

Danger in Goods Exchanged at Shops.—The *Buffalo Sanitary Bulletin* for September 30, 1912, calls attention to the danger which may come to innocent persons through the practice of exchanging goods sent on approval, or exchanged for other reasons. This was forcibly brought before the Buffalo Department of Health recently when a case of scarlet fever was discovered. No physician had been called, and when found by the department the patient was desquamating. At about the same time a delivery wagon called for a bundle of goods which had been in possession of the family and was to be returned to the store. This was naturally prevented. Here was a condition where no one could be charged with responsibility except the family who wilfully concealed the case, while the other members freely went about scattering the infection, visited, and permitted their friends to visit them, bought goods on approval, and probably did other undiscovered acts.

Suits against a City for Typhoid Infection.—The *New York Times* for October 14th calls attention editorially to the fact that civic responsibility is about to be subjected to an unusual but perfectly reasonable test up in Ottawa. That city is now suffering, for the second time this year, from an epidemic of typhoid, with a present record of seventy-two deaths and 1,200 cases. Those citizens who have been infected or met with measurable losses because of the epidemic are actively moving to make the city as a whole pay them individually for its negligence. In other words, the epidemic of typhoid has been followed by an epidemic of suits for damages against the municipality. The City Solicitor has told the City Council that the liability is real, as the water supply was not protected as it should have been, and the damages demanded in suits already begun aggregate \$420,000.

Proposed Legislation on Health Problems in Michigan.—At a regular meeting of the Michigan State Board of Health, held in Lansing on October 11th, the secretary was instructed to take up with the Attorney General the drafting of bills for consideration at the next meeting of the Legislature. Legislation providing for the following will be asked: State board of health supervision of water works and sewage disposal systems; State board of health authority and means to restrict contamination of lakes and streams used as sources of public water supply; State board of health authority to convene local health officers in conferences, and provision that health officers' expenses in attending the conferences be paid by the jurisdictions represented; medical supervision in schools; public school building code; State sanitary engineer; county health officers; State board of health closer supervision of appointment and dismissal of local health officers; supervision of midwifery; hotel sanitation.

The Alvarenga Prize.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about \$180, will be made on July 14, 1913, provided that an essay deemed by the committee of award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but must not have been published. They must be typewritten, and if written in a language other than English should be accompanied by an English translation, and must be received by the secretary of the college on or before May 1, 1913. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college; other essays will be returned upon application within three months after the award. Thomas R. Neilson, M.D., secretary.

Personal.—Dr. Benjamin P. Watson, of Edinburgh, has accepted the chair of gynecology and obstetrics at the University of Toronto. He will assume his new duties November 1st.

Dr. Adam H. Wright, for many years professor of obstetrics at the University of Toronto, has tendered his resignation to the trustees of the university. It is Doctor Wright's intention to devote his energies to his private practice.

Dr. Abraham Metzner, of Cleveland, has been made a member of the medical faculty of Baldwin University, Berea, Ohio.

Dr. C. M. Quinn has been appointed health officer of Mount Vernon, N. Y., to succeed Dr. John L. Hughes, who was killed recently in an automobile accident.

Dr. Ralph S. Hart, of Schuyler, Neb., has been appointed a member of the Nebraska National Guard, with the rank of first lieutenant.

Dr. Paul Betowski, formerly a member of the medical staff of the Craig Colony for Epileptics, Sonoma, N. Y., has been appointed an assistant surgeon at the hospital of the State Soldiers' Home, Bath, N. Y.

Dr. H. W. Knight, of Roseville, Pa., has received an appointment to go to West Africa, as a medical missionary. Dr. J. Browne LaRose has resigned as house physician at the Hotel Dieu, New Orleans, and Dr. Harry Everett Nelson has been appointed to succeed him.

Pith of Progressive Literature.

BERLINER KLINISCHE WOCHENSCHRIFT.

August 5, 1912.

1. F. BLUMENTHAL: Treatment of Bacterial Infections in Organism by Chemicals.
2. F. BLEICHRODER: Endoarterial Therapy.
3. M. BERNHARDT: Etiology and Pathology of Tabes dorsalis.
4. J. SPIER: Simple Method of Mapping out Borders of Heart.
5. E. RÖNIGER: Rays.
6. E. ROSENBERG: Comments on Oxaluria Question.
7. FRIEDERICH: Simple Method of Detecting Free Hydrochloric Acid in Stomach Contents.
8. L. CARO: Blood Findings in Diabetes mellitus.
9. FLURY: Pharmacology of Cascara Sagrada.
10. L. MENDELSON: Filmaronöl, Anthelmintic.
11. I. FINFELSTEIN: Experimental Syphilis in Rabbits.
12. V. TOBOLD: Technical News.
13. W. BAETZNER: Functional Kidney Diagnosis.
13. M. SENATOR: Rest Cure Ships and Rest Cures at Sea.

August 12, 1912.

14. G. SOBERNHEIM: Bacilli Carriers.
15. H. NOGUCHI: Breeding *Spirocheta pallida*.
16. TOMASZCZEWSKI: Pure Cultures of *Spirocheta pallida*.
17. E. P. TAGLE: Tissue Changes with Radiothorium.
18. E. P. TAGLE: Tissue Changes after Subcutaneous Deposits of Radium Lead Compounds.
19. F. REGENSBURGER: Thyroid Gland Metastases in Bone.
20. JOACHIMSTHAL: Distention Luxations in Syringomyelia.
21. J. TOSCANI: Phonic Percussion, New Examining Method.
22. H. E. KNOPF: Treatment of Asthma in Children.
23. S. KREUZFUCHS: Röntgen Examinations of Duodenal Tumors.
24. J. AUER: Criteria of Anaphylaxis.
25. H. LIESKE: Medical Interference in Light of Law.

August 19, 1912.

26. T. BRUGSCH: Diagnosis, Nature, and Treatment of Gout.
27. C. AMERL: Simultaneous growth in Acromegaly.
28. A. ADAMKIEWICZ: Cell Growth.
29. A. STERNBERG: "Rational" Chemotherapy.
30. W. KAUSCH: Hormonal Diarrhea.
31. M. FRANKEL: Röntgen Ray Treatment in Gynecology.
32. L. FEILICHNELD: Skin Irritation in Varicella.
33. B. KÜHN: Demonstrations in Apparatus Therapy.
34. HOFFMANN: Advances in Tropical Medicine.
35. RUNGE: Menstrual Disturbances and Their Treatment.

August 20, 1912.

36. H. KÖNIG: Menstrual Dementia.
37. A. GOLDMANN: Closing Abdominal Cavity after Simple Cholecystectomy.
38. J. RÖTTER: Discussion of Kerr's Method of Primary Closing of Abdominal Cavity after Simple Cholecystectomy.
39. S. HADDA and F. ROSENTHAL: Influence of Hemolysin on Culture of Living Tissue Outside Organism.
40. M. BORNIGER: Technique of Artificial Pneumothorax.
41. R. TURBO and J. ALOMAR: Culture of Tubercle Bacilli.
42. EDUARD MELCHER: Congenital Forearm Synostoses.
43. H. MAYER: Changes in Human Serum after Neosalvarsan Injections.
44. M. SKALLER: Treatment of Small Intestine with Gas Forming Medications.
45. A. E. STEIN: Acquired Hypoesthesia of Skin.
46. V. JENSEN: Modification of Gram Stain Especially in Respect to Gonococcus Diagnosis.
47. A. BICKLE and J. H. KING: Influence of Large Thorium Doses on Development of Plant Seeds.

7. **Blood Pictures in Diabetes mellitus.**—Caro reports the blood findings in twenty-eight cases of varying degrees of diabetes mellitus. Almost all showed a reduction of hemoglobin and the number of red blood corpuscles. A leucocytosis was not present. Twenty-two cases showed a marked relative lymphocytosis, fifteen of them from forty to seventy per cent; seven cases had a lymphocytosis up to forty per cent. In eight cases a distinct increase of the eosinophiles was present. Most noteworthy, however, is the relatively large lymphocytosis, which is not parallel with the severity of the case and is not dependent upon the percentage of sugar in the urine.

9. **Filmaronöl, an Anthelmintic.**—Mendelsohn prefers this new remedy to all others for the purpose of expelling worms, and has achieved satisfactory results even in cases of very long duration. Filmaron is the ethereal extract of the root of *Filix mas*. It is an amorphous yellow powder, slightly acid in reaction, melting at 60° C., almost insoluble in water, easily soluble in almost all of the organic solvents. On account of its instability

it is put up in castor oil by the manufacturers. The preparation is given on an empty stomach, 0.01 gramme filmaronöl being equivalent to one gramme of filmaron pure. The dose is regulated by the age of the individual and the duration of the disease. When no movement occurs an hour after the ingestion of the remedy, the author gives a drachm of castor oil. In eleven of the twelve cases the worm, with the head, was completely expelled after one or two doses of the filmaronöl.

17. **Tissue Changes with Radiothorium.**—Tagle injected radiothorium into the mammae of rats and also a charcoal emulsion for control. He found that radiothorium has an active influence upon those tissues with which it comes in contact. The charcoal, on the other hand, showed no local reactionary process. During the first few days the radiothorium produced a true inflammation, capillary dilatation, exudation, and leucocytic infiltration. Microorganisms could at no time be found. Following longer action of the radiothorium caryocinesis occurred with necrosis and increase of the fibroblasts. In the course of time the radiothorium particles were completely absorbed, first decreasing in size and number. Eventually the necrosed portions were absorbed, the fibroblast changed to connective tissue fibres, and scar tissue formed.

22. **Asthma in Children.**—Knopf asserts that asthma in children is not at all rare, and that the results of treatment are not unsatisfactory. The sooner the methods advocated by him are applied, the more rapid and permanent are the results. Beside the usual physical, dietetic, and therapeutic measures he advises psychic influence, training, hardening the system to changes of weather, change of surroundings, etc.; further, the learning of normal breathing by regular exercises. This takes time and patience, but leads to satisfactory results.

26. **Diagnosis and Treatment of Gout.**—Brugsch gives a résumé of his experiences with this disease for the past few years. He defines gout primarily as a disease in which the joints are affected by the deposit of uric acid. In his experience he found that a gouty person is distinguished from a healthy one by the presence of uric acid in the blood, even when that person is on a meat free diet for months. He gives a detailed method for determining the amount of uric acid in the blood. He divides the disease into four types: 1. Acute uric arthritis; 2, chronic uric polyarthritis; 3, renal gout; 4, chronic uric arthritis. For the purpose of establishing a diagnosis he advises examination of the ears for tophi, examination of the olecranon and patellar bursa for fixation and fluid contents, Röntgen pictures of the diseased joint show dark circumscribed spots in the bone, surrounded by a light edge chiefly in the epiphysis. These spots are pathognomonic. Among the drugs he mentions granules of colchicine, and atophan, which furthers the maximum excretion of uric acid in the urine. He recommends three per cent. sodium chloride baths at 37° C., and massage of the joint, also mud packs. Antagran is satisfactory as an external remedy. The author has not had any success with radium.

30. **Hormonal Diarrhea.**—Kausch's observations in three cases of complete or almost complete

obstipation lead him to confirm the striking peristaltic action of this new drug. He has not observed in any of his cases the unpleasant side effects and the collapse reported by other clinicians. He believes the latter are due to too rapid infusion and to the use of a preparation containing albumin.

45. Acquired Hyperesthesia of the Skin.—Stein relates his own case. For seven years he used mercury bichloride daily for disinfecting his hands without any dermatological disturbances. One day there appeared an eczema in the interdigital spaces which healed in fourteen days. As soon as he brought his hands in contact with the bichloride the same rash appeared. He has been afflicted with this "awakened" idiosyncrasy for nine years. Although he has avoided the use of all mercuric disinfectants the idiosyncrasy has increased, so that now dipping the tip of one finger into it for a moment suffices to bring forth the rash. The incubation period is interesting; in his case it is always four days.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT.

August 1, 1912.

1. TRAUBE: Medications and Poisons.
2. BAERTHELIN: Mutations in Bacteria.
3. WECHSELBAUM: Intralumbal Injection of Neosalvarsan.
4. STIERLIN: Röntgen Diagnosis of Intraabdominal Tumors from Displacement of Large Intestine.
5. WOLFF-EISNER and VOET: Rapid Röntgen Photographs of Thorax.
6. FRIEDLANDER: Experiments with Mesothorium in Direct Deep Illumination in Gynecology.
7. EPHRAIM: Action of Adrenalin in Asthma and Chronic Bronchitis.
8. WEISSENBERG: Icterus Epidemic.
9. WAGNER: Treatment of Ruptured Ectopic Gestation Sac by Free Hemorrhage.
10. PARSCH: Osteomyelitis of Pelvis.
11. HELLING: Paralysis of Diaphragm Following Unilateral Section of Phrenic Nerve.

August 8, 1912.

12. BECHTEREW: What Is Psychoreflexology?
13. CASTELLI: Neosalvarsan Local Treatment of Syphilis and Generalized Frenesia in Rabbits.
14. BRAUN: Chondroctomy in Freund's Emphysema.
15. BRÜCKNER: Spread of Typhoid.
16. KÖRBER: Clinical Significance of Much's Granules.
17. BORNSTEIN and STROINK: Oxygen Poisoning.
18. KLEIN: Addison's Disease.
19. BIERCKEL and BLANK: Ulnar Paralysis and Congenital Cervical Rib.
20. NIESZYTKA: Puerperal Fever.
21. HERSCHELD: Electrovibratory Massage.
22. SCHROEDER: Alimentary and Therapeutic Value of Maggis Root.
23. HERSHOLD: Idiocy and Ethical Degeneration.

August 15, 1912.

24. HOCHHAUS: Treatment of Arteriosclerosis.
25. HOFFMANN: Clinical Significance of Typical Electrocardiogram.
26. HOFBAUER: Pathogenesis of Pulmonary Emphysema.
27. RANSTRÖM: Tubercle Bacilli in Circulating Blood.
28. FERNBERG: Import of Sax's Sulphur Reaction in Carcinoma of Digestive Organs.
29. POLLITZER: Chondroitoria and Facultative Albuminuria.
30. YAOITA: New Method of Finding Parasite Eggs in Feces.
31. JOACHIMSTHAL: Present Status in Treatment of Congenital Hip Dislocations.
32. BRUNING: Statistics of 367 Cholelithotomies.
33. A. WAGNER: Prophylactic High Posture and Change of Position after Operations.
34. O. MEYER: Alimentary Poisoning Simulating Localized Cerebral Affection.
35. F. CARLEWISKI: Aseptic Catheterization.
36. M. STEINER: Gastrointestinal Disturbances in Infants in Form of Fever.
37. G. CARYOPHYLLIS and SOTIRIADIS: Treatment and Cure of Kalazar with Salvarsan.
38. M. SCHAAL: New Technical Points in Medicine, Sanitation, and Nursing.

August 22, 1912.

39. H. RIBBERT: Thrombosis.
40. C. SCHILLING: Immunization against Trypanosome Infection.
41. H. CONRAD and BIERAST: Filtering Diphtheria Germs through Urtide.
42. KOLLE, ROTHERMUNDT, and PESCHÉ: Action of Mercury Preparations on Spirochetal Diseases.
43. MARSCHALKO: Neosalvarsan.
44. O. BRÜCKLER: Anaphylactoid Reactions after Repeated Intravenous Injections of Salvarsan.
45. SCHRENK: Melubrin.
46. M. KOCHMANN: Combination of Drugs.
47. H. ELLERN: Immunity Treatment of Hay Fever.
48. E. SCHLESINGER: Physiological Dilatation of Large Arteries.

49. KUSTER and GEISSE: Bacteriological Examinations of Hand Disinfection.
50. R. HAUGMANN: Typical Femur Fractures in Bone Atrophy and Knee Contractures.
51. SCHULTZ: Early Diagnosis of Pulmonary Tuberculosis.
52. A. THROST: Etiological Significance of Eye Affections in Syphilis.

August 29, 1912.

53. L. CASPER: Diagnosis and Therapy of Hemorrhage from the Urinary Tract.
54. ROTH and BIEROTTE: Types of Tubercle Bacilli in Lupus vulgaris.
55. G. CASTELLI: Neosalvarsan.
56. E. FREY: Why is the Action of Seventy Per Cent. Alcohol so Strongly Bactericidal?
57. KAUSCH: Collaroid in Sepsis and Carcinoma.
58. W. SCHEIDTMANN: Peritoneal Drainage in Diffuse Peritonitis.
59. A. WAGNER: Retroperitoneal Hematomata.
60. LOTH: General Congenital Ascites.
61. WATZOLD: Chalazion.
62. RHEISE: Relation of Chronic Dacryocystitis to Diseases of Ethmoid; Treatment.
63. R. PEREIRA: Value of Wassermann Reaction with Noninactivated Serum.
64. DIERBACH: Action of Iron Iodide in Scrofula.
65. A. BRUNING: Oxygen Poisoning.
66. CZELLITZER: Problems of Race Hygiene.
67. W. HABERLING: History of Medicine; Army Hospital 200 Years Ago.

3 and 55. Neosalvarsan.—Wechselbaum has successfully injected neosalvarsan into the lumbar sac of the cord. In no case was there any reaction. The general interest of further experiments along these lines consists in determining the utility of this method of local treatment in meningitis luetica, meningomyelitis, and tabes. In all probability increasing doses will be found necessary.—Castelli experimented on rabbits with the same substance and found that neosalvarsan, on account of its neutral reaction, decreases irritation when in contact with delicate mucous membrane, such as the meninges. Salvarsan, on the other hand, is a strong irritant.

4. Displacements of the Large Intestine as Diagnostic Aid in Abdominal Tumors.—Stierlin says that by means of the changed relations of the large gut, seen by the Röntgen rays, the diagnosis of doubtful abdominal abscesses and tumors can be made much more certain. Psoas and iliac abscesses are revealed in the pictures by a typical change of position of the cecum and ascending colon to the median line. In tumors on the right side of the pelvis, the cecum is pushed toward the median line or upward, according to its original high or low position. The diagnostic proof of a typical median position of the colon in tumors of the kidneys and their neighborhood is made easier by ingestion of contrasting substances.

6. Radioactive Substances in Gynecology.—Friedlander experimented with radioactive substances and found that: 1. It is possible to stop hemorrhage in uncomplicated cases of metrorrhagia by proximity of radium or mesothorium. The technique is simpler than Röntgen therapy and consumes less time and effort. 2. The cases that are most amenable to treatment and give the most satisfactory results are those of elderly women approaching the climacteric. In these cases the influence of the illumination on severe hemorrhages from large myomata was surprising and surpassed the best results so far obtained with the Röntgen rays. 3. Before initiating this treatment a careful gynecological examination should be made, inspection, palpation, microscopic examinations of curette products, etc., always keeping in mind the possibility of malignancy. 4. In malignant tumors of the uterus, this treatment has been ineffectual.

5. In future the stronger radioactive substances, the equivalent of twenty mg. of radium bromide, will be applied in preference to Röntgen therapy.

7. **Adrenalin in Asthma and Chronic Bronchitis.**—Ephraim announces that adrenalin is an invaluable aid in the treatment of bronchial asthma and chronic bronchitis. The possibilities of its usefulness have not yet been attained. Its effectiveness depends on the method of its application; it is least effective when inhaled, more effective, but only temporary, when given subcutaneously, most lastingly effective when applied directly to the diseased bronchi.

22. **Value of Maggis Root.**—Schroeder shows by experiments on the human being that foods are better assimilated when given in conjunction with maggis root than without it, that this advantage is visibly demonstrable by increased weight. Not only is the taste of the food improved, but it can be shown clinically that the foods are much more thoroughly assimilated. Therefore Schroeder concludes that maggis root is a valuable alimentary therapeutic preparation of more significance than as a mere condiment.

26. **Pathogenesis of Emphysema.**—Hofbauer declares that the anatomical changes in the lung cannot be held responsible for the development of emphysema, because in a great number of the cases no anatomical changes are demonstrable, notwithstanding the marked lung distention. On the basis of his clinical studies and observations at the bedside, he is able to show that anatomical changes are not essential to the production of emphysema, and further, that it is produced as a result of the changes in the shifting of the mechanism brought about by air hunger, i. e. because of functional changes.

32. **Choledochotomies.**—Brüning, judging from his 367 cases, arrives at the conclusion that the relation between gallbladder disease and pancreatitis and the significance of pancreatic induration is exaggerated. He advises when performing a choledochotomy not to combine any other operation with it, for example, appendectomy, simply because the appendix looks so temptingly near. A drain should be inserted in the hepatic duct and another drain and tampon around this for protection against the flow of bile. He advises irrigations in the after treatment. Drainage in cholangitis must be kept up for months, since the flow of bile free from bacteria does not prevent recurrences. When feasible, cystectomy is preferable to cystotomy, because the latter procedure gives rise to pain at a later day. When there is a distinctly palpable pancreatic induration anastomosis formation should be encouraged. The choledochus should be opened: 1. When stones are palpable or when any have been discharged previously; 2, when it is dilated or cholangitis is suspected; 3, when the cystic duct is patent and the gallbladder contains small stones; 4, when the bile is muddy or purulent and the exit passages are open. The author advises early operation in gallstones.

39. **Thrombosis.**—Ribbert experimented on the large veins of rabbits and thinks that the conditions for thrombosis formation are, in most of the cases, due primarily to the roughness of the

vessel wall which leads to a definite precipitation of the blood plates, and second, to the unevenness of the first layers of the deposited blood plates. The characteristic formation of the thrombus is thus easily understood in the light of this mode of precipitation. The slowing of the blood stream permits the blood plates to cling to these roughened places without being immediately carried away, and thus other blood plates are deposited upon these. Changes in the bloodvessel are, however, the primary condition, brought about either by chronic processes, like arteriosclerosis, fibrosis, or by more rapid changes due to infections. Concomitant with these changes is the slowing of the blood stream, which in itself is not sufficient for the formation of a thrombus. It enables the precipitated masses to cling to the altered vessel wall.

41. **Diphtheria Germs in the Urine.**—Conradi and Bierast find in one third of all the cases of diphtheria that the bacillus is present in the urine. The danger of infection from direct contact is, however, not great on account of the scarcity of the bacilli. They advise the disinfection of the urine until bacteria are no longer demonstrable after three successive examinations. Watchfulness is necessary, because under unfavorable circumstances the diphtheria bacilli can infect milk and produce epidemics, and further, because contact of the urine with the skin may give rise to diphtheritic infection of it. Beside these purely practical points the author's findings strengthen the theoretical assumption that diphtheria is not a localized disease, but a generalized one, with temporary bacteriemia.

47. **Immunity Treatment of Hay Fever.**—Ellern reports thirteen cases of severe hay fever treated with Wright's pollen vaccine. The improvement in these cases cannot be taken without reserve, since sixteen out of twenty untreated cases reported improvement during this year.

50. **Typical Femur Fractures.**—Hagemann shows that there is a typical fracture of the femur in close proximity to the kneejoint which occurs in those diseases of the lower extremity, leading to bone atrophy and ankylosis of the joint. The fracture occurs whether the atrophy and ankylosis are due to the disease itself or are dependent upon the treatment that the extremity received, for example, in tuberculosis of the hip.

51. **Early Diagnosis in Pulmonary Tuberculosis.**—Schultes concludes that the general and fever reaction after subcutaneous injections of tuberculin should lead to the usual antituberculous treatment only when at the same time rashes are heard in the apices. Reaction after large doses, three to five mg., are less conclusive than after small doses, 0.05 to 0.5 mg. Tuberculin should be injected subcutaneously only in those cases where the history does not point to tuberculosis, where after repeated examinations the apices are found not to be involved, and where observations on temperature and weight are negative. Should there be doubt, as is often the case, between tuberculosis and neurasthenia the author warns emphatically against large tuberculin injections which, in his experience, are very detrimental to the neurasthenic.

57. Collargol in Sepsis and Carcinoma.—Kausch says that in septic infections collargol given intravenously relieves sepsis with all its concomitant symptoms. The action is so certain that if after injection satisfactory results are not obtained, the existence of pus foci must be assumed. Collargol is also effective in pyemic processes. This was shown in two cases of postoperative empyema and mastoiditis. If the symptoms of the infection should return, the injection is repeated. The usual dose is from ten to twenty-five c. c. of a two per cent. solution. In severe cases, from fifty to 100 c. c. may be given. The injection should be made slowly—for the larger doses fifteen minutes is required. If the remedy is used in carcinoma it produces a typical local and general reaction. The author is not prepared to say whether it possesses a curative effect. It should be injected into the opened vein.

PRAGER MEDIZINISCHE WOCHENSCHRIFT.

September 5, 1912.

1. DAVID KLEPETÁR: Interesting Case of Transference of Vaccination Pustules.
2. W. PROKUPKA: Stab Injury of Superior Coronary Artery of Stomach.
3. F. LENNEMALM: Chronic Arsenic Poisoning Especially in Habitation (To be concluded).
4. MICHAEL URBAN: Friedrich Hebbel in Marienbad (To be concluded).

September 12, 1912.

5. SIMON LEDERER: Hematometra, Hematocolpos, Atresia hymenalis congenita.
6. F. LENNEMALM: Chronic Arsenic Poisoning Especially in Habitation (Concluded).
7. MICHAEL URBAN: Friedrich Hebbel in Marienbad (Concluded).
8. F. KANNENBERGER: Was Napoleon Epileptic?

September 19, 1912.

9. ERNST KALMUS: Criminalological Studies for Physician According to Present and Future Law (To be concluded).
10. RUDOLF STEINER: XIX Meeting of Society of German Laryngologists.
11. ERNST KALMUS: Criminalological Studies for Physician According to Present and Future Law (To be concluded).
12. ADOLF KELL: Perioritis, Lymphangitis, Gonorrheal Lymphadenitis.

9 and 11. Criminalological Studies for the Physician.—Kalmus speaks very interestingly on the duties of the coroner's physician, on forensic medical law, and hygienic and demographic laws. His article is thorough and must be read in the original. His review of the State laws existing in America is very good.

WIENER KLINISCHE WOCHENSCHRIFT.

September 5, 1912.

1. K. BODENBERGER: Operations for Phimosis.
2. EDON EWALD PRIBRAM: Cholecystitis and Prevention of Bacilli Carriers as Infectious Agents According to Our Present Therapeutics.
3. JOSEF WINKLER: Sacral Dermoid.
4. RUDOLF VON RAUCHENBICHLER: Rupture of Quadriceps Tendon.
5. RUDOLF BIEHL: Landry's Paralysis.
6. LAD HASKOVEC: Hygienic Inspection of Schools.

September 12, 1912.

7. A. THEILHABER: Treatment after Operations for Carcinoma.
8. JULIUS BAUER: Fat Dividing Ferments of Blood Serum in Disease.
9. H. TRAUER: Vaginal Cesarean Section as Method of Delivery.
10. OSKAR BENEST: Diphtheria of Middle Ear.
11. P. D. SUGAROFF: Changes in Elimination of Urobilin and Uric Acid after Brief Cold Water Treatment.

September 19, 1912.

12. ALFRED EXNER and EMIL SCHWARZMANN: Tabetic Crises, Ulcus ventriculi, and Vagus.
13. HANS HEYROVSKY: Cardiospasm and Ulcus ventriculi.
14. L. ARZT and W. KERL: Action of Preparations of Freshly Extirpated Animal Brain and Liver upon Influence of Atoxyl.
15. PAUL KAUNITZ: Primary Carcinoma of Trachea.
16. FRITZ TEBESKO: Peculiar Combination of Paroxysm Producing Hemoglobinuria with Excess of Kidney.
17. S. GOLDFELAM: Pupal Phenomena.

September 26, 1912.

18. L. UNGER: Pathology and Treatment of Newborn.
19. R. FRANZ and A. JARISCH: Serological Diagnosis of Pregnancy.
20. J. VON BENECUR: Physical Treatment of Emphysema of Lung.

21. GOTTFRIED SCHWARZ and NOVACINSKY: Pechbar, Observations with Röntgen Ray in Large Intestine during Severe Chronic Inflammation.

22. J. HATTEMAN: Blood Picture in Struma and Basedow's Disease.

23. JULIUS DREY: Discharge of Cancerous Polyp of Intestine with Feces.

24. HEINRICH PASCHKIS: Dysidrosis palmaris.

2. Cholecystitis and Prevention of Bacilli Carriers as Infectious Agents According to Our Present Therapeutics.—Pribram proposes that boards of health pay attention to chronic bacilli carriers, patients who should be included among those whose cases are registered. If these chronic carriers, as it seems to be the case so often, cannot be cured permanently, the people they associate with should be informed. Furthermore, pamphlets should be distributed containing hygienic rules; these carriers should also be prohibited from following certain vocations. His last proposal is rather severe, as he thinks it would be necessary for the government to pension such carriers and to force them to live in isolation camps supported by the government.

6. Hygienic Inspection of Schools.—Haskovec thinks that school inspection should also include observation by neuropathologists, and gives certain rules under which such observation should be carried out.

8. Fat Dividing Ferments of the Blood Serum in Disease.—Bauer remarks that all human blood serum contains a fat dividing ferment. In cancerous and tuberculous patients the action of this ferment is usually very much reduced, while in mild, benign tuberculous cases it is increased. He thinks that the decreased lipolytic action of such sera is not caused by an increase of a thermostable anti-ferment (antitrypsin), but is based upon a diminution of the content of the lipolytic ferment.

14. Action of the Preparation of Freshly Extirpated Animal Brain and Liver upon the Influence of Atoxyl.—Arzt and Kerl take up the cause for the effect produced by atoxyl. They review Ehrlich's as well as Levaditi's opinion about the action of atoxyl, the former believing that atoxyl did not influence trypanosomes *in vitro*; that is, that it exerted not a direct, but an indirect influence, which action he thought to demonstrate through results obtained with trypan red, while the latter showed that atoxyl, if combined with a freshly prepared liver mash, would have *in vitro* a trypanocide effect. Our authors prepared organic mash from brains and liver taken from young rabbits; the organs were sterilized and finely mashed, making thus, with the addition of physiological salt solution, a heavy pulp, which was then added to atoxyl and the preparation injected into mice intraperitoneally. Their results showed that atoxyl given in such a mash produced toxic substance in the animal; but liver mash was more toxic than brain mash; if glycogen was used instead of the liver mash, very toxic substances were also produced, while if for the brain mash lecithin, cholesterol, or nuclein was substituted no results were produced.

19. Serological Diagnosis of Pregnancy.—Franz and Jarisch come to the conclusion that it is possible, serologically, to diagnose an existing pregnancy, although the technique is rather complicated.

PARIS MÉDICAL.

September 14, 1912.

1. CHALIER and REBIVET: Acquired Destructo-ophthalmas.
2. PAUL GIBERT: Diagnosis and Treatment of Sinus-ocular Phlebitis of Otic Origin.
3. PIERRE LEREBOLLETT: Treatment of Catarrhal Icterus.

3. **Treatment of Catarrhal Jaundice.**—Lereboullet places hygiene and diet first in his recommendations as to treatment, ordering the patient to bed and putting him on milk diet. Intestinal poisoning is thus combated. About three quarts of skim milk daily are prescribed, but kefir or yagourth (see editorial article, p. 702) may be substituted. Full diet is resumed very gradually, eggs being cautiously added and only the white meats used at first. Grapes are thought to be a powerful hepatic stimulant, and lemon juice has its partisans. Plenty of water is given to help diuresis; this is important, and mild mineral waters may be used. Cold enemata, twice a day, are advised. Benzonaphthol and salacetol are given to combat the intestinal sepsis; a calomel purge follows at the end of the first week, then opotherapy by means of half a dozen daily capsules of bile. Pills of extract of liver are sometimes substituted. At the end of the third or fourth week, urotropin and sodium salicylate are indicated. If the liver remains enlarged the patient is ordered to one of the mineral spring resorts, or a powder may be given of sodium bicarbonate, eight grammes, sodium phosphate, four grammes, dry sodium sulphate, two grammes, dissolved in a quart of hot water and taken three times daily one hour before meals. Remember that jaundice is often a sign of infection. If it persists, repeated calomel purges are given, the bile opotherapy is continued, also the cold enemata. As to secondary symptoms, itchiness of the skin is best combated by very hot lotions containing alcohol or vinegar or dilute carboic acid, or by zinc oxide ointment containing a small proportion of menthol. Hemorrhage is met with calcium chloride and the opotherapy already mentioned. Prognosis should always be guarded, although the majority of cases terminate favorably.

PRESSE MÉDICALE.

September 11, 1912.

1. AUGUSTE BROCA: Conditions of Imaginary Traumatic Causation.
2. BRIQUET: Acromegaly.
3. P. DESFOSSES: Sterilization of Dressings.

September 14, 1912.

4. LESNÉ, FRANÇOIS and GÉRARD: Streptococcal Pyemia, and Streptococcal Vegetative Endocarditis in Facial Erysipelas.
5. G. MOURIQUAND and G. COTTE: Treatment of Gastric Crises of Tabes by Avulsion of Intercostal Nerves (Frank's Operation).

2. **Acromegaly.**—Briquet reports the case of a woman of twenty-four years, in whom acromegaly had developed abruptly six years before as the result of a fright, in association with total suppression of the menses. Though the skeletal changes were typical, no headache and practically no visual disturbance were present. Pills of hypophy sine, each containing 0.05 gramme, were prescribed, the number taken being increased daily by one pill, from four up to ten. Eleven days later, symptoms suggesting influenza appeared, unexpectedly followed in seventy-two hours by delirium, collapse, coma, and death. The author is unable to decide whether the administration of hypophy sine had an unfavorable action in this case, and doubts that a true influenza was present. Pituitary medication has been found useful in some cases of

acromegaly and has hitherto been considered a harmless measure in general. In this patient ovarian disturbance was probably also present.

3. **Sterilization of Dressings.**—Desfosses refers to the fact that concordance of opinion concerning the lowest temperature consistent with safety in autoclave sterilization has not as yet been reached, and discusses experiments recently performed by Grimbert to settle this question. It was found that dressings enclosed in hermetically sealed metallic boxes were sterilized by subjection to a temperature of 129°, or even 120° C., the moisture embodied in the dressings being sufficient to act as though steam had actually entered the containers. A maximal temperature of 130°, applied for a varying period of time, according to the nature of the objects to be sterilized (never exceeding one hour), is all that is required. Since the ordinary manometric readings are unreliable, owing to the presence of air, as well as steam in the autoclave, control tubes containing benzoic acid, which melts at 120° to 121°, should be used in order to insure that the temperature in the apparatus shall have attained at least to that level.

4. **Blood Infection and Endocarditis in Facial Erysipelas.**—Lesné, François, and Gérard find that in at least one third of cases of severe erysipelas the blood yields a pure culture of the streptococcus. Such a finding does not, however, imply an unfavorable prognosis. Streptococcal septichemia in a small proportion of cases and pyemia almost always may become complicated with infectious endocarditis. This involves the left side of the heart, particularly the mitral valve, which becomes covered with small vegetations. It is often overlooked, since generally there are no physical signs, though there is always a possibility of multiple embolism. Abnormal sounds heard over the precordium in erysipelas are only in exceptional instances due to endocarditis; they are usually exocardiac in origin, occasionally pericardiac.

5. **Frank's Operation in the Treatment of the Gastric Crises of Tabes.**—Mouriquand and Cotte consider avulsion of the intercostal nerves the best and least severe surgical procedure now available for gastric crises. Neither this nor Förster's operation, however, excludes the possibility of recurrence, a fact exemplified in the authors' case, operated in by the Frank method, in which after relief for some months the pains began to reappear. Mouriquand and Cotte believe that more permanent results would be obtained if a greater number than usual of the intercostals were avulsed, viz., from the fifth to the twelfth dorsal, and even sometimes also the first two lumbar. It would also be desirable, in order to preclude regeneration of the nerves, in some way to destroy the function of the corresponding spinal ganglia.

SEMAINE MÉDICALE

September 18, 1912.

- T. BRINCH: Can Light Rays Be Set Free and Utilized in Therapeutics?

Treatment by Light Rays Set Free in Tissues.—Brinch obtained good results in a case of lupus vulgaris, which had already recurred three times after Finsen light treatment, by the following procedure: A 1.5 per cent. solution of quinine sulphate

in distilled water, acidulated with one drop of sulphuric acid to each ten grammes of the solution, was exposed for two hours to direct sunlight, or for four hours to diffused light, or again, in winter, for two hours to an electric arc. The fluid thus obtained, containing absorbed light rays, was injected daily with a fine needle through the healthy skin margins surrounding the involved areas into and under the diseased tissues. In four to ten days the skin of the parts treated became detached, leaving ulcerations three or four mm. deep, lined with reddish granulation tissue. Dressings of "illuminated" solution proving too irritating, an "illuminated" ten per cent. ointment of quinine sulphate was applied instead. In the third to the fifth week after treatment a scar was formed over the area, in most instances not depressed below the surrounding surface, and deep infiltrations disappeared. Control injections in the same case with a quinine solution prepared and kept in the dark were found to be without influence on the progress of lupus.

ROUSSKY VRATCH.

June 30, 1912.

1. N. B. PETROFF: Tropical Splenomegaly.
2. N. S. UMAN: Body Weight in Progressive Paralysis.
3. P. PH. POKROVSKY: Syphilis in Private Practice Treated with "606."
4. A. E. LEMAN: Exception to Bell-Macendie Law.
5. I. A. SCHLAPOBERSKY: Employment of Pituitrin.
6. N. S. SCHIROKOFF: Employment of Pituitrin in Obstetrical Case.
7. B. W. ZVIRBEFF and K. L. REILAN: Intravenous Injection of Salvarsan in 200 Cases of Syphilis.
8. W. U. MRONGOVITS: Reinfection with Syphilis after Treatment with Salvarsan. Black Chancre.
9. B. N. VOJNICH: So Called Traumatic Scarlatina and Scarlatinoid Erythemas.

July 7, 1912.

10. A. A. MELKICH: Bacillus of Paratyphoid A.; Group Relation to Other Paratyphoid Bacteria.
11. L. F. DMITRENKO: Blood Pressure in Cardiac Cases.
12. E. A. BELORUTCHEFF: Technique of Embryotomy.
13. U. U. KRUMARENKO: Salvarsan in Conjoint Practice.
14. D. I. ROZANOFF: Epidemic of Scarlet Fever.
15. I. K. PRITSKY: Fatal Case of Gangrene of Mouth Following Administration of Salvarsan for Malaria.

1. **Splenomegaly.**—Petroff reports a case of splenomegaly (kalaazar) in a woman, thirty-eight years of age, who also suffered from malaria. The disease terminated fatally and the diagnosis was established on post mortem examination. The author refers to two other cases, both in children, reported by Russian authors.

5 and 6. **Pituitrin.**—Schlapobersky employed pituitrin in three cases of uterine inertia with the result that strong expulsive pain followed immediately the hypodermic injection of the drug. In one of the cases the uterine contractions were so strong that sloughing occurred of the posterior lip of the cervix, difficult delivery of the body of the child, and retention of the placenta, necessitating manual extraction.—Schirokoff employed pituitrin in two cases of protracted labor and one of hemorrhage following perforation of the uterus by a curette. The results were favorable in each case.

8. **Reinfection with Syphilis.**—Mrongovits reports a case of reinfection with syphilis, six months after successful treatment with salvarsan of a previous infection.

10. **The Paratyphoid Bacillus.**—Melkich concludes, from a careful biological study of two strains of the paratyphoid bacillus, that this organism is closely related to the group of bacteria pathogenic to rats, as *Bacillus paratyphosus enteritidis*, the Gaertner, and the Danysz bacilli. He

suggests the probability that paratyphoid in man is transmitted by rats.

11. **Blood Pressure in Mitral Insufficiency.**—Dmitrenko concludes, from a clinical study of fifty cases of cardiovascular affections, that the blood pressure is not characteristic in mitral stenosis, even in the presence of cardiac hypertrophy, and is therefore of no diagnostic value. He suggests that marked inequality of blood pressure in both arms points to aneurysm of the aorta.

12. **Embryotomy.**—Belorutcheff recommends a simplified method of embryotomy in cases of transverse presentation in which the neck cannot be reached. An opening is made in the thorax and the thoracic organs are removed. The neck is then readily brought within reach for decapitation. By this procedure evisceration of the abdomen is avoided.

15. **Gangrene of the Mouth Following Injection of Salvarsan.**—Dritsaki reports the case of a physician who since the age of fifteen years suffered from malaria which was treated with quinine and methylene blue without permanent result. He then decided to submit to salvarsan injection, which was made intravenously. Following the injection a marked reaction took place, followed by enlargement of the liver and spleen and a gradually developing gangrene of the lips, cheeks, and tongue. The patient gradually grew weaker and died from exhaustion.

BRITISH MEDICAL JOURNAL.

September 28, 1912.

1. V. Z. COPE: Carcinoma of Colon.
2. W. G. RICHARDSON: Appendicitis.
3. T. B. HENDERSON: Spontaneous Reduction of Intussusception.
4. M. MORITZ: Fractured Pelvis with Laceration of Femoral Vein, Lateral Suture.
5. F. W. JOLIVE: Reflections after Twenty-one Years of General Practice.
6. C. CLARKE: Sterilization of Skin by Spirituous Solution of Mercury Picchloride.
7. F. C. MAYNARD: Iodine as Dressing for Operation Wounds.
8. F. I. A. DALTON: Iodine as Sole Preparation and Dressing for Operation Wounds.

2. **Appendicitis.**—Richardson analyzes the results of operations in 619 cases as follows: 1. There were 113 "interval" operations with no deaths. 2. Of the acute cases sixty-three were operated in early with no deaths, and ninety-three were operated in later in the disease with two deaths. 3. Of localized abscess cases there were eleven deaths out of 274 cases, and of twenty-five in which the abscess was drained but the appendix not removed, only one ended fatally. 4. There were twenty-nine acute cases with general peritonitis and gangrenous appendix of which twenty were fatal; in twenty similar cases in which there was also an abscess and in which the appendix was removed and the wound drained there were fourteen deaths; lastly, there were two patients so ill that the peritoneal cavity alone was drained; both died. Richardson therefore concludes that we are not justified in temporizing in the face of a diagnosis of appendicitis unless the symptoms all subside very promptly. If one, such as rapid pulse, or rise of temperature, etc., persists, he advocates no further delay on account of the excellent results of early operation and the dreadful mortality in delayed cases.

3. **Intussusception.**—Henderson reports a case in a child of thirteen months in whom intussuscep-

tion occurred three times. In the first two attacks the condition underwent spontaneous reduction with prompt recovery. In the third, operation was necessary.

4. **Laceration of the Femoral Vein.**—Moritz sutured the vein with fine common thread on a cambric needle for the extent of about a quarter of an inch. The suture was of the Lembert type. Recovery was prompt and there was no thrombosis of the vein, at least none sufficient to give any distinguishable signs.

6. **Sterilization with Mercury Perchloride.**—Clarke paints the skin twice, at an interval of ten minutes, with a one to 500 solution of mercury bichloride in methylated spirit. He finds, in a series of 102 operations, that the sterilization is quite as thorough as with iodine and that the preparation has several advantages over the latter. Primarily it is a more powerful antiseptic than iodine; it does not cause local inflammation; it is not painful if painted about the rectum, etc., and it is free from staining properties. Cultural experiments with staphylococci and *Bacillus coli* showed complete sterilization of infected catgut after two minutes' exposure to the solution.

7 and 8. **Iodine as a Dressing for Operation Wounds.**—Madden and Dalton agree that iodine alone, without any other dressing, gives most excellent results in the care of operation wounds. Madden's experience was a severe test, for he was dealing with what he considers the "dirtiest skins possible to imagine" among the abjectly ignorant Egyptian fellahin.

LANCET.

September 28, 1912.

1. T. OLIVER: Dust and Fume, Foes of Industrial Life.
2. W. F. ROBERTSON: Etiology of Dementia Paralytica.
3. E. M. CORNER and C. E. BASHALL: Amputation in Infantile Paralysis.
4. J. E. FRAZER: Earlier Stages in Development of Pituitary.
5. G. W. WATSON and M. J. STEWART: Acute Colliquative Necrosis of Spleen.
6. G. S. HUGHES: Acute Irreducible Intussusception in Child Aged Six Months.
7. T. B. SCOTT and G. B. SCOTT: Treatment of Bacterial Infections by Autoogenous Vaccines.
8. A. DON: Fracture of the Cervical Spine; Operation; Autopsy.
9. R. M. LESLIE: Child Welfare and Industrial Insurance.
10. A. D. WALLER: On Claim of Bell to Discovery of Motor and Sensory Nerve Channels.

1. **Dust and Fume.**—See this JOURNAL for October 12th, editorial article, page 751.

2. **Dementia Paralytica.**—Robertson concedes that a satisfactory case has been made out to the effect that a previous infection by *Treponema pallidum* strongly predisposes to the development of dementia paralytica, but believes that farther than this we should not go. From bacteriological studies made during the past ten years he is convinced that there is another and more important factor, a diphtheroid bacillus which he terms *Bacillus paralyticans*. He bases his conviction upon the following evidence: With suitable culture media the bacillus can be demonstrated to be constantly present in the genitourinary tract and nasal mucosa of the general paralytic. The nasal infection can be traced along the lymphatics through the base of the skull into the endocranial lymphatic system, and in a considerable proportion of the cases the bacillus can be cultivated from the cerebrospinal fluid. Rabbits may be infected through the genitourinary

tract with this bacillus, and of sixteen thus dealt with, in ten developed paresis or ataxia or both after some months. He further shows that the infection is transmissible from one animal to another by contact, for three normal males became infected through being placed with infected females. Microscopical examinations of the central nervous systems of the infected rabbits in which have developed dementia and paresis, revealed distinct chronic inflammatory lesions. There is evidence to show that this bacillus does not continue to grow in the nervous system as a diphtheroid organism, but that it changes its form. It is probably in but one stage of its development when found in the diphtheroid form. Robertson has noted further that in human cases of dementia paralytica there is an accumulation of very minute polymorphic bodies in the lymph spaces about the vessels and nerve spaces in the cerebral cortex. These require special methods of staining for their demonstration. He suggests that their morphological characters are those of amebulæ. In addition, there is another type of body, a minute rod, which occurs throughout the nervous tissues of the paralytic, and is frequently found within the nerve cells. He holds the view that probably both of these bodies are in some way connected with the bacillus. He believes that the bacillus is in reality a protozoon parasite, that the progressive character of dementia paralytica is associated with its continued growth, and that the presence of this bacterium is not recognized because of a change in form in the nervous system. He goes even further in his contention that this diphtheroid organism is at least in part the causative factor, for he has treated several cases of the disease by means of an antiserum and in some of them he has obtained phenomenal results.

3. **Amputation in Infantile Paralysis.**—Corner and Bashall have amputated the paralyzed lower extremity in a number of cases of infantile paralysis. Their results have been surprisingly good both as to subsequent ability to get about on an artificial member and, more immediately, as to the great improvement seen in the general health of the patients. All have promptly gained in weight. The mental state has also been much benefited by the removal of the useless extremity. The authors find that to be successful the amputation must be high, at least as high as the middle of the thigh. In some cases with bilateral paralysis they have amputated one leg and excised the knee on the other to obtain a stiff leg. Even under such a radical surgical measure as this the improvement left little to be desired. They specially draw attention to the fact that the method is particularly adapted to such patients as will be compelled either to earn their own living or to become public charges in later life.

5. **Necrosis of the Spleen.**—Watson and Stewart report a case of streptococcus infection in which there were but few symptoms until shortly before death, and then none of any severity which pointed to splenic involvement. The spleen was found, on autopsy, to consist of a thick wall of shaggy tissue surrounding a pint or more of bloody necrotic matter. There was no pus in the spleen

and no sign of infarct. The liquefaction was due to pure necrosis. In the wall there were found great numbers of long chain streptococci. The original portal of entry was probably old tuberculous cavities in the lung.

7. Autogenous Vaccines.—Scott and Scott obtained good results with autogenous vaccines in the treatment of cases of asthma in which the provoking factor was chronic bronchitis or an influenza infection. Infections with pneumococci and staphylococci yield promptly, while those with streptococci are much more resistant. The authors advocate small doses, ten or fifteen million, in the beginning and do not exceed fifty to 100 millions at any time in the treatment. In their paper they also record excellent results in the treatment of the chronic urethritis which follows gonorrhea. One of the authors has devised a modification of the Thoma Zeiss counting chamber which has a depth between the cover and the ruled disc of only one one hundredth mm. This permits of the easy direct counting of the number of bacteria in a fluid, and is at once simple and accurate.

DUBLIN JOURNAL OF MEDICAL SCIENCE.

September, 1912.

WALTER G. SMITH: Phantasms of Life.

GLASGOW MEDICAL JOURNAL.

September, 1912.

1. WALKER DOWNIE: Fracture of Larynx.
2. WALTER K. HUNTER: Elephantiasis Occurring in this County (Scotland).
3. JOHN W. NATHIE: Contusional Pneumonia.
4. A. BLAIR AITKEN: Insertion of Rectus abdominis.
5. HUGH A. McLEAN: Aspects of Medical Life in Old Glasgow.

1. Fracture of the Larynx.—Downie reports four cases of fracture of the larynx; the first was caused by grasping of the throat in sport and complicated with dislocation. The second was caused by muscular effort in sneezing, when engaged in strenuous labor such that the muscles of both arms and of the chest were fixed. The third resulted from a fall, in which the front part of the neck came in violent contact with the upper bar of a wooden chair. The fourth occurred when the patient was intoxicated and quarrelsome, and may have been caused by a grasp at his throat.

4. Insertion of the Rectus abdominis.—Aitken finds from the examination of fifty subjects that certain of the fibres of the rectus do not extend down to the symphysis pubis, but pass obliquely inward and are attached to the linea alba by a series of little tendinous fasciculi, similar to those found at the insertion of the pyramidalis. Occasionally these tendons are not evident and the muscle fasciculi appear to end directly in the fibrous tissue of the middle line. No mention is made of this in most textbooks.

PRACTITIONER.

September, 1912.

1. G. ERNEST HERMAN: Use of Pessaries.
2. G. BELLINGHAM SMITH: Treatment of Eclampsia.
3. H. LUTHER MURRAY: Puerperal Fever: Data on Prophylaxis and Treatment.
4. JOSEPH PRIESTLEY: Review of Literature on Public Health.
5. J. L. BUNCH: Pruritus and Other Itching Diseases of Skin.
6. T. GARNETT: Vaccine Treatment of Acne and Allied Conditions.
7. AGNES F. SAVILL: Further Notes on Vaccine Treatment of Seborrhea.
8. LINDSEY SEWELL: Enucleation of Tonsil.
9. THOMAS D. LUCE: Lardol: Thermal Mud and Peat Baths: Curative Properties.

10. SARA KEITH and G. E. KEITH: Blood in Cancer; Indication for Treatment.
11. J. STAMLEY DIKE: Practical Value of Opsonic Estimations.
12. ARTHUR J. BROCK: Disease as Nemesis of Reproductive Inefficiency.

6. The Vaccine Treatment of Acne and Allied Conditions.—Galbraith says with regard to acne vulgaris that the acne bacillus is the cause of acne in all its stages. The staphylococcus is a surface contamination and at the most can only aggravate existing pustulation. Doses of five to ten millions do not suffice to cure; the doses required range from thirty to 100 millions according to the type of the disease. The duration of treatment extends from three to five months in the milder cases, from six to twelve months in the severe forms. As there is a close relation between the opsonic index and the amount of pustulation, the latter may be taken as the guide to dose and frequency of administration. While it is impossible to give anything like a definite prognosis, it may be said that marked improvement is brought about in the great majority of cases, and a fair proportion are cured. The mild comedo and superficial pustular types are the most amenable to treatment, next the pure comedo type, and last the deep indurated type. An autogenous vaccine gives better results than a stock vaccine. Concerning sycosis he says: *Staphylococcus pyogenes aureus* is the causal organism in by far the greater proportion of cases. The great majority of acute cases and many of the subacute can be cured by a vaccine. Complete cure is rare in the chronic cases, those which have lasted perhaps for years. In a certain type of case a vaccine is of no use. An autogenous vaccine is superior to a stock vaccine, and a case should never be looked upon as a failure until an autogenous vaccine has been tried.

7. Vaccine Treatment of Seborrhea.—Savill reports seven cases, six of them in women, in which she employed vaccines in the treatment of seborrhea. Local treatment was discontinued in every case except the first. Improvement of the greasiness of the scalp was obtained in all; in some the condition became normal. The improvement was usually marked at first, then matters stood still for a time before the final cure. In most cases the fall of hair was greatly diminished. When it continued it was accompanied by a growth of new downy hair. When the general health was below par the fall was not readily arrested.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

October 3, 1912.

1. JOHN A. FORBES: Administration of Salvarsan in Syphilis.
2. HIDETO NAGACHI: Identification of *Spirochaeta pallida* in Culture.
3. HOMER F. SWIFT: Anaphylaxis to Salvarsan.
4. ARNER POST: Proper Places of Mercury and Salvarsan in Treatment of Syphilis.
5. HOWARD FOX: Relative Value of Mercury and Salvarsan from Serological Point of View.
6. WILLIAM T. CORLETT: Teaching of Syphilis. Attitude of Hospital Boards to Disease.
7. HOMER F. SWIFT and A. W. M. ELLIS: Intensive Treatment of Syphilis.
8. RICHARD DEXTER and CLYDE L. CUMMER: Importance of Early Diagnosis of Syphilis.
9. ALBERT KETTEL and S. H. HURWITZ: Combination of Normal and Syphilitic Extracts by Means of the Wassermann and Epiphannin Reactions.
10. HIRSH NOLCHIE: Luetin Reaction.
11. ARTHUR W. M. ELLIS: Secondary Syphilitic Meningitis.
12. B. C. CORBUS: Four Years' Experience with Wassermann Reaction in Practice.
13. C. R. BAILEY: Value of the Four Reactions in Diagnosis and Treatment of Syphilitic Diseases of Nervous System.
14. SAMUEL T. ORTON: Extensive Brain Disease from Enderteritis: Probably of Syphilitic Origin.

15. JESSE C. MYER and R. D. CARMAN: Cardiospasm with Sacculatation of Esophagus.
16. JOHN R. MCDILL: Bloodless Surgery of Liver.
17. JAMES HAMILTON: Simple Apparatus for Administering Salvarsan Intravenously.
18. GLENN I. JONES: Treatment of Chronic Influenza.
19. PAUL E. BECHET: Extensive Dermatitis medicamentosa from Mital (Pyramidon).
20. A. R. HOOVER: Congenital Defect in Armenian.
21. GEORGE R. LIVERMORE: Anuria following Intravenous Administration of Salvarsan.
22. VICTOR F. MARSHALL: Nonadherent Membranous Patch in Pericollitis.
23. FRED E. LEAVITT: Home Made Infant Incubator.
24. O. H. CAMPBELL: Peculiar Case of Common Salt Poisoning.
25. L. S. HINE: Common Salt and Constipation.

1. Administration of Salvarsan in Syphilis.—

Fordyce believes that salvarsan and mercury combined are more efficient than either alone, in changing the blood reaction. It is possible to reverse the blood reaction permanently in the primary stage, but the probability of changing it with only a few doses grows less as the disease advances. We may so concentrate the treatment that most of the organisms, if not all, are destroyed by introducing into the system very large doses of the drug as is possible with neosalvarsan, but the remedy has been used too short a time to allow one to arrive at definite conclusions.

2. Identification of *Spirochaeta pallida* in Culture.—

Noguchi has adopted the following standards by which he identifies the germ of syphilis: Correct morphology, necessity of the presence of sterile flesh tissue in culture medium, strict anaerobiosis, rather faint hazy growth in solid or fluid mediums without any noticeable change in the proteid constituents, nonproduction of any offensive odor in culture, capability of inciting an allergic reaction on the skin of certain cases of syphilis and parasyphilis (so called luetin reaction), specific complement fixation with the antipallida immune serum or certain serums from human cases of syphilis, provided this antigen is suspended in saline solution and not prepared by alcoholic extraction, and pathogenicity which may be gradually attenuated in course of cultivation, but the other seven conditions should be constantly fulfilled.

3. Anaphylaxis to Salvarsan.—Swift has observed, after repeated injections of salvarsan, respiratory and vasomotor symptoms simulating anaphylaxis; in one case a toxic erythema appeared. His explanation is that a reaction probably takes place between the native serum by salvarsan so that the homologous serum phenomenon seems to depend on an alteration of the patient's own serum and salvarsan.

4. Mercury and Salvarsan in Syphilis.—Post thinks mercury must be retained, because salvarsan has not diminished its usefulness, and because it can be employed when the use of salvarsan is difficult or even contraindicated. The latter is harmful if therapeutic doses are exceeded, but if properly used it relieves, and in some cases cures. The future, however, is always uncertain. Salvarsan has renewed interest in the study of syphilis.

5. Relative Value of Mercury and Salvarsan from a Serological Point of View.—See this JOURNAL for June 15th, page 1295.

7. Intensive Treatment of Syphilis.—See this JOURNAL for June 8th, page 1229.

8. Importance of Early Diagnosis of Syphilis.—Dexter and Cummer emphasize this point and show the futility of attempting an early diagnosis

of syphilis on chemical findings alone; a sore present on the genitalia or elsewhere, which in any way suggests an initial lesion, should be considered nonsyphilitic until verified by repeated bacteriological, serological, and clinical observations. They hold that the general profession should be as familiar with the examination for *Spirochaeta pallida* as it is with the examination of the sputum for tubercle bacilli; that bacteriological and serological methods are indispensable in the early diagnosis of syphilis and that early diagnosis alone allows rational and intensive treatment of the disease.

9. Comparison of Normal and Syphilitic Extracts by Means of the Wassermann and Epiphanin Reactions.—Keidel and Hurwitz have observed that the Wassermann and the epiphanin reactions would apparently indicate that syphilitic and nonsyphilitic extracts are not entirely equivalent, the former being superior to the latter. The presence of antibodies specific for a given antigen may be demonstrated by means of the epiphanin reaction. The latter may be used to show the presence of antibodies in the serum of syphilitic patients. These antibodies are directed against some substance or substances found only in the extracts of syphilitic tissue, and are probably associated in a specific manner with the syphilitic process. These antibodies are not necessarily the so called Wassermann bodies, although they may be, according to the dualistic theory of Wassermann and Citron.

10. The Luetin Reaction.—Noguchi holds that luetin reaction is specific for syphilis, being present in the majority of tertiary, latent, and hereditary syphilis, less constantly present in secondary untreated and primary cases, and in most instances in treated secondary cases. The reaction is inconstant in general paralysis and tabes dorsalis, although Moore and Noguchi obtained it in sixty per cent. of cases. There may be a marked inflammatory reaction at the site of infection of the central fluid in certain cases of tertiary and hereditary syphilis, and the reaction may sometimes equal that produced at the luetin injection site. Although a positive reaction cannot be obtained in some cases which have been thoroughly treated and believed to be cured, the condition of the skin which yields to the luetin reaction remains but slightly influenced by antisyphilitic treatment.

11. Secondary Syphilitic Meningitis.—Ellis states that syphilitic secondary meningitis may occur early in the disease, or it may be latent for a long time. It is more frequent than formerly supposed, and causes the so called nerve recurrences after salvarsan. Generally the infection of the nervous system has already occurred before treatment is begun. The disease is difficult to reach with curative agents. It has not been proved that salvarsan predisposes in any way to the development of disease of the nervous system.

12. The Wassermann Reaction in Practice.—

Corbus concludes that the Wassermann reaction is the best and most efficient guide in the management of syphilitic cases. Mercury alone and salvarsan alone yield good results, but with the combined drugs we attain these results more quickly. If a permanent result is desired treatment should be pushed smartly during the negative phase.

MEDICAL RECORD.

October 5, 1912.

1. GEORGE RICHTER: Syphilis of Heart and Bloodvessels.
2. CHARLES M. MONTGOMERY: Chlorosis and Tuberculosis.
3. L. PIERCE CLARK: Psychogenetic Convulsions and Genuine Epilepsy.
4. GEORGE W. BEACH: Why General Practitioner Does Not More Frequently Recognize Pulmonary Tuberculosis in Its Incipency.
5. TOM A. WILLIAMS: Criticism of Orthodox Interpretations of Occupational Crampneurosis and Term, Neurosis.
6. J. BENTLEY SQUIER: Action of Electrical Cauterization on Neoplasms.
7. J. H. LEINER: Tics and Their Treatment. Education vs. Hypnosis.
8. LILGH F. WATSON: Method of Anoci Association for Abdominal Operations in Selected Cases, with Nerve Block *à distance*.

1. **Syphilis of the Heart and Bloodvessels.**—Richter presents the anatomical and general clinical features of the vascular system which bear on the method of making a fairly correct diagnosis and the initiation of a rational treatment. The diagnosis of these cases is based upon the same grounds as that of other syphilitic manifestations. There is nothing absolutely characteristic about the syphilitic heart and bloodvessels. When the patient is young, when the lesion is aortic, and especially if it is insufficiency, when the onset is sudden and without fever, thus excluding acute endocarditis from other causes, it arouses suspicion. The Wassermann and luetin tests will remove reasonable doubt. As to treatment, nothing new is suggested.

2. **Chlorosis and Tuberculosis.**—Montgomery considers these diseases, particularly in regard to their supposed relationship, and presents data bearing on this question gathered from forty-three cases of chlorosis. While, at first sight, tuberculosis might appear as a cause for chlorosis, there is at present no satisfactory proof of such relationship. Tuberculosis can be reasonably excluded in a large number of cases of chlorosis. Indeed, most of the cases that have been followed up in after years remain free from tuberculosis. While the two diseases have common symptoms, a marked difference in their relative intensity is usually observed, and prominent symptoms of the one disease are often lacking in the other. The hemoglobin percentage in chlorosis is commonly below seventy; in tuberculosis it is usually higher. The almost specific and rapid action of iron is lacking in tuberculosis. The author suggests that cases in which the chloranemia can be traced to tuberculosis are not fairly to be considered cases of chlorosis.

3. **Psychogenetic Convulsions and Genuine Epilepsy.**—Clark observes that too much has been charged to the mental deterioration of epilepsy and too little to the constitutional inferiority type which gives rise to the disease. The peculiar constitutional defect of epileptics is usually observed in every genuine epileptic year before the history of seizure. Diagnosis, prognosis, and treatment should be based upon the mental and physical make-up of the patient, and not upon the character and frequency of fits. The fit is not the central figure of treatment in epilepsy, however important it may appear; the psychic episode in the psychogenetic convulsions which resemble the epileptic fit may be important and properly engage one's attention in treating the latter affection.

6. **Action of Electrical Cauterization on Neoplasms.**—Squier's studies are concerned with the action of the Oudin or monopolar, and the d'Arson-

val or bipolar current upon malignant growths of the bladder and other organs, and was suggested by the author's unusual experience in a case where the use of the d'Arsonval current was followed by the disappearance of an extensive vesical carcinoma, the details of which case he gives. From experimental work on tumor bearing animals, the author concludes that the current is not entirely harmless; that it does not cause extensive charring of the tissues, and that it does not touch extensions outside the main field of the growth. All the carcinoma cells in a given area cannot be destroyed by direct treatment with bipolar current for fulguration or malignant new growths. The use of the current cannot replace extensive resection in the cure of carcinoma, although it is of value in checking hemorrhage, as in vesical operations. Its action is that of an easily managed cautery.

7. **Tics and Their Treatment; Education versus Hypnosis.**—Leiner concludes that, although a fair percentage of effective cures have followed the educational method of treatment, the history of the obstinate case of tic reported by him suggests that better results would obtain if hypnosis were more often and widely used. The case reported readily yielded to hypnosis, although it could not possibly have been controlled by the classic treatment.

AMERICAN JOURNAL OF DISEASES OF CHILDREN.

September, 1912.

1. FRANCIS F. BENEDICT and FRITZ B. TALBOT: Some Fundamental Principles in Studying Infant Metabolism.
2. J. H. MASON KNOX, JR., and T. P. SPRUNT: Congenital Obstruction of Posterior Urethra.
3. L. T. ROYSTER: Summer Diarrhea, Heat, Humidity.
4. H. LOWENBERG: Hypodermic Use of Hematinics in Anemia in Children.
5. J. R. SNYDER: Pellagra in Children.
6. Progress in Pediatrics. Wassermann-Neisser-Bruck Reaction.

2. **Congenital Obstruction of the Posterior Urethra in a Boy Aged Five Years.**—Knox and Sprunt report a case of congenital obstruction of the urethra with an autopsy. So far as they can find this is the first case of the kind reported in the American literature, though it has not been infrequently described abroad. The obstruction was in the prostatic portion of the urethra, which was converted into a blind pouch by the fusion of the anterior and posterior walls of the urethra. The condition was apparently due to the overdevelopment of the folds normally present immediately distal to the verumontanum. A small triangular opening, the sides measuring three mm., situated in the floor of this pouch, was the only communication with the anterior urethra and through this opening the urine had to pass. It seems probable that the possibility of such a malformation should be considered wherever the cause of the obstruction to the flow of urine is not obvious, especially if there is a persistently distended bladder. A partial obstruction of this nature is compatible with the passage of a normal daily amount of urine, but there may be either increased frequency of micturition or incontinence if the lumen is not absolutely occluded. In most instances the condition could be easily corrected if recognized.

4. **Hypodermic Use of Hematinics in the Treatment of Anemia in Children.**—Lowenberg reports that in the hypodermic injection of hematinics we possess a quick, safe, and reliable means of

treating the anemias of childhood. He finds that a combination of iron and arsenic seems to have a better effect than either alone. Small doses give as good results as large doses. The tonic effect in most cases is noted almost immediately. The injections should be made deep in the loose tissues.

JOURNAL OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

August, 1912.

1. C. B. WYLIE: Systemic Infection through Pharyngeal Lymphoid Ring Calling for Surgical Intervention.
2. W. H. CRISP: Importance of Accurate Refraction.
3. JOHN S. WEAVER: Eustachian Bougies of Fuse Wire.

JOURNAL OF EXPERIMENTAL MEDICINE.

September, 1912.

1. W. H. MANWARING: Nature of the Bactericidal Substance in Leucocytic Extract.
2. HIDEYO NOGUCHI: Pure Cultivation of *Spirochæta phagedenis* (New Species), Spinal Organism Found in Phagedenic Lesions on Human External Genitalia.
3. JAMES W. JOBLING and SOLOMON STROUSE: Ferment Action. II. Extent of Leucocytic Proteolysis.
4. FRANK S. MIERA, T. HOMER COFFEN, and ALBERT C. CRHORE: Comparison of Simultaneous Polygraph and Micrograph Tracings.
5. G. CANBY ROBINSON: Study with Electrocardiograph of Mode of Death of Human Heart.
6. P. A. LEVENE and LEO KRISTELLER: Nitrogen and Nuclein Metabolism in Gout.
7. MARTHA WOLLSTEIN: Duration of Immune Bodies in Blood after Antityphoid Inoculation.
8. LINDSAY S. MILNE: Posthemorrhagic Anemia.
9. CHARLES F. CRAIG and HENRY J. NICHOLS: Complement Fixation in Syphilis with Spirochete Culture Antigens.
10. RICHARD M. PEARCE: Retention of Foreign Protein by Kidney: Study in Anaphylaxis.
11. RICHARD M. PEARCE, J. H. AUSTIN, and E. B. KRUMBHAAR: Relation of Spleen to Blood Destruction and Regeneration and to Hemolytic Jaundice. I. Reactions to Hemolytic Serum at Various Intervals after Splenectomy.
12. RICHARD M. PEARCE, J. H. AUSTIN, and A. B. EISENBREY: Relation of Spleen to Blood Destruction and Regeneration and to Hemolytic Jaundice. II. Relation of Hemoglobinemia to Hemoglobinuria and Jaundice in Normal and Splenectomized Animals.

2. Pure Cultivation of *Spirochæta phagedenis*.

—Noguchi reports the isolation in pure culture from a case of mild phagedenic ulcer on the external genitalia of a woman, a hitherto undescribed spiral organism. As until the present there has been no method by which these bodies could be isolated in pure culture, it is impossible to say whether or not this organism has already been described from a morphological standpoint. This spirochete produces a slight inflammatory reaction in the skin of a *Macacus rhesus* monkey and in the skin and testicles of rabbits.

5. The Mode of Death of the Human Heart.

Robinson reports seven cases in which the electrocardiograph showed that cardiac activity continued from six to thirty-five minutes after all the usual clinical signs of death had occurred. In four cases the ventricular outlasted the auricular activity; in two cases this was reversed; and in one case the two parts of the heart seemed to cease synchronously. The observations indicate that when death occurs from an acute infectious disease there is no one point in the human heart which may be considered as the last part to die.

7. The Duration of Immune Bodies in the Blood.

—Wollstein, on account of the general vagueness concerning the duration of immunity after antityphoid inoculation, made a systematic study of a definite number of individuals for as long a time as seemed necessary. Twenty-four persons who had received the inoculations were observed. The clinical immunity was determined by the reactions of the serum of these cases to bactericidal, opsonic and agglutination tests with the typhoid bacillus. In the series of twenty-four persons inoculated with antityphoid vaccine, the im-

mune bodies in the blood reached their height within two months after the first inoculation, or one month after the third, then fell rapidly within the next two months. Of the nineteen cases that could be followed longer, eight of these were negative for bactericidins within ten months after inoculation, and fifteen were negative after thirteen months. Only one serum reacted in a dilution of one to 1,200 at the end of thirteen months. The addition of lecithin to the vaccine did not influence the local reaction after inoculation, nor did it appreciably affect the formation of immune bodies to the typhoid bacillus. It would seem that reinoculation with typhoid vaccine within a year is indicated when exposure to typhoid fever seems imminent.

8. **Posthemorrhagic Anemia.**—Milne calls attention to the controversy that has existed for a long time concerning the relation of the anemia that follows hemorrhage to that produced by toxins. Various authors have described certain differences which they believe to be fundamental, but according to the experiments here reported the conclusion drawn is that although there are minor differences, all the essential features of anemia produced by toxins can be reproduced by hemorrhage.

Proceedings of Societies.

INTERNATIONAL CONGRESS ON HYGIENE AND DEMOGRAPHY.

Fifteenth International Meeting, Held at Washington, D. C., September 23-28, 1912.

The President, DR. HENRY P. WALCOTT, of Massachusetts, in the Chair.

(Concluded from page 768.)

Doctor STILES and Dr. GEORGE F. LEONARD, of Washington, in a joint paper, mentioned the number of treatments and the number of doses of thymol administered in sixty-one hospitals and twenty-two home cured cases of hookworm infection, and arrived at the conclusion that many cases of hookworm infection were cured by less than one maximal dose for the age group in question. In view of this fact, and because many of the patients were ignorant and illiterate and could not be relied upon to carry out instructions, the authors did not favor the administration of larger doses of thymol for home treatment than the present standard dose. The authors did not believe that treatment alone was a practical method of eradicating hookworm.

The Intercarriage of Typhoid Infection between Urban and Rural Communities.—Dr. ALLEN W. FREEMAN, of Richmond, mentioned the chief factors concerned in transmitting typhoid infection between urban districts and from rural to urban districts. These factors were: 1. By persons, carriers, temporary or permanent, persons in the incubative stage of the disease, and persons actually sick with typhoid fever; 2, by foods and drinks, including water, dairy products, garden truck, fruits, shell fish, and possibly other foods. The principal factors in transferring typhoid infection from urban to rural communities or between rural communities were: 1. Persons infected in the cities or towns and incoming carriers; 2, foods

of various kind; 3, night soil and manure carried out of cities for fertilizing purposes; 4, stream pollution; 5, railway trains.

Prevention of Water Borne Diseases in Lake and River Traffic.—Passed Assistant Surgeon ALLAN J. McLAUGHLIN, of Washington, D. C., stated that in order to prevent water borne disease in lake and river traffic it would be necessary to proceed along the following lines: 1. Popular education was necessary to prevent drinking unpurified surface water. 2. Public water supplies in communities engaged in interstate traffic to conform to the United States standards. 3. United States standards should be based upon the bacterial count and the quantitative estimate of *Bacillus coli*, and should be the minimum requirements to prevent the spread of disease, such as typhoid fever or Asiatic cholera in interstate traffic, the various States retaining the right to impose additional requirements consistent with State laws where such laws existed. 4. United States regulation was necessary, requiring vessels engaged in interstate traffic to fill their water tanks only from public water supplies, certified as safe and conforming to United States standards. 5. There should be inspection of vessels by United States officers and by State and municipal officers duly qualified to enforce this regulation.

Prevention of Venereal Diseases in Armies.—Major DEAN C. HOWARD, Medical Corps, United States Army, said that the United States Army led the armies of the world in apparent venereal prevalence, due in part to the less general application in the army of approved methods of personal prophylaxis, the silence of the war department on the subject, and the consequent general lack of interest and uniform application throughout the army of approved preventive measures.

As valuable measures of prophylaxis applicable to the army, he mentioned: 1. Educational and moral measures, through lectures by medical officers, moral talks by chaplains, informal advice, the distribution of pamphlets on venereal diseases, etc. 2. Recreative features, athletics, soldiers' clubs, gymnasia, reading rooms, and other wholesome amusements in garrison. 3. Physical inspection of all soldiers for concealed cases of disease was essential. This should be done bimonthly. Every known case of disease should be made a matter of record and treated in the hospital. When discharged, the patient should be kept in semiquarantine, and under prolonged observation and treatment to prevent reexposure or relapse. 4. Personal prophylaxis was of greater value than all other preventive measures combined.

The Social Diseases and Their Effects upon the Community.—Dr. HOWARD A. KELLY, of Baltimore, stated that white slavery was the worst plague spot on the social body to-day. It was a worse scourge than cancer and all infectious diseases put together. In money it cost America three billions of dollars a year. In shortened lives, ruined homes, and blasted careers; the loss occasioned by it simply could not be estimated. Where white slavery flourished we would find all forms of vice, the contamination of public officials, and to some extent the breaking down of our system of law and justice. All classes profited from this vice, and its effects were observable in all classes. Not less than

500 newborn infants died of social diseases in Baltimore every year as a result of the transgressions of their parents. The same proportion, he thought, existed in Washington as in Baltimore, and all over the world the conditions were the same.

As a result of years of investigation into this problem, he had arrived at some definite conclusions regarding the cause of white slavery. It was not due to the inherent profligacy of women. In fact, the white slave, who was nearly always coaxed, dragged, or cajoled into her life of shame, was really the poor suffering victim of our civilization. Neither was the man altogether at fault who lived off the earnings of these women, nor did the fault lie altogether with the keepers of the white slave dens, or with the public officials and judges who winked at their existence, contaminated though the latter were in many high stations.

All this vice was a reflex of social conditions, of poor housing, and poor wages. In Baltimore he found as many as eighty per cent. of the women employees in the department stores there received less than a living wage. But even this circumstance was not the fundamental cause of white slavery. He was absolutely convinced that the fault for this traffic in women lay with the people at large. More than to anything else, it was due to the indifference of the public and the churches. He expressed the belief that this evil could be definitely wiped out by men and women of high character if they would go into the crusade against white slavery as a life work.

He urged attacking the problem from all sides simultaneously and at all times. This was church work, and unless the churches took hold the work could not be done. Social workers must drive the church out of its comfortable clublike rooms, and out of its miserable self contentment and its anthems. The church must be recalled to its real work among the poor of the city, and then we must all join hands together—the churchmen, the scientists, and the social workers—and the purity of our civic life was assured.

On motion of Dr. WILLIAM H. WELCH, of Baltimore, a vote of thanks was extended to Dr. PRINCE A. MORROW, of New York, for his pioneer work in fighting white slavery.

Professor M. A. BIGELOW, of Columbia University, supplemented what Doctor KELLEY had said, by saying that sex education would not enforce universal morality in conformity with the accepted code, but it would help in many decisive battles with the instinct of sex.

Dr. CHARLES B. DAVENPORT, of Cold Spring Harbor, N. Y., discussed the social applications of modern principles of heredity, and emphasized the necessity of stopping the reproduction of the unfit.

Mr. HENRY H. GODDARD, of New Jersey, said there were definite limits to the achievement of sex education in the school. We might teach sex hygiene never so well, but there were likely to be in any school one or two boys or girls who could not be reached by teaching themselves, and who would do far more harm to a hundred others than all the lecturing on sex education could ever conquer.

Surgical Sterilization of Defectives.—Mr. BLEECKER VAN WAGENEN, of South Orange, N. J., stated that approximately ten per cent. of the population of the United States were inherently defec-

tive. This ten per cent. of the population were morally unfitted to become parents of useful and valuable citizens, and unless their matings were with improved strains deterioration in family lines was sure to follow. This ten per cent. was an economic and moral burden on the remaining ninety per cent. of the population, and a constant danger to our national and social life. He divided the defective population into nine classes: Feeble minded, in the general sense of the term; pauper classes, which reproduced paupers for several generations; criminal classes, meaning persons with a marked tendency toward criminality; epileptics; the insane, except certain forms of acute insanity which were not reproduced; the constitutionally weak or asthenic class; those predisposed toward diathetic diseases, and the congenitally deformed, those having defective sense organs.

One per cent. of the population was always in custody of some sort, and from 3.5 to four per cent. were just as bad as those in custody. Another five per cent. were hardly above these and constantly likely to fall below the narrow line which separated them from those in custody, whether this was penal or reformatory. These altogether made a total of ten per cent.

From this statement, the speaker passed to the consideration of the remedies as he saw them. He enumerated such remedies as he said had been suggested to the Committee on Eugenics of the American Breeders' Association, of which he was president. These remedies were: Life segregation; sterilization; restriction of marriage laws; education in eugenics; system in matrimony, purporting to remove defective traits.

Closing Session of the Congress.—This session was held Saturday morning, September 28th, at 9:30. Brief farewell addresses were made by the official delegates of the various countries represented, after which the following resolutions were submitted by the International Permanent Commission and adopted by the congress:

1. *Resolved*, That the congress approves the proposition made by the Section in Microbiology and Applied Parasitology, that an International Committee be appointed to consider the methods of investigation, classification, and differentiation, of the organisms of the colon typhoid group, with a view of securing greater uniformity in such methods, and of adopting a provisional standard of certain tests which shall be recommended for the investigation of organisms belonging to this group.

2. *Resolved*, That for the important object of securing the highest degree of practicability in the notification, tabulation, and analysis of the official returns of occupational diseases, it is recommended that such notification and returns shall be made in a uniform manner by international agreement.

3. *Resolved*, Further, that such nations and states which do not as yet provide for compulsory notification of occupational diseases, be urgently requested to do so at the earliest opportunity.

4. *Whereas*, The medical departments of the several navies have no uniform methods of expressing morbidity and mortality statistics, and no nomenclature for causes of disability or any compilation and tabulation of returns; and,

Whereas, The International Classification of causes of death and sickness should form a basis for securing uniformity in all naval vital statistics; therefore, be it

Resolved, That the secretary general of this congress be directed to communicate with the governments of France, Russia, Great Britain, Japan, United States, and such other nations as publish naval medical returns. That it is the sense of the congress that each navy should designate naval medical representatives to confer and recommend uniform methods and tables for expressing international naval vital statistics.

5. *Resolved*, The congress desires that in every country statistics of births, deaths, marriages, and divorces be published periodically and, if practicable, annually. The congress believes that countries, states, or large cities, which publish demographic statistics, need registrars or similar officers, sufficiently trained in medicine and demography to interpret demographic statistics, especially those of the causes of death. The congress believes that provision for the training, opportunity, and appointment and retention of such men is of fundamental importance to public health work.

The congress desires that family statistics, including both children born and living, be gathered periodically in connection with the census.

The congress desires in connection with the registration of births, information in regard to the order of births in families. The congress desires that in every country these statistics be published periodically, and, if possible, annually.

The congress desires that a commission be appointed to report upon the subject of uniformity in criminal statistics, and especially uniform nomenclature.

The congress desires that the International Statistical Institute, at its meeting to be held in Vienna, in 1913, be invited to cooperate in the examination of this subject.

The congress urgently desires all demographers of the several countries to pay special attention to mortality statistics.

6. *Resolved*, That the Fifteenth International Congress on Hygiene and Demography instruct the Permanent Committee of the International Congress on Hygiene and Demography to take all necessary steps for the creation of a permanent bureau for the international congresses in the future.

7. *Resolved*, That the disinfectants used in different countries should be controlled by simple bacterial tests, capable of being easily effected, and that a committee from this congress confer with the committee of the International Congress on Applied Chemistry to define such tests.

8. *Resolved*, That the Permanent International Commission of the Congress on Hygiene and Demography be requested to appoint a committee of not less than five members to represent this congress for the purpose just stated.

The place of meeting of the Sixteenth International Congress on Hygiene and Demography was not decided on, but will be announced later.

Amid applause the congress was declared adjourned.

Letters to the Editor.

THE OPERATIVE FIXATION OF FRACTURES.

PORT ARTHUR, ONT., October 8, 1912.

To the Editor:

Doctor Lilienthal's letter in the JOURNAL for September 28, 1912, invites a brief reply, if only to assure him that my feelings have not been injured, and to thank him for his solicitude concerning them.

That my expressed gratification at having my device found useful, also my confession of indebtedness to him for his description of it and for the cuts which served to illustrate it, were sincerely uttered, I must ask Doctor Lilienthal to believe. Moreover, my letter was not critical to the degree that it was *purposeful* to remove the one lone fly from my honey that threatened to invalidate the whole; this objectionable insect appearing as a probable doubt in the mind of the casual reader as to the identity of the originator of the device in question.

Now, this device has been called the "gimlet method," and if I have taken pains to show that "Taylor's method" and the "gimlet method" are synonyms, it would but indicate an active interest in my own achievement, nothing more. I am not unmindful of the honor implied by having my paper mentioned and my name appear in Doctor Lilienthal's bibliography, but would respectfully submit, that when the bibliography he speaks of is in the "sear and yellow leaf" a little device of surgery possessing simplicity and usefulness might continue to exist and to be wrought with.

WALTER H. TAYLOR, M.D.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Stomatology in General Practice. A Textbook of Diseases of the Teeth and Mouth for Students and Practitioners. By H. P. PICKERILL, M.D., Ch.B., M.D.S., L.D.S., Hon. Stomatologist to the General Hospital, Dunedin, Professor of Dentistry and Director of the Dental School in the University of Otago, etc. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1912. Pp. xii-268.

This will prove a valuable book to the general practitioner to whom, as the author pertinently remarks, "the whole field of dental disease and its treatment is a *terra incognita*." It is likely to be of especial help to the physician in country districts where competent dental treatment is difficult of access. The author gives a brief historical review of the evolution of stomatology and dentistry as distinct departments of medical practice. Succeeding chapters deal with the development, anatomy, and physiology of the teeth and adjacent structures; deformities of the teeth and jaws; inflammatory conditions of the mouth, including periostitis and necrosis of the jaws; gingivitis; dental arthritis, and pyorrhea alveolaris; dental caries, its pathology, symptoms, diagnosis, prevention, and treatment; fractures and dislocations of the jaws; "closure" of the jaws; oral tumors; the manifestations of systemic diseases in the mouth; oral sepsis and its effects; neuralgias and reflex affections; a consideration of local and general anesthesia. An appendix contains a detailed description of the method of systematic examination of the oral cavity, a formulary, and a list of dental instruments useful to the general practitioner.

Of particular importance is the section of the work dealing with the chemical composition of the saliva, the evil results of any marked alteration in its composition and the proper therapeutic management of deviations from the normal. The description of the operation of extraction of the individual teeth is clear and well illustrated by numerous cuts and will be of great help to the practitioner who only occasionally has to do this work.

We note, with satisfaction, that in considering various procedures for the relief of alveolar abscess, the author says: "In any case, there is not the slightest excuse for the old idea of postponing active treatment until the swelling has subsided." The lack of extreme technicality is a great recommendation. The printing and illustrations are excellent.

A Manual of Pharmacy for Physicians. By M. F. DE LORME, M.D., Ph.G., Assistant Professor of Materia Medica and Pharmacology, Long Island College Hospital, New York. Third Edition. With 19 illustrations. Philadelphia: P. Blakiston's Son & Co., 1912. Pp. viii-221. (Price, \$1.25.)

The widening of the field of medicine has necessitated so many additions to the curriculum that pharmacy has become to play a very unimportant rôle in the teaching at medical colleges. Professor DeLorme has the advantage of a pharmaceutical training as a background for his study of medicine, and he is thus in an unusually good position to judge of the pharmaceutical needs of the medical practitioner. He has shown a wise discrimination in the things which he has not attempted to teach in his manual, a book of some 220 pages. His chapter on prescription Latin should not be needed in view of the advanced requirements for matriculation into medicine, but probably is demanded by many medical students. Professor DeLorme wisely devotes the major portion of his work to instruction bearing directly or indirectly on prescription writing with a view to teaching the student how to avoid writing incompatible prescriptions. He seems to appreciate the fact that while the physician must know what suppositories are he need not necessarily be an expert in their manufacture. The work is of convenient size and will undoubtedly serve a good purpose in the instruction of the medical student.

An Essay on Hasheesh. Including Observations and Experiments. By VICTOR ROBINSON, Pharmaceutical Chemist, Columbia University, Member of the American Chemical Society, etc. New York: Medical Review of Reviews, 1912. Pp. 83. (Price, 50 cents.)

This is a subjective and an objective study of the effects of *Cannabis indica*, written with considerable literary skill, so much in fact that we hope perusal of the book will be confined to the medical profession, as the public have already more narcotic drugs at their command than are good for them. Every victim of an unstable nervous system would be tempted irresistibly by Mr. Robinson's essay to try hasheesh. We should welcome the young author to the doctorate, if not to practise, at least to add a needed pen in the fields of the history of medicine and other paramedical subjects; he has a spark of the divine fire, all too rare among medical writers. It is not often that we have the pleasure of reading an essay on a medical subject written with both accuracy and enthusiasm. As the years curb slightly Mr. Robinson's exuberance of style, we shall look to him for noteworthy additions to medical and pharmaceutical literature. We note that by a singular slip, hasheesh is referred to as an "opiate" (p. 37).

Essai sur l'anatomie et la médecine opératoire du tronc cœliaque et de ses branches, de l'artère hépatique en particulier. Par le Dr P. DE RIO-BRANCO (DA SILVA PARANHOS), ancien interne des hôpitaux de Paris. Paris: G. Steinheil, 1912. Pp. 828.

This essay of 800 pages is a monument to the abdominal surgery of to-day. So many operations on the upper part of the abdominal cavity are now being daily performed in the clinics throughout the world that exacter anatomical knowledge of this important area is constantly being demanded by the surgeon. Twenty years ago, cholecystectomy, gastrectomy, and the other operations in this field were surgical rarities and were approached with considerable timidity, and the anatomy of the blood supply and the variations in the location of the vessels was not so exactly known to the surgeon. To-day the finer points in anatomy, especially the variations in the course of such vessels as the branches of the celiac axis and their relation with the viscera in question, are requisite if these operations are to be performed with safety and assurance. The work may be divided into five principal parts: First,

the celiac axis itself; second, the coronary artery; third, the splenic artery; fourth, the branches of the superior mesenteric which anastomose normally or abnormally with the hepatic artery; fifth, the hepatic artery. The latter has received most of the attention, as it has the chief surgical importance. The work is based upon many special dissections, operative surgery observations, and researches in anatomical literature. It is needless to say that the book shows evidence of endless industry and patience. The drawings are well executed and demonstrate most clearly for practical purposes the exactest details of the normal and abnormal location of the vessels in question in relation to the important organs so often the seat of operative procedure. The book will naturally have a limited number of readers, but to those specializing in abdominal surgery it will be of great interest and profit.

Fresh Air and How to Use It. By THOMAS SPEES CARLINGTON, M.D., Assistant Secretary of the National Association for the Study and Prevention of Tuberculosis. New York: The National Association for the Study and Prevention of Tuberculosis, 1912. Pp. xviii-250. (Price, \$1.)

Every clinician should possess a copy of this little manual of practical information on open air sleeping and the latest methods and devices for obtaining pure air in the home. Problems of an eminently practical character come up to all practitioners and this book will enable them to be promptly and efficiently solved.

It is filled with good illustrations, diagrams, working plans, etc., whereby pretty much every need can be met. "Knowing that people under present economic conditions must live in the surroundings fixed (and limited) by their income, it is intended herein to accept living conditions as they are and to point out practical means of obtaining (and appropriating) fresh air with as little trouble and expense as possible. . . . It is a common mistake to confound heat and bad air or cold and good air." There you have, in the language of the introduction, the whole proposition which the author so admirably presents and solves.

Plastische Operationen. Von Professor Dr. PH. BOCKENHEIMER, Berlin. I. Band. Mit 258 zum teil farbigten Abbildungen und 3 Instrumententafeln. Würzburg: Curt Kabitzsch. 1912. Pp. vi-160.

The advances made in the last decades in the subject of plastic surgery have warranted, in the author's opinion an attempt to bring together in one treatise the various operative procedures of this class. The first volume is divided into two parts, the first dealing largely with the principles underlying plastic work in general, and the second with the technique of the operations on the face and oral cavity. The description of the technique is based both on that given in various textbooks and on the work done by the author in von Bergmann's clinic. One of the most striking features of the first volume is the wealth of illustrations, not only in the form of photographs, but also of sketches, the latter being a particularly important aid to a clear understanding of the steps in the technique, and a valuable guide to the surgeon undertaking this work. The subject of cleft palate and its repair receives a special consideration, and the various methods are described very clearly and concisely. Should the second volume, which is to deal with plastic operations in the rest of the body, reach the standard set by the first, medical literature will have been enriched by an unusually able and practical work. It will be a great convenience to the surgeon to find in one book all the standard procedures as well as the latest additions to the technique of plastic operations for the whole body.

Textbook for Nurses. Anatomy, Physiology, Surgery, and Medicine. By E. W. HEY GROVES, M.S., F.R.C.S., Assistant Surgeon, Bristol General Hospital, Clinical Lecturer, University of Bristol, and I. M. FORTESCUE-BRICKDALE, M.A., M.D., Assistant Physician, Bristol Royal Infirmary, Clinical Lecturer, University of Bristol. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1912. Pp. xxiv-407.

This comprehensive textbook, comprising the four subjects indicated by the title, is intended by the authors to supplement the lectures usually given to nurses by the members of the medical and surgical staffs of their respective hos-

pitals. The chief object of the book is to enable the nurse to understand the principles underlying the medical and surgical treatment, also to furnish a basis for the examinations by which their knowledge may be tested. Technical details that can better be taught in practical class work are, very properly, omitted.

The book contains 406 pages, the contents of which are divided into three sections. Following an explanation of descriptive terms with the old onomatology, is section one, on anatomy and physiology, divided into sixteen chapters. Section two is divided into eighteen chapters, one of which is given to anesthesia and shock. Section three on medicine has eleven chapters, concluding with appendixes on clinical instruments in common use; examination of the urine and pulse; determination of the temperature, and counting the respiration; methods of collecting material for the pathological laboratory; some weights and measures in common use.

One important feature of the work is its profuse illustrations, 205 in number, those on the anatomical parts and the eruptive fevers being particularly fine. Brief space is given to the various diseases of rare occurrence, which are not ordinarily referred to in lectures for nurses. The work is complete, and, although originally intended for a textbook, should be most valuable for the purpose of reference in hospital and private practice.

BOOK AND MAGAZINE NOTES.

Dr. J. C. Minor, of Hot Springs, Ark., has issued a booklet with the title, *The Plan o' the House o' Man, Sir!*, which tells in plain language the facts concerning the digestion and assimilation of food. The book is published in the style of a nursery favorite, with grotesque illustrations capably done, while the text is written somewhat on the same plan. We hope none of the more solemnly minded of our confrères' patients took offense at this excellent and amusing piece of fooling, which contains the best of hygienic advice, particularly on sleep and water drinking.

The present generation has awakened to the fact that it would be better for the growing child if the veil which so long has obscured that greatest wonder of Nature, the transmission of life, were lifted by the loving hand of the parent instead by the rude one of an unscrupulous friend. The knowledge to be imparted has been deposited by many writers in a number of books, most of them with scientific aspirations, usually adapted, however, to the mind of the growing child and therefore very poor. The writer of *Nature's Truths Told to a Little Maid*, Margaret Irving (revised edition; New York, The Bookery, 1912. Pp. 57; price, 75 cents), has had the good idea to discard all scientific explanation and put into book form the talks and explanations given to her own growing daughters, for the name of the author is only a *nom de guerre*. The book, therefore, will unquestionably appeal to all thinking mothers, and we recommend it to our readers in the hope that they will gladly advise their women friends of its great value. The book is written so charmingly that mothers will read it aloud to their daughters or permit them to read it by themselves.

The history, organization, and equipment of the Rockefeller Institute for Medical Research comes in a handsomely printed booklet published at the institute. Names of members of the corporation and of the scientific and administrative staffs are given, and a complete description follows of the various buildings and their divisions, including floor plans. The account is complete, but is confined to bare details save in the case of experiments on animals where it is explained that these are carried out with the least possible infliction of pain or distress. Something a little less dry would have been appreciated by the public, we imagine.

The Practice of Medicine, by Dr. Hughes Dayton, which appears in the medical epitome series of Messrs. Lea & Febiger in a second edition will be found an admirable volume for quick reference by the amnesic practitioner, as well as a useful summary by the undergraduate. The paper is good and the typographical appearance excellent, important points being emphasized by the use of bold face type. No doubt this is as good a work as is obtainable in pocket size.

Meetings of Local Medical Societies.

MONDAY, October 21st.—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York; Medical Society of the County of Erie; Elmira Clinical Society; Hartford, Conn., Medical Society.

TUESDAY, October 22d.—New York Dermatological Society; New York Psychoanalytic Society; Metropolitan Medical Society of New York City; New York Medical Union; New York City Riverside Practitioners' Society; Valentine Mott Medical Society, New York; Washington Heights Medical Society; Woman's Hospital Society, New York; Alumni Association of Seney Hospital, Brooklyn; Rome, N. Y., Medical Society; Buffalo Academy of Medicine (Section in Pathology).

WEDNESDAY, October 23d.—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society; New York Society of Internal Medicine; Medical Union, Buffalo.

THURSDAY, October 24th.—New York Academy of Medicine (Section in Obstetrics and Gynecology); Hospital Graduates' Club, New York; New York Celtic Medical Society; New York Physicians' Association; Bronx Medical Association.

FRIDAY, October 25th.—New York Academy of Medicine (Section in Public Health); Manhattan Medical Society; New York Clinical Society; New York Society of German Physicians; Academy of Pathological Science, New York; Audubon Medical Society, New York; Hospital Graduates' Club, Brooklyn.

SATURDAY, October 26th.—West End Medical Society; New York Medical and Surgical Society; Harvard Medical Society; Lenox Medical and Surgical Society.

Official News.

Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending October 9, 1912:

Anderson, J. F., Passed Assistant Surgeon. Directed to proceed to Richmond, Va., and Baltimore, Md., for conference with State boards of health regarding investigations into the pollution of navigable streams in relation to the prevention of typhoid fever. **Brecht, N. D.**, Assistant Surgeon. Relieved from duty on the Revenue Cutter *Manning* and directed to proceed to Angel Island Immigration Station and report to Passed Assistant Surgeon W. C. Billings for temporary duty. **Carrington, Paul M.**, Surgeon. Directed to proceed to Sedalia, Mo., to attend the Missouri State Medical Association exhibition, and to present an address on the prevention of plague. **Draper, W. F.**, Assistant Surgeon. Upon the arrival of Assistant Surgeon J. R. Hurley, relieved from duty at Angel Island Immigration Station and directed to proceed to Washington, D. C., and report at the Bureau for orders. **Francis, Edward**, Passed Assistant Surgeon. Directed to proceed to Providence, R. I., at the request of the health authorities of that city to diagnose a suspected case of plague. **Hurley, J. R.**, Passed Assistant Surgeon. Directed to proceed to Angel Island Immigration Station and assume temporary charge during the absence of Passed Assistant Surgeon W. C. Billings. **McLaughlin, A. J.**, Passed Assistant Surgeon. Detailed to attend a meeting of the Great Lakes International Pure Water Association, to be held in Cleveland, Ohio, October 23d and 24th. **Moore, Dunlop**, Passed Assistant Surgeon. Relieved from duty at the Marine Hospital, Baltimore, Md., and directed to proceed to Ellis Island, N. Y., and report to the chief medical officer for duty. **Nydeger, J. A.**, Surgeon. Relieved from duty at the Marine Hospital, Stapleton, N. Y., and from temporary duty in the examination of arriving aliens at Baltimore, Md., and directed to report to the medical officer in command, Marine Hos-

pital, Baltimore, Md., for duty and assignment to quarters.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending October 12, 1912:

Michie, H. C., First Lieutenant, Medical Corps. Granted leave of absence for three months, to take effect about November 1st. **Mudd, L. C.**, First Lieutenant, Medical Corps. Sick leave extended one month and fifteen days. **Raymond, H. D.**, Lieutenant Colonel, Medical Corps. Relieved from temporary duty at headquarters of the Western Division, and ordered to duty as acting sanitary inspector and assistant to the chief surgeon of the Western Division, during the sick leave of Lieutenant Colonel Charles E. Woodruff. **Sheep, William L.**, First Lieutenant, Medical Corps. Relieved from temporary duty at West Point, on October 10th.

Births, Marriages, and Deaths.

Married.

Ashton—Sullivant.—In Philadelphia, on Wednesday, October 16th, Dr. William Easterly Ashton and Miss Caroline Sullivant. **Ayer—Liecby.**—In Albany, N. Y., on Tuesday, October 8th, Dr. Wardner Daniel Ayer, of Rensselaer, and Miss Edith M. Liecby. **Cook—McCandless.**—In Pittsburgh, Pa., on Saturday, October 12th, Dr. Clifford Franklin Cook, of Poughkeepsie, N. Y., and Miss Leora Margery McCandless. **Davis—Tolson.**—In Vienna, Austria, on Saturday, September 28th, Dr. William T. Davis, Captain, Medical Corps, United States Army, and Miss Renée Tolson. **Elliott—Carr.**—In Danville, Va., on Wednesday, October 9th, Dr. Frank G. Elliott, of Portsmouth, and Miss Laura E. Carr. **Groblewski—Butkewicz.**—In Nanticoke, Pa., on Monday, October 7th, Dr. Casimir Charles Groblewski, of Plymouth, and Miss Lucy Butkewicz. **Howard—Osler.**—In Collingswood, N. J., on Tuesday, October 15th, Dr. John Edgar Howard, of Haddonfield, and Miss Alice Osler. **Kilty—Ryncawicz.**—In Shenandoah, Pa., on Tuesday, October 1st, Dr. Harry F. Kilty and Miss Vonda Ryncawicz. **Moyer—Birkbeck.**—In Freeland, Pa., on Tuesday, October 1st, Dr. Jacob C. Moyer, of Hazleton, and Miss Dolly Birkbeck. **Murphy—Currie.**—In Glencoe, Ontario, on Wednesday, October 2d, Dr. Arthur Irwin Murphy, of Pittsburgh, Pa., and Miss Gertrude Currie. **Nalle—Hurt.**—In Stevensburg, Va., on Wednesday, October 2d, Dr. Orville Nalle and Miss Arabella Bowling Hurt. **Ross—McConnell.**—In Brooklyn, N. Y., on Saturday, October 5th, Dr. John R. Ross, of Ogdensburg, and Miss Martha McConnell. **Towne—Thompson.**—In Saratoga, N. Y., on Thursday, October 3, Dr. George Scott Towne and Miss Mary Thompson. **Turnbull—Chandlee.**—In Washington, D. C., on Wednesday, October 9th, Dr. Samuel J. Turnbull, First Lieutenant, Medical Corps, United States Army, and Miss Helen C. Chandlee. **Whipple—Newlands.**—In Buffalo, N. Y., on Wednesday, October 2d, Dr. Earl Rogers Whipple and Miss Jean Isabelle Newlands.

Died.

Buck.—In Independence, La., on Tuesday, September 24th, Dr. Horace R. Buck, aged eighty-six years. **Clark.**—In New York, on Friday, October 11th, Dr. William Brewster Clark, aged sixty-two years. **Foote.**—In New York, on Saturday, October 12th, Dr. Edward Bond Foote, aged fifty-eight years. **Fortier.**—In New Orleans, La., on Sunday, September 20th, Dr. St. Mark Fortier, aged forty-seven years. **Payne.**—In Charlestown, W. Va., on Wednesday, October 2d, Dr. J. F. Y. Payne, aged seventy-one years. **Rhett.**—In Newport, R. I., on Monday, October 7th, Dr. Henry Johns Rhett, of Washington, D. C., aged fifty-two years. **Whitmore.**—In Oceanic, N. J., on Friday, October 11th, Dr. Walter Savage Whitmore, aged sixty-five years.

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Original Communications.

THE INHERITANCE OF ACQUIRED CHARACTERES.

A Study of the Recent Literature.

By JONATHAN WRIGHT, M. D.,

New York,

Director, Department of the Laboratories, New York Postgraduate Medical School and Hospital.

III.

THE NATURE OF ENVIRONMENTAL INFLUENCES AFFECTING THE GERM PLASM.*

In the last section of this review of biological literature, I led up to a more extended consideration of the influence of temperature on changes in the soma and the germ plasma of living things. I wish to repeat something here of what I had to say on the subject a few years ago:¹

So far as experimental biology has gone, and so far as its testimony may be of value, its most decided positive results have been obtained in showing the effect of temperature upon the physical organization of growing animals. The experiment on butterflies, as carried out by Fischer and confirmed by Morgan, showing the effect upon these insects emerging from the chrysalis state of high and low temperatures, is less open to neoDarwinian criticism than much of the evidence adduced for the support of the belief in the transmission of acquired characteristics. From the observation of the processes of nature itself, the conclusion has been drawn by a neoLamarckian that the wonderful adjustment of critical temperatures to the environment of the species is not to be regarded as evidence of selection, but is due to the modification wrought in the protoplasm by the temperature itself. Weismann indeed ascribes these results, which he also has obtained, to the cumulative influence of the temperature, but his most ingenious theory of germinal selection, which may be easily extended to a chemical conception by calling it molecular selection, aids him in avoiding a neoLamarckian conclusion.

However that may be, he seems compelled here to admit that the environment of the temperature in many instances, both in the animal and the plant world, seem to affect the germ cells as well as the somatic cells—a modification of his early views, which, it seems to me, alters his position totally in principle. . . . It seems certain that the change in temperature, coincident as it has been with the change in the configuration of the surface of the globe, has been scarcely less influential in the birth and shaping of protoplasm. Upon this broad principle of such universal application, we may be fairly sure, depends the quick response of protoplasm to changes of temperature. This is the price of its survival, the ability to live and reproduce in the frigid temperature of the arctic zone—like some of the mosses, and the ability to exist in the

water of boiling springs—like some of the bacteria. Yet through this all is retained that tendency of protoplasm to thrive best within comparatively narrow limits of temperature, which, Quitten insists, was inherited from its birth, and which he has formulated as the law of original thermal constancy, intimating thereby the immensity of time which it must have taken to impress thus indelibly, upon nascent protoplasm, this adaptation to the temperature prevailing at its birth. The temperature of the coldest blooded fishes is but a few degrees below that of the hottest blooded birds, and if this is so for such complex and highly adapted organisms, the survival of naked protoplasm must have been confined to an environment of a very narrow range of temperature, but for an extent of time that defies computation. This oscillation between the narrow limits of life and death at its birth, the first panting of the complex molecule we call "life," by the constant weeding process of almost infinite time, has extended until now it has its supreme illustration of survival within wide limits in the range of man alone from the tropics to the pole.

Thus we may explain the frequency with which we note in recent biological experiments, that temperature is the agent successful in producing mutations or variations, by the assumption that germ plasma in general has been trained or selected (as you please) to vary under this influence from the time of its primordial creation. Certain chemical compounds seem to have, in all probability, been selected for survival by virtue of their power to take on, and to shed off certain receptors, in the language of Ehrlich, under the influence of temperature. Van't Hoff and Arrhenius have drawn attention to the fact that, in a general way, an elevation of 10° C. doubles or trebles the rapidity of chemical reaction. It is said that the coefficient of the temperature of chemical reactions is at least two for 10°; this being the characteristic of chemical reaction, when it is shown, as it has been by Snyder, Maxwell, Loeb, and others, that vital reactions increase in efficiency in about this proportion, it seems a strong argument that chemical reactions are the chief ones with which biological processes are concerned, since those reactions we are accustomed to call "physical" do not increase in any such proportion with the rise of temperature.

We may well believe it is this pulsation back and forth of the molecule between two slightly different chemical states, which has finally grown into that manifestation of force which we call "life." While the heredity, while the persistence with which forms of life are repeated, is still enshrouded with mystery, we can only conjecture that this conception of scientists in regard to the beginnings of life contains the essentials of the truth. Some such formula in regard to any problem must exist at the back of every biologist's mind, or else his mental machinery would stop. It is quite conceivable,

*Read at the Seminar of the Staff of the Laboratories, May 1912.

¹The Tonsil from an Evolutionary Point of View, NEW YORK MEDICAL JOURNAL, August 8, 1908.

therefore, that there may be a specific atomic arrangement within every molecule of the germ plasma to correspond to the specific variation in the morphology of the fully developed animal.² The variations possible in this stereochemical formula would then represent the inheritable possibilities in each living thing. Again I must insist, we must either imagine that this atomic arrangement varies with the environment, or that the whole thing is suprasensual or metaphysical, beyond mortal ken, for we are not familiar with any chemical arrangement which is not influenced by its environment. Therefore, the impact of environment upon this theoretical architecture must have its effect, and with this conception of the foundation of life, as with every other, we are brought back to the long existing strife. Manifestly, even the number of variations possible in any permanent stereochemical formula, almost innumerable as they are, would seem quite insufficient to account for the variations in the visible and in the invisible morphology of every individual since the primordial bit of protoplasm began to live. We can entertain this chemical conception only with the proviso that the chemical formula has had from time to time something added to it, or taken from it, by the environment—that evolution is a continual epigenesis. The purely materialistic view of life seems to break down if we are to accept even that part of Weismannism which looks upon the germ plasma in its essence as immortal, that is, that the primordial chemical formula with which life began, still persists in all its manifestations. We must perforce, therefore, imagine that the germ plasma, even in its essence, is continually shifting under the influence of something. It is a mere truism, almost a play upon words, to say that that "something" is its environment. If not, we may try to satisfy ourselves with Bergson's directive influence which has been attracted to the nascent molecule palpitating between the living and the nonliving state, or we may accept Driesch's more pantheistic view of an entelechy, being the inherent characteristic of living matter, which from the beginning separates the living from the dead. Now this is exactly the status of Weismann's declaration, of a quality inherent in living matter which causes it to vary in all directions. Thus the theory of Weismann, no less than that of Bergson or of Driesch, is founded upon vitalism. It is in essence metaphysical.

THE SOCIOLOGICAL SIDE OF BIOLOGY.

This contest in regard to the inheritance of acquired characters, so bitterly fought almost exclusively in biological circles now for a generation or more, bids fair to emerge more plainly into view in sociological, and eventually in political discussions. Indeed, this to some extent has already occurred.³ The question is whether or not natural selection, whether or not the ruthless wheel of Juggernaut is the only method by which social progress can be made, the cruel weeding out of the

unfit being largely the method of the past, and still existing in everyday life. The inference is to be found plainly in many a biological paper, and that of Doctor Davenport on the Origin and Control of Mental Defectiveness⁴ is by no means exceptional. This paragraph may be quoted as stating the question with sufficient clearness:

This brings us to the subject of the control of mental defectiveness. We see at once that there must have been at work, even in prehistoric times, a sort of natural control by the elimination of those incapable of meeting the ever increasing complexities of "advancing civilization." As man spread to the north, those strains which had not acquired the trait of hoarding for the winter mostly perished of cold and hunger! those strains which had not acquired the sense of property rights, and tended to invade the stores of others, were always in danger of being cut off. In England, less than a century ago, there were 223 classes of offences punishable by death. Under such rigid selection "defective" ancestral strains tended to be eliminated.

To-day, in our most highly civilized countries, the process of elimination of the unfit animal strains is largely reversed. We protect, in an institution, the members of a weak strain up to the period of reproduction, and then let them free upon the community and encourage them to leave a large progeny of "feeble minded"; which in turn, protected from infantile mortality and carefully nurtured up to the reproductive period, are again set free to reproduce, and so the stupid work goes on of preserving and increasing our socially unfit strains.

It is very plain to us all, from any point of view, humanitarian, scientific, ethical, or what you please, that civilization has made what we are wont to call progress since the time when in England "there were 223 classes of offences punishable by death." Common sense, the general consensus in civilized humanity, has resulted in an abolition almost complete of the death penalty in modern jurisdiction. Frederick Harrison, in his autobiography, rejoiced to admit that among more dubious changes for the better capital punishment had markedly decreased in England and with it crime in the last sixty or seventy years. From the very dawn of cooperation between man and man, even among the brutes, it has been found that extirpation of the weak by the strong is not always beneficial, even to the strong. It may be true that certain unsocial traits are, as Davenport intimates, due to pure descent of the characteristics which we are said to have derived from apelike ancestors, but this is more easily asserted than proved. From a Mendelian point of view it seems rather attractive, but after all, the idea that any material segregation of matter can have descended for a million years or more unaltered by the environment is, as I have insisted at length in the previous paper of this series, unthinkable to any one but a vitalist. Indeed, the very definition of what is unsocial varies with the social unit. To kill and eat one's mother-in-law may be in some benighted tribes a social virtue of the highest order, but in the progress of civilization we have in our own social fabric but faint traces of this primordial instinct.

There is many a practical difficulty that arises when we consider the question of artificial selection in man as an aid to natural selection. They are chiefly owing to the vast complexity of social as well as of biological phenomena. If we are going to wipe out that strain in the race which is sup-

²R. Fick: Ueber Vererbungssubstanz, *Archiv für Anatomie und Physiologie*, iii and iv Anat. Abt., p. 101, 1907.

³Since this was written, the tendency to inject neoDarwinism doctrine in biology into sociological discussion is seen most recently in Bateson's Herbert Spencer Lecture, *Biological Fact and the Structure of Society*, Clarendon Press, 1912, for this year, but as I am acquainted with it only from a hostile review I can do no more than refer to it.

⁴*Popular Science Monthly*, January, 1912.

posed to be the recruiting ground for the criminal or the defective, for the alcohol habitué or for the moral degenerate, we must be sure that from that *strain* under proper environment (not necessarily from that individual under proper environment, but from his *strain*), there can spring nothing of great material benefit to humanity. It is very doubtful whether Mendelian science will ever be able to help us thus to separate the sheep from the goats. The neurosis of the periodical inebriate in one generation under a certain environment, in the next generation, even with the same environment, is very likely to furnish for us brilliant benefactors of the human race. It has become almost a maxim that insanity and genius are akin. Now such a phenomenon as we call genius, and frequently insanity itself, it is true, are often really products of the environment, but even making allowance for this, there is probably a certain amount of truth in the belief that the genetic germ of genius and that of insanity are closely related. It is true, that we can breed, by proper selection, a race of horses for draft purposes, and another race for swiftness of pace, but when we come to contemplate the multifarious activities of mankind, how are we going to satisfy all the demands which future civilized man must meet in order that, not only there shall be social progress, but that the civilization already attained shall continue? How are we going to breed, by artificial selection or by allowing again the full play of natural selection (for these are the two methods and the only two methods left to the ultra-Darwinian), a race of men so diverse in its component parts?

Science has nothing to do with ulterior aims; it accepts things as they are. Because natural selection may not be what we are pleased to regard as a good social instrument for our aims, has nothing to do with the argument as to whether or not it is Nature's sole method of evolution. This being well understood, it does no harm to point out, that sociologically such a view as that which refuses to regard the germ plasm as modifiable is a doctrine of despair. In eugenics, in the effort of humanity to rid itself of its own antisocial strains, the question of the transmission of somatic modifications is all important. If, by modifying the environment of the phthisical or of the habitual criminal, we are to accomplish nothing for his offspring, the outlook is indeed gloomy. Offspring more and more susceptible of phthisis and crime will be born, so that the environment which we might succeed in rendering safe for one generation would be less so for the next, without the weeding out process.

According to the ultraDarwinian point of view in sociology then, eugenics *must* turn to the weeding out process. Manifestly we cannot return to the Spartan method of casting the nascent weakling into the nearest duck pond. We cannot even return to that stage of society in which the "law recognized 223 capital offences." Indiscriminate destruction by the wheel of Juggernaut, abolition of our sanitary precautions even, would blunt those humanitarian feelings on which fundamentally the whole fabric of modern progress rests. Civilization has advanced so far as it has almost solely because

the strong have protected the weak. From the very dawn of civilization man has acted without regard to the principle of natural selection, so far as he has made conscious efforts. It has been only through his ignorance or self admitted neglect, that he has permitted the survival only of the fittest. Naturally then, we cannot return to the state of Nature where every man was for himself and the devil got the hindmost, for the glory of man if not for the glory of God. We must, therefore, if we meddle with the *phylogeny* of the race, be kind to its *ontogeny*. We will assume that depriving a certain part of the human race of the power of, or opportunity for procreation is not necessarily being cruel to it. Rendering the wire edge of human tenderness a blunt instrument for evolution would be in itself a fatal error.

Since it must be admitted that we cannot turn back the hand of the clock a half million years, as eugenic ultraDarwinists, we must select, not by destroying the unfit, but by rendering them incapable of breeding, or by withdrawing them from the breeding pen. When eugenics has passed the stage of theory and discussion, and has entered on that of practice; when man avowedly and consciously selects, it will be necessary for him to do as the horse breeder does, select with an eye to style, or strength, or speed. In other words, he must breed for the next generation and for many succeeding generations, guided only by the ideals of the generation in which he lives. Like every effort which man has made to lift himself up by his own boot straps, this is at once seen to be impracticable, in fact manifestly against the eternal laws of the Universe. We lie helpless in the hollow of the hand of Destiny. Man is not a god.

The ideals of one generation are not those of the next. The ruthless warrior cutthroat is no longer the beau idéal, even of feminine fancy, in the twentieth century, but he was in the tenth century. The thief and the murderer, the atavistic being of Davenport's theory, was in his element then. I presume the descendants of Cicero and Æschylus and Plato and Phidias appeared atavistic to the man of the middle ages, if any such remained exhibiting ancestral traits. At least the robber barons of Alsace and of Picardy would have thought it unsafe to breed that strain of men. I need not pursue this train of thought further; our imaginations easily allow us to comprehend the difficulties.

Yet, after all, it is only necessary to proceed one step at a time along the path of eugenics. I am sure not even the most ardent neoLamarckian would object to our adopting some means by which idiots and epileptics might be restrained from procreation. We must remember that Galton, in establishing the chair of eugenics at the University of London, expressly disclaimed any intention of urging any immediate resort to legislation looking toward either asexualization or selective mating. It was simply the initiation of an effort to attempt to influence people to take as much interest in the breeding of men as in the breeding of horses. Yet I have thought it not unprofitable to draw attention to the fact, that while we have bred race horses largely on the principles of artificial selection, civilization has advanced to its present state chiefly

through attempts to thwart the workings of natural selection.

THE PLACE OF ORTHOGENESIS IN THE VITALISTIC ARGUMENT OF BIOLOGY.

There has been much discussed in biological literature of late years the phenomenon of orthogenesis. While the phenomenon has been broached in many discussions in some form or other since the early Darwinian epoch, it has come more prominently to the fore of late years chiefly in the criticisms which neoLamarckists and neovitalists have directed against Weismannism. It has been almost universally recognized by Darwinist and Lamarckist alike, that there is a tendency for evolution to take certain lines of development, and that this tendency often persists beyond physiological needs in the creation, for instance, of the long tail feathers of Japanese domestic fowl, or the monstrous combs of some of our own varieties of chickens. This is the more evident, because artificial means of selection have annulled in these instances the usual check of natural selection, but instances are also cited from wild life in which such persistent tendencies have even resulted in the extinction of species, as for example the extinct Irish elk, whose mighty horns are supposed to have wrought his destruction as a race.

Evolution advancing along fixed lines of development, many of them apparently inexplicable on grounds of benefit to the race in which the tendency is noted, naturally gives rise to theories of a guiding force of a metaphysical character, but not necessarily purposive from a human standpoint.

There is a curious analogy between some of the manifestations of orthogenesis and the progression in octaves of the chemical elements in the system of Mendeleeff. The chrysanthemum has been stimulated to a progressive development of petals from a comparatively simple flower. From year to year, plants have appeared with more and more petals to the flower. Blaringham draws attention to the fact, that they do not present a haphazard evolution in the increase of their numbers, but the mean numbers in progression are in a definite ratio of increase as $5 + 8 + 13 + 21$, or some modification of it, suggesting an addition at each increase of previously reached means. This is simply another indication of the survival of the ancient argument for epigenesis. It is also another hint that perhaps Loeb and others are right in maintaining a chemical origin for all life process.

Necessarily the medical man is chiefly concerned with the observations of somatic activities, and this is especially the case in the study of pathology. Unless he can apply to the activities of the somatic cells certain principles which govern the germ plasm, unless he can bring certain somatogenetic phenomena into line with the phylogenetic, it is quite impossible for him to proceed very far in the explanations of problems he meets daily. It is true that orthogenesis in biology has a phylogenetic significance, but it is quite clear that we can note in ontogeny also the workings of the phenomenon. In phylogeny, the enormous increase in the bulk of many of the extinct animals as revealed by paleontological research, the monster horns of the Irish elk to which I have referred, the tremendous curve

of the canine teeth in some animals, are examples of this process which has been called by a recent writer "the momentum in evolution."⁸ To this I shall refer shortly in another connection. The congeries of symptoms, whose most striking feature is the hypertrophy of certain parts of the body, and which we call acromegaly,⁹ has been shown to be due to the loss of that inhibitive influence or ferment in the circulating fluids in the body which is supposed to have its origin in the pituitary gland. Others of the closed glands present more or less of the same phenomenon. We have had to invent a hypothetical fluid to round out what we have learned from physiological observation into a comprehensible theory. These fluids we have called "hormones." The lack of these in acromegaly, due to some lesion or abeyance of physiological function in the pituitary gland, is supposed to account for the hypertrophy of the bones of the face and of the extremities. It is but a step, and this step has been taken by some, to the conception of the same etiology for benign tumors. This process of reasoning (I am almost tempted to call it, this flight of imagination) has been applied by Denny to the phenomenon of orthogenesis in paleontology. He supposes some physiological lack of the hormones to have permitted the gradual growth of the bulk of the elephant and the mastodon, until they have surpassed in size the limit permitted by natural selection. Consequently, such races have perished, or are perishing, by virtue of their own bulk, just as in ontogeny certain individuals perish by virtue of the pathological phenomena, or the physiological overgrowth, as you please, induced by the lack of that inhibition which keeps living beings in harmony with their environment. I am free to confess that this all seems to me more like a *jeu d'esprit* than like scientific deductive reasoning. However, it may have its use in a stimulating way as a fruitful influence upon scientific thought.

The principle of momentum, a fundamental phenomenon of physics, has been invoked, it seems to me, in a much more useful way in an attempt to furnish some sort of conception, even though it is no more than a parallel, for the inexplicable phenomenon of heredity. We know nothing of life, except through the interchange living things carry on with their environment. If we are led to infer then, that such momentum, such heredity as life has, comes from its environment, what of the guiding principle that keeps it along one track in orthogenesis? Now we are in a position to see why the neovitalists urge the phenomenon of orthogenesis as an argument for their belief. We see the force, metaphysical as it may be, of the passage I quote from Bergson. *Heredity* in his view does not only transmit characters; it transmits also the *impetus* in virtue of which the *characters* are *modified*, and this *impetus* is *vitality itself*.

In spite of the most rigid natural selection, certain sports, continue to appear from time to time among animals, wild and domestic. In spite of

⁸Nature, December 28, 1911, paper read before the Section in Zoology of the British Association, at the Portsmouth meeting, by Professor Arthur Denny, F.R.S.

⁹True acromegaly is said by Penda to be always associated with hypertrophy or tumor of the pituitary gland only when it is due to an increase in the parenchyma cells of the organ. If this is true, we may pause a little before accepting the view that the lesion results in a loss of inhibition control.

constant weeding out, certain characteristics of plants persist as obstinately as the tails of mice. Indeed it is said¹ "that sport variation is more likely to occur in connection with repeated selection and in the same general direction as the selection." So familiar are we with the phenomena of heredity, that it does not always occur to us how mysterious it is. By analogies, by circumlocution, by logomachy, we delude ourselves into believing we know something of it, because we can ascribe certain phenomena to it as antecedent, influencing it, or as sequences due to it, but as a matter of fact we know absolutely no reason why all matter retains imprints of past experience, and living matter tends to move in a general way along certain fixed lines. This impetus to move along certain lines, beyond the demands of physiological needs, resulting frequently in the extinction of races by the operation of the law of the survival of the fittest, we designate in biology by the term "orthogenesis." It is useful, however, to look upon it as part and parcel of the fundamental mystery of heredity, an exaggeration of it, if you will. The impetus living matter has received, somehow from somewhere, has given it a momentum to move along certain lines to its own destruction, but this is only an exaggeration of heredity, the tendency of like to produce like. Left to itself without the impact of environment, to influence it toward deviation or variation, with a perfectly steady environment, without heterogeneous mating, living matter tends to keep along fixed lines, but it loses momentum and finally perishes. In breeding, the lack of climatic change, lack of exercise bodily and mental, is followed by stagnation and annihilation.

As an example of the persistence of a tendency to vary in a certain direction, in spite of selective weeding out, we may instance the sugar beet; for centuries those plants have been eliminated as seed producers which bloom the year they are planted. Through a defective chemical composition, Blaringhem suggests such roots do not furnish much sugar, are tough in fibre, and unfit for food for cattle. Notwithstanding the long continuation of this rigid selection, such plants continue to be reproduced in a certain proportion, year after year. The cancer cell, as I have repeatedly urged, in spite of its derivation from a somatic cell, may be looked upon as such a mutation. When it appears in any individual, it almost always perishes with the individual. Its own strain of somatic cell inheritance invariably perishes, yet as in the sugar beet, the germ plasm of the human race perpetually reproduces the type of somatic cell which gives rise to the mutation. Marie, Clunet, and Raulot-Lapointe² have shown, experimentally, that the morphological modifications which several generations of neoplasm cells have undergone from the incidence of x rays, are transmitted to descendants or daughter cells after the latter are withdrawn from the influence of the x rays. Thus "x ray cancer," so similar to spontaneous cancer in its morphology, and occasionally in its prognosis, becomes a suggestive hint of the essentially fundamental nature of real cancer as a biological mutation.

While variation, upon which, in the heyday of ultraDarwinism, natural selection was supposed to seize for evolutionary purposes, was thought to be in all directions, it has become apparent that the same wide variations, sports, or saltations, recur from time to time in the phylogeny of the race, even though they are not atavistic. The purest breed of barred Plymouth Rock chickens will produce a white chick about once out of a hundred eggs. Some of these apparent instances of constantly recurring sports Mendelism has explained, but there is a vast amount of evidence which still holds good. Therefore we may say, there is a momentum of heredity to be observed even in its deviations, and the recurrence of these mutations constantly weeded out by natural or artificial selection are examples of "abortive" orthogenesis. No biological theory explains the phenomenon.

The endeavor I have made to set clearly forth the dynamical view, entertained by neovitalists, of the nature of life and of heredity, reminds me that this mystical differentiation is older than history. It has been recently shown by archaeologists that in old Egypt, nearly 1,500 years before Christ, about the time the Ebers papyrus is supposed to have been compiled, there was a religious reformation and the new god, Aton, which was set up for awhile, represented "the essential feature which separated him from all other solar gods, and it was this,—that he was not the Sun itself, but the motive power behind the Sun. He was the energy, the Life of the Sun."

What is this but our own problem? The Weismannian emblems of determinants and ids, the biophors and the biogens, cannot long satisfy the scientific mind groping after truth, any more than it satisfied those minds seething with the ideas of a nascent civilization which lay at the foundation of later Greek thought. Aton, indeed, and many a god after him, fell from the shrines at which men worshipped, but in the internal phenomena of the cell we find the old problem. We may well suspect it is insoluble. The only quarrel we should have with the neovitalists is a refusal to ascribe a quality to the Infinite, and thus to attempt to define the indefinable. Such attempts have always, in the history of thought, ended in our ultimately discovering, that that which was ascribed as an attribute of the Infinite is a thing quite incapable of finite comprehension. This is the answer to make to the biological theories of Bergson and Driesch, and the entelechies of the latter are not a whit more metaphysical than the determinants of Weismann, or his germ plasm, unaffected by the environment.

MEMBRANOUS PERIENTERITIS.*

BY ARCHIBALD E. ISAACS, M. D.,
New York,
Surgeon, Beth Israel Hospital.

Recent observation has shown that membranous pericolicitis is, in many cases, the cause of symptoms on which the diagnosis of chronic appendicitis

¹Castle: *Science*, p. 508, March 20, 1912.

²Bulletin de l'Institut Pasteur, xi, 7, April 15, 1912.

*Read before the Section in Surgery, New York Academy of Medicine, May 3, 1912.

is made. Though frequently associated with chronic inflammation of the appendix or other viscus, and probably secondary to it in many cases, it develops, in the course of time, into a distinct process with manifestations and symptoms of its own, which are usually sufficient to distinguish it from appendicitis or other inflammatory conditions, even if such be present at the same time.

The increased amount of operative surgery, especially abdominal, done in recent years, with the consequent greater opportunity afforded for direct observation, on the living subject, of the conditions causing his observed symptoms, has been the means of increasing our knowledge of this as well as of other conditions previously not understood, or the significance of which was not recognized. The more laparotomies performed, the more opportunities for observation and the more knowledge acquired as to conditions amenable to operative treatment.

The right half of the abdomen, beside its kidney, ureter, tube, and ovary, common to both sides, has, in addition, the appendix, ileocecal portion of the gut, liver, gallbladder and its ducts, head of the pancreas and its ducts, and the pyloric portion of the stomach and duodenum. Each of these is subject to its peculiar affections, and the right side is therefore by far the more frequent seat of the disorders of the abdominal region.

It is often difficult, and at times impossible, to determine which one of these organs is responsible for the existent disturbance. In the absence of clear signs to the contrary the appendix is usually made the scapegoat, and is generally blamed in chronic abdominal ailments, particularly when the symptoms are referred to the right side, or even when referred to any other portion, especially if there is tenderness in the appendix region.

Among the conditions that simulate chronic appendicitis in this way, is what has been called pseudoperitoneal adhesions, Jackson's membrane or, in reference to different locations, Lane's kink, gall spider adhesions, and membranous pericolicitis. The process should rather be termed membranous perienteritis, for, although its most frequent seat is about the colon, it occurs about various other organs, as indicated by the various designations mentioned.

Though it is some years since attention was first called to the existence of this membranous formation, it was until recently viewed as an unusual occurrence occasionally encountered, and no importance was attached to it. When affecting the lower ileum or colon, its symptoms resembled those of chronic appendicitis so closely that it was generally diagnosed as such, and, when operating, the surgeon was satisfied with the mere removal of the organ suspected, without looking further for possible cause for the symptoms. The real lesion was thus overlooked, and with recovery from his operation the patient resumed his previous condition of abdominal discomfort and pain.

Among the earlier writers the condition was occasionally referred to, but Jackson's communication on the subject, published in 1909, was the first real description, and the one which called the attention of the profession to the frequency and importance of the condition. Observation on the living subject

has shown the frequent presence of what might be called a pseudoperitoneal membrane, lying over and loosely attached to the serosa of the gut, and generally extending to the parietes, thus limiting the normal mobility of the viscus. The appearance of the membrane is usually that of a very delicate, veillike, transparent film, with its main strands running in a general direction across that of the axis of the gut on which it lies. These bands or fibres are comparatively firmly attached at their ends, usually one to the parietes and the other to the gut, but the body of the membrane is attached so loosely to the serosa that the gut is freely movable under it. In this delicate mesh of membrane there are often one or more bands of more dense tissue, attached by one end to the abdominal wall, from where they radiate, fanlike, over the intestine, or, beginning at the intestine, radiate to the abdominal wall. The centre of the fan is the more dense and the outer radiations gradually become lighter until they fade away. These bands are likely to cause obstruction, more or less marked, by kinking the gut, or by constricting its lumen, or by drawing it into rotary displacement, or by any combination of these effects. The veillike membrane, independently of the denser bands, may have similar effects in a milder degree, or may form a sort of pouch within which the intestine is freely movable but confined, as though more were forced into the bag than it could comfortably hold. Again it may not surround the intestine, but, attached to the parietes on one side, it may extend over a portion of the gut circumference and thus bind it down, with rotary displacement and diminution of calibre, the latter due to infolding of that portion of the gut wall covered by the membrane whose area is smaller than the normal area of the gut it overlies.

The anterior longitudinal band of the ascending colon seems to be the favorite seat for firm attachment of the more dense bands. From here they usually run outward and upward to be again attached to the parietal peritoneum at a much higher level than that of their origin on the colon. At times they run directly across to the parietes, but rarely downward from their colonic attachment. In cases where the transverse colon turns down at the hepatic flexure, to run back parallel to the ascending colon, the greater omentum, on a line near its origin from the transverse colon, will be found attached to this same longitudinal band, by new membrane holding the two sections of colon together. This doubled colon is then enveloped in a pouch of perienteric new membrane, attached to the outer parietes which limits the normal mobility and causes kinking at the hepatic flexure, very often sharp enough to cause partial obstruction of the lumen.

The etiology of the production of the membrane is not yet settled. Some have held that it is non-inflammatory, among them Lane and Mayo, the former that it is secondary to enteroptosis with chronic constipation, and the latter that it is a congenital condition. Lenander credits it to a colitis in infancy. Binnie, in 1905, and others to date, argue that it is secondary to chronic colitis, and he, as well as those previously mentioned, aver that the appendicitis which is so frequently associated with it, is the result of the pericolicitis and not the cause

of it. Others consider appendicitis or colitis to be the cause. For the time being and until further investigation establishes the etiology, we must draw our own conclusions from observation of conditions as found. My own experience leads me to believe that the formation of the membrane is secondary to ulceration or inflammation in the gastrointestinal tract, or in other peritoneum covered viscera. It results from the reaction of the peritoneum to the irritation of septic material carried to it, through the lymphatics, or directly from the intravisceral lesion. A mild grade of productive fibrinous peritonitis is set up, and organization of the exudate forms this filmy membrane, which contracts in its development, as newly formed fibrous tissue always does. The continuance of the source of irritation keeps up the process and, with the additional organization of new tissue, the denser and more contracted fibrous bands are formed. The kinking and obstruction resulting from these bands, by interference with function and circulation, encourage the process, and thus a sort of vicious circle is established, resulting in progressive development of the condition.

The theory that the process is due to irritant absorption from intravisceral sources is supported by the fact that the regions in which it is most frequently found correspond to the regions where ulceration of the gastrointestinal mucosa is most common. These regions are about the appendix, noted for its liability to ulceration; along the large intestine where colitis, of catarrhal or ulcerative nature, is very common; at the distal portion of the ileum, the favorite site for ulceration in enteric fever; about the region of the duodenum and pyloric end of the stomach, where ulcer is a common occurrence, and where the gallbladder above and the transverse colon below add to the liability of local trouble.

Some of the cases reported herewith show the evident relationship between endoenteric ulceration and perienteric new membrane, or at least show the coexistence of both under circumstances where cause and effect seem evident. Excluding cases due to appendicitis, which is the most common cause, I will refer to four due to such a variety of conditions as ulcer of the cecum, ulcer of the duodenum, pyonephrosis, and cholecystitis.

In Case VII there was an extensive inflammatory infiltration of the cecal wall, with patches of fibrinous exudate on the outer surface, and with a central marked induration, undoubtedly the base of an ulcer within the cecum. The picture corresponded to that of the well marked indurated ulcer more commonly seen in the stomach. The cecum about this region was covered by new membrane and bands, extending to and including a small portion of the proximal end of the otherwise normal appendix. Upward, the membrane extended onto the ascending colon, but left the hepatic flexure and transverse colon free, so that the ulcer was central to the area of new membranous formation. Though in an acute state of inflammation at the time of the operation, the ulcer was apparently an old one, which had existed in a more quiescent state long enough to have caused the formation of the membrane by its continued irritation.

Case XIII was under treatment in the medical ward of the hospital for duodenal ulcer when an acute attack of appendicitis developed. The operation for this condition afforded the opportunity for exploration, which demonstrated the presence of the ulcer at about the junction of the first and second portions of the duodenum. The serous surface opposite the ulcer was the seat of a localized inflammation, productive of a red, spongy, thick membrane with an irregular villous surface, resembling granulation tissue, but without its raw and bleeding surface. Beside this, there was an abundance of the usual perienteric new membrane, with well organized bands, binding the hepatic flexure and the adjacent part of the transverse colon, and the duodenum to the under surface of the liver. The gallbladder was completely covered in by these organs, which were drawn together over it by the membranous bands. Here was a duodenal ulcer of long standing, central to an area of membranous perienteritis, evidently also of long standing. There was no membrane along the ascending colon, but at the site of the appendix, where there was another and comparatively recent inflammation, a very delicate veiling, also apparently of recent formation, was found about the base of the appendix and extending onto the adjoining part of the cecum.

Case XIV was one of pyonephrosis due to stricture of the lower ureter. The operation was transperitoneal, permitting good observation of the parts. The hepatic flexure was displaced forward and inward by the large bulk of the distended and inflamed kidney stretching the outer layer of the ascending mesocolon forward. On this mesocolon there was an area of perienteric new membrane extending around the convexity of the hepatic flexure, and over a portion of the surface of the large gut. The affected region was directly over the inflamed kidney and was the only place where new membrane was found.

Case XI was one with a history of recurrent attacks of pain, referred to the upper abdomen, for a period of ten years, accompanied at times by jaundice. Though there was no distinct history of appendicitis, there was sufficient evidence, before operation, on which to diagnose appendicitis in addition to cholecystitis. This, with the operative findings of a distinct appendicitis, makes it look probable that some of the previous attacks were appendicular. There were membranous bands and adhesions about the distended gallbladder, reaching from it to the transverse colon and hepatic flexure, and extending down the outer side of the colon to coalesce with another set of membranes most marked in the appendix region and extending upward on the colon. Here were two distinct inflammations, one of the gallbladder and one of the appendix, both of long standing, and each one of these organs was the centre of an area of perienteric membranous formation.

For convenience of description the cases may be divided into classes, according to the location of the membrane and, incidentally, in relation to its cause.

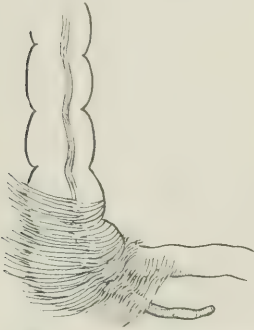
1. Membrane about the appendix and neighboring portions of the cecum and ileum. This is very commonly found and is a recent condition, and not



CASE I.—Large mass of hepatic flexure of colon; duodenum also involved; down

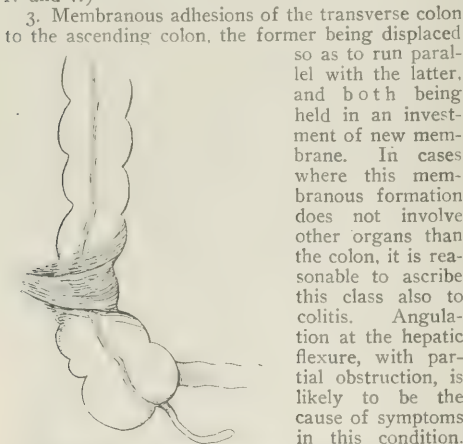
ileum. Contraction of bands across the cecum or ascending colon may cause kinking and partial obstruction. Cases II, III, and X belong in this class. (See sketches of cases II and X.)

2. Membrane about the ascending colon, extending to the cecum below, and to the region of the flexure above, with bands, in advanced cases, binding the gut down, reducing its calibre, and rotating it on its axis. With the appendix free below, and the duodenum free above, we must conclude that the irritation in this class comes from within the colon, either from an ulcerative or



CASE II.—New membrane about region of appendix.

catarrhal colitis. Case VIII proves that an ulcer can cause such a condition, and with cases IV, V, and VII belongs to this class. (See sketches of cases IV and V.)



CASE IV.—Dense constricting band across ascending colon, causing partial obstruction.

in itself productive of symptoms. In more advanced cases the membrane extends up over the ascending colon, and is produced by continued irritation from appendicular sources. Hypertrophic lymph nodes are occasionally seen in the mesentery of the

cecum below, and to the region of the flexure above, with bands, in advanced cases, binding the gut down, reducing its calibre, and rotating it on its axis. With the appendix free below, and the duodenum free above, we must conclude that the irritation in this class comes from within the colon, either from an ulcerative or

catarrhal colitis. Case VIII proves that an ulcer can cause such a condition, and with cases IV, V, and VII belongs to this class. (See sketches of cases IV and V.)

3. Membranous adhesions of the transverse colon to the ascending colon, the former being displaced so as to run parallel with the latter, and both being held in an investment of new membrane. In cases where this membranous formation does not involve other organs than the colon, it is reasonable to ascribe this class also to colitis. Angulation at the hepatic flexure, with partial obstruction, is likely to be the cause of symptoms in this condition. Cases VI, IX, XII, and XV belong in

this class. (See sketches of cases IX and XV.)

4. Membrane extending from the gallbladder and liver to the duodenum and pyloric portion of the stomach, and from there to the transverse colon, and usually across the hepatic flexure to the ascending colon. These cases are secondary to duodenal or gastric ulcer, or to cholecystitis. This class of cases may give symptoms referable to the gallbladder, or of pyloric or

of colonic obstruction. Cases I, XI, XIII, and XVI are illustrative of this class. (See sketches of cases I, XIII, and XVI.)

This classification is intended merely as a convenient arrangement of the cases reported herewith, and does not include Lane's kink, which was present in one case, or inflammations on the left side. The splenic flexure is said to be a frequent site for this new membrane, but I have not had occasion to do as much work on the left as on the right side.

The membrane removed from three cases was referred to Dr. E. Moschowitz, pathologist of the Beth Israel Hospital, who kindly examined it for me and reported it to consist entirely of connective tissue and bloodvessels.

The diagnosis cannot be made in the early stages, as the symptoms of the primary and causative lesion would then be the prominent ones. It is not the mere presence of the membrane that



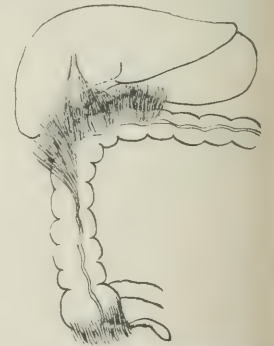
CASE V.—New membrane about appendix and outer side of colon and two bands reducing lumen; also membrane across omentum-transverse colon junction.



CASE IX.—Well marked case of "double barrelled" colon in pouch of new membrane.

do as much work on the left as on the right side.

The membrane removed from three cases was referred to Dr.



CASE XIII.—Duodenal ulcer and appendicitis; membranous adhesions between duodenum, colon, and liver; new membrane about appendix region.

causes symptoms, but its contraction, which is a comparatively late development. But when the process has progressed to that stage it will cause symptoms of its own, and they are often sufficient to base a diagnosis upon. In nine of the sixteen patients in this series, the symptoms were due to the effects of the membranes present, and in all but one of these the diagnosis was made before operation. There are a few main factors to be relied upon in the diagnosis. The history is usually that of vague and annoying pains in the right side of the abdomen, for months or years, generally without there having been any attack severe enough to have caused confinement to bed. Constipation is usual, and, at times, constipated movements will be followed by painful diarrheal discharges. Gaseous distention of the cecum, or of the cecum and ascending colon, with a comparatively collapsed condition of the descending colon, will be found, but this may be absent when the bowels have been cleaned out by laxatives or enemata. Tenderness about the right half of the abdomen, not limited to the appendix region, especially when it extends up over the ascending colon to the hepatic flexure, and probably beyond it to the region above the umbilicus, is very suggestive. The region of tenderness seems to correspond to the situation of the new membrane. This has been observed at operation in most of the cases here reported. The subjective pains are most probably due to the continuous irritation, and tension on the attachments of the constricting membrane, by the gases and other enteric contents that are continually being forced past them. Symptoms of the primary lesion may yet be in evidence, as is frequently the case when appendicitis or duodenal ulcer is the cause, but when the primary lesion has healed or become quiescent, all the symptoms complained of may be due to the presence of the new membrane.



CASE XV.—New membrane about appendix, ascending colon, and hepatic flexure; dense band from colon to fatities.

In the treatment the first requisite is removal of the cause, and, whatever that be, it should receive the usual attention directed to its cure. To treat the membrane alone, and neglect the cause, would certainly invite recurrence of the condition. In operating for chronic appendicitis, Lane's advice to draw up the ileum in search of a kink, is now generally followed. The condition of the large gut should also be examined, by drawing it down, to ascertain whether it is free or adherent. If the ascending colon will not come down into the wound, it is fair to assume that there are perienteric membranous adhesions about it, and the incision should

be enlarged sufficiently to explore and, if necessary, to correct them.

The rectus incision, with displacement of the muscle, is the best in these cases, as it can be enlarged in either direction as needed. That it may be the cause of abdominal wall paralysis by division of the spinal nerves crossing on the posterior rectus sheath, is an important objection urged against it, but this may be overcome by not dividing them. When a nerve is exposed, in retraction of the rectus, it can be caught in the retractor and held to one side while the posterior rectus sheath and peritoneum are incised under it. This leaves the nerve intact, crossing the line of incision. It will pull out of its sheath to a considerable extent and so allow of sufficient retraction of the sides of the wound, as well as of its own displacement upward or downward, to permit the necessary endo-peritoneal work either above or below its crossing. In large incisions I have been able to save two nerve crossings in this manner.

The proper treatment for the membrane is not definitely established, as sufficient time has not yet elapsed to judge of the results of treatment that has been used. Various factors have to be considered. Removal of the membrane, in recent cases, though it leaves the serous surface intact, yet leaves it to a certain extent covered with the raw ends of the divided fibres by which the membrane was attached. This rawness varies from almost nil, where the membrane is comparatively new, and where it is loosely attached, to a real destruction of the integrity of the serosa in old cases where heavy fibrous bands have formed, especially at the site of their firm attachment. Like the membrane they are generally firmly attached at either end, and loosely over the rest of their extent. At times, though, the firm attachment spreads over a more extensive surface and seems to have a predilection for firm adhesion to the longitudinal band of the colon. The removal of these denser membranes necessarily bares the surfaces where they were attached, and questions present themselves as to possible reformation of the membrane, and as to whether the raw surface is likely to adhere to neighboring parts.

When a kinking of the gut or diminution of its calibre is caused by one of these bands, the indication is clear, not only to divide it, but to remove as much as possible. With the mere division of the band the cut edges retract, being forced apart by the expansion of the gut thus released from tension. Fortunately this carries and holds the ends of the divided fibres so far apart that their reunion is unlikely. But yet it seems rational to remove as much as possible of the new tissue, and, if in doing so the serosa is damaged by the firmness of the adhesions, such deficiencies may be closed in by a few Lembert sutures. The thin veil-like membrane should be divided across the direction of the fibres, which, with the expansion of the confined gut, will likewise retract to either side. Even if the membrane does not seem to kink or constrict the gut, it should be treated by division or removed, for, if left alone, its tendency to contraction might be the cause of future trouble. In the case of a thin veiling the integrity of the serosa is generally not involved, and the latter may be left to care for itself. When

the division of heavier membranes, or their removal, makes it necessary to cover a defect, the line of suture should, if possible, be at right angles to the incision, so as to spread the divided ends of the constricting fibres still further apart. When practicable the membrane should be peeled off, and either entirely removed or folded up and sutured to its parietal attachment.

The results of treatment have been generally good, though not invariably so. Marked improvement is the rule, complete relief exceptional. Pain and distress are relieved, though generally not entirely abolished. Constipation is cured in some, re-

cally normal angle at the hepatic flexure, and no recurrence of the previous displacement of the transverse colon. (See radiograph of Case I, and tracings of radiographs of Cases IX and XVI, and compare with sketches of respective cases, and with tracing of preoperative radiograph of Case XVI.)

CASE REPORTS.

CASE I. E. K., male, aged twenty-two years, admitted to the Beth Israel Hospital, May 16, 1911. For over five years, constipation and abdominal pains referred mostly to epigastric region. For two years cramps after food and with bowel movements. Recently also hunger pain suggestive of duodenal ulcer. Past four months tenderness in right iliac region.



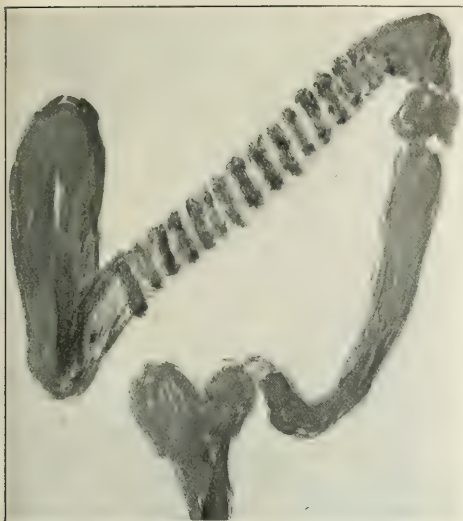
CASE I.—Postoperative radiograph showing normal angle at hepatic flexure.

lieved in others, but, in most cases, remains troublesome. Some tenderness generally persists, but very little in comparison to what it had previously been. The details of results, after periods of time varying from two to ten months after operation, are noted in the individual reports of twelve of the cases that I could follow. One important thing was noted in the cases of "double barrelled" colon, where the adhesions were separated at operation. There were five such cases in this series, and in three of them I obtained postoperative radiographs which showed that these adhesions did not reform. The patients were radiographed, in Case I, nine months, Case IX, three months, and Case XVI, two months after operation, and all three show a practi-

cal examination showed marked surface hyperesthesia in epigastrium, tenderness over the hepatic flexure, and in right iliac region, and distention of cecum and ascending colon.

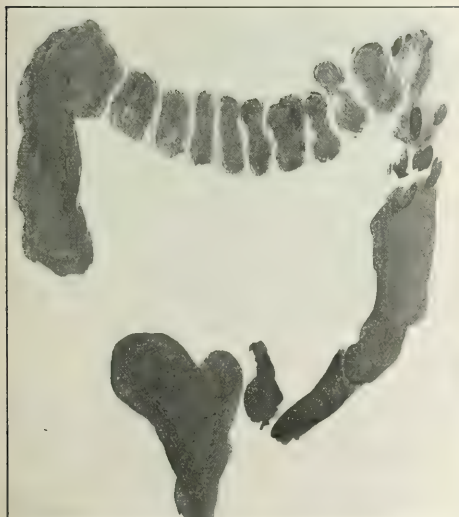
Diagnosis, adhesions, obstructing lower bowel; also probably duodenal ulcer, and probably chronic appendicitis.

Operated on, May 17th. Chronic appendicitis with no new membrane in its vicinity. Hepatic flexure sharply kinked and obstructed by contracted perienteric membranous bands running from outer parietes across ascending colon to the transverse, and drawing that down at a sharp angle. Also bands from transverse colon to duodenum, drawing that down. No signs of gastric or duodenal ulcer could be found. Explorations of the gallbladder, liver, kidney, and for Lane's kink were all negative. Appendix excised. New membrane to outer side of colon divided and sutured at right angles to line of incision. Again divided between ascending and transverse colon, and he-



CASE XVI.—Tracing of preoperative radiograph showing "double-barrelled" colon.

patric flexure freed. Bared surfaces here also sutured. Bands between duodenum and transverse colon divided. Abdomen closed. Discharged in thirteen days. Immediate result, relief to cramps and lower bowel symptoms, but persistence of gastric symptoms. March, 1912, mild constipation relieved by laxatives without distress. No more lower bowel symptoms, but persistence of gastric symptoms, especially of hunger pain and epigastric hyperesthesia. Most probably has duodenal ulcer. Radiograph, taken nine months after operation, showed normal angle at hepatic flexure.



CASE XVI.—Tracing of postoperative radiograph showing normal angle at hepatic flexure. (Compare with preoperative tracing of same case.)

CASE II. T. K., female, aged nineteen years, admitted to Beth Israel Hospital, August 10, 1911. Chronic constipation. Attack of right side pain, with fever, etc., one year ago, and another ten days ago, now subsiding.

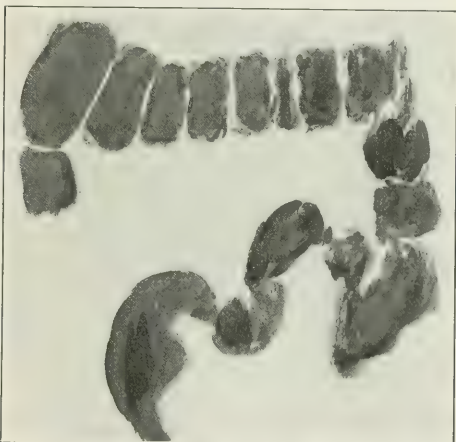
Examination showed tenderness in appendix region. Diagnosis, acute appendicitis.

Operation, August 11th, showed chronic appendicitis. New membrane about appendix and its mesentery, and extending on to the lower portion of the cecum. Appendix excised, membranes divided, abdomen closed. Discharged in eleven days.

CASE III. M. C., aged twenty-one years, admitted to Beth Israel Hospital, August 27, 1911. Had attack of abdominal colic a year ago, lasting four days. Another attack six weeks ago, and milder pains continuing since.

Examination showed tenderness about appendix region. Diagnosis, chronic appendicitis.

Operated on, August 30th. Chronic appendicitis. New membrane from ileum on to cecum and ascending colon, binding down appendix to posterior wall of mobile cecum. No Lane's kink. Appendix removed by decapsulation, membrane divided, bleeding points ligated, and abdomen closed. Discharged in fifteen days. April 30th, felt well. No constipation, no cramps, no tenderness on examination.



CASE IX.—Tracing of postoperative radiograph showing normal angle of hepatic flexure. (Compare with sketch of Case IX.)

CASE IV. A. E., female, aged eighteen years, admitted to Beth Israel Hospital, September 27, 1911. For two years, frequent attacks of colic and nausea after eating. Pains in right lower abdomen radiated to epigastrium. Lumbar pains. Abdomen often distended. Worse for past six months.

Examination showed tenderness in right iliac region and upward along the colon.

Diagnosis, chronic appendicitis, and membranous pericolicitis.

Operated on, September 30th. Appendix normal in appearance. No Lane's kink. Cecum and colon held down by bands. Incision enlarged upward. Lower portion of ascending colon enveloped in perienteric new membrane. A dense broad band, running from outer parietes completely across lower portion of ascending colon, decidedly kinked it, with sufficient obstruction to cause distention of the cecum below it. Appendix excised, band divided, and raw surfaces covered in by suture. Abdomen closed. Discharged in fourteen days. April 29, 1912. Felt much better than before operation, though recently had abdominal cramps and nausea again. An occasional laxative brought on cramps. Examination showed gaseous distention of, and some tenderness over the ascending colon.

CASE V. S. S., female, aged twenty-three years, admitted to Beth Israel Hospital, December 4, 1911. Old constipation. Intermittent attacks of pain in right lower abdomen for past six months.

Examination showed tenderness over appendix region, and along ascending and transverse colon.

Diagnosis, chronic appendicitis with membranous pericolicitis.

Operated on, December 6th. Chronic appendicitis. Distal portion of appendix cicatricial. No Lane's kink. New membrane about base of appendix, binding it to cecum and

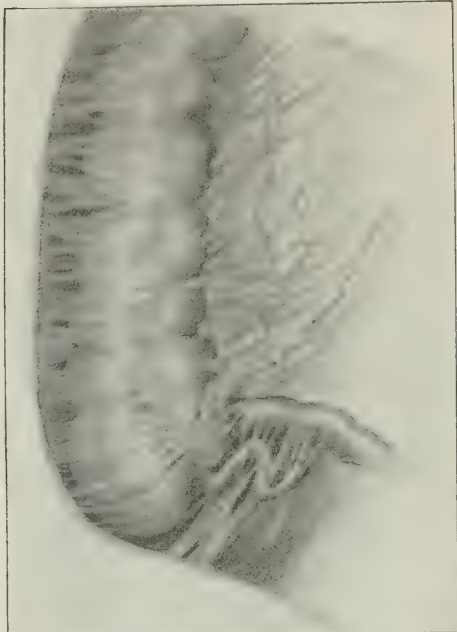
up to flexure. Running suture up ascending colon and across flexure onto transverse colon, to cover in raw surface. Abdomen closed. Discharged in fourteen days. April 15th. Felt well. No pain. Mild constipation, needed a laxative once in one or two weeks. No tenderness on examination.

CASE VII. H. N., female, aged twenty years, admitted to the Sydenham Hospital, December 16, 1911. Marked chronic constipation. Pains right side abdomen for over a year. Worse for past few weeks.

Examination showed tenderness in appendix region.

Diagnosis, chronic appendicitis.

Operated on, December 17th. Chronic appendicitis. Outer aspect of ascending colon covered with new membrane which extended well out on to the parietes. There were three distinct bands radiating from a common attachment at the lower portion of the longitudinal band, to a low, medium, and a high point on the outer parietes, causing marked diminution of calibre and kinking of the large



CASE X.—New membrane about appendix and ascending colon.

parietes. Cecum otherwise free. New membrane about ascending colon, all along its outer side, from longitudinal band to parietes, constricting the colon and reducing its calibre, probably one third. Two heavy bands, in the continuity of this membrane, further kinked the already diminished calibre. Incision had to be enlarged upward to reach flexure. A series of perienteric membranous fibres was also found across the whole extent of the junction of the posterior layer of the omentum with the transverse colon. Appendix excised. Membrane and bands divided on outer side of ascending colon, and bands partially removed. Abdomen closed. Patient discharged in twelve days.

CASE VI. B. R., female, aged twenty years, admitted to Beth Israel Hospital, December 11, 1911. Pain right side of abdomen for one year or more. Constipation. Examination showed tenderness in the appendix region and the same, more marked, higher up on right side.

Diagnosis, chronic appendicitis, and membranous pericolicitis.

Operated on, December 13th. Appendix found completely enveloped in, but not adherent to pocket of peritoneum, and bent on itself about its middle, congested, and proximal portion distended. Perienteric new membrane to outer side of cecum and ascending colon, binding them to parietes. Incision enlarged upward and transverse colon found running back along side of, and adherent to the ascending, as far down as cecum, and held so by membranous adhesions between the omentum and the anterior longitudinal band of the ascending colon. Sharp kinking at hepatic flexure. Appendix excised and its pouch obliterated. Membrane to outer side of colon divided. Adhesions between ascending and transverse colon separated



CASE XVI.—Duodenal ulcer; new membrane from duodenum to "double-barrelled" colon, and to liver and gallbladder.

gut. Appendix excised. Bands excised. Membrane incised, separated, and rolled up to the outer side of the colon and stitched down there. Abdomen closed. Discharged in fourteen days. Pathological report on membrane excised: Connective tissue and bloodvessels. April 30th. Felt very well. Constipation entirely relieved. Examination showed no tenderness or distention.

CASE VIII. A. M., male, aged twenty-four years, admitted to Sydenham Hospital, January 2, 1912. Chronic constipation. Severe abdominal cramps for two days.

Examination, tenderness and rigidity in right iliac region and higher.

Diagnosis, acute appendicitis.

Operated on, January 2nd. Appendix not inflamed, but proximal portion was bound to cecum, and both to the abdominal wall, by new membrane which extended well up on to the ascending colon, and included two dense bands in the upper portion of the membrane. The serosa of the cecum, under the new membrane, was hard, thick, and leathery, due to an intracecal indurated ulcer about the centre of the membranous area. Appendix excised. Membrane divided and bands removed and sent to laboratory for examination. Abdomen closed with drain. Patient discharged in thirteen days, all healed.

CASE IX. M. R., male, aged sixteen years, admitted to Beth Israel Hospital, January 22, 1912. Had an appendectomy four years previously, apparently for nonsuppurative condition, after which was relieved for a short time. Obstinate constipation, tenderness, and pain before and since. Examination elicited general tenderness on right side of abdomen, with no definite localization.

Diagnosis, membranous pericolicitis.

Operated on, January 27. Extensive adhesions of omentum to old scar line, to appendix stump, and to anterior longitudinal band of ascending colon, holding down the transverse colon parallel to the ascending colon and cecum in front of the ileocecal junction. The cecum, ascending and transverse colon, and ileal junction were enveloped in an extensive perimetric membrane which extended up over the sharply kinked hepatic flexure. Omental adhesions freed, then membranous adhesions up to the flexure, and the bulk of the membrane removed. Raw surfaces sutured and abdomen closed. Primary union. Discharged in thirteen days. April 13th, a few attacks of sticking and colicky pains each day, about the same as before operation. Constipation markedly less than before operation. No tenderness. Postoperative radiograph showed normal angle at hepatic flexure.

CASE X. L. P., female, aged nine years, admitted to Beth Israel Hospital January 24, 1912. Constipation and attacks of abdominal pain for one year. Now in second week of an attack.

Examination showed tenderness in appendix region and upward along the colon; ascending colon distended.

Diagnosis, chronic appendicitis, and membranous pericolicitis.

Operated on, January 27th. Chronic appendicitis. Heavy membrane covering proximal portion of appendix, and cecum, and lighter membrane over ascending colon as far as hepatic flexure. Appendix excised. Membrane divided on outer side of large gut and much of it removed. Abdomen closed. Discharged in three weeks. March 20, 1912. Complained still of cramps and was tender over ascending colon.

CASE XI. L. H., female, aged thirty-two years, admitted to Beth Israel Hospital, February 4, 1912. Pains in recurrent spells for past ten years, referred to right upper abdomen. History of jaundice.

Examination elicited tenderness in gallbladder and in appendix regions. Slightly jaundiced.

Diagnosis, cholecystitis and chronic appendicitis.

Operated on, February 5th, by Dr. Leo B. Meyer, of my staff. Distended gallbladder containing calculi. Chronic appendicitis. New membrane enveloping distended gallbladder and transverse colon, and extending across hepatic flexure to outer parietes, and down outer side of colon to cecum, enveloping a very mobile cecum, and binding the outstretched appendix to the posterior cecal wall. Well marked Lane's kink, three inches from ileocecal junction. Lane's kink corrected by incision and suture. Appendix removed by decapsulation. Membranes divided and hepatic flexure released. Cholecystostomy done and abdomen closed. Patient discharged in fifteen days.

CASE XII. R. E., female, aged thirty-two years, admitted to Sydenham Hospital, February 27, 1912. Pains right side of abdomen for many years; worse for some weeks.

Examination showed local tenderness in appendix region and over hepatic flexure.

Diagnosis, chronic appendicitis and membranous pericenteritis.

Operated on, March 1st. Chronic appendicitis due to kinking of appendix by bands. New membrane over outer

side of cecum and ascending colon from anterior longitudinal band to parietes. Omentum, near its junction with the transverse colon, also bound to same longitudinal band by membranous adhesions, bringing the transverse back parallel to the ascending colon, and causing angulation at the hepatic flexure. On raising omentum, a series of fibres of new membrane was also found overlying line of junction of transverse colon with posterior layer of omentum. Appendix excised. Membrane to outer side of ascending colon divided and partially removed. Adhesions between ascending and transverse colon separated up to angle of flexure. No sutures used; abdomen closed. Discharged in fourteen days. April 11, 1912, pains about right side of abdomen, but much less than before operation. Constipation still, but much less marked.

CASE XIII. S. W., female, aged twenty years, admitted to medical side, Beth Israel Hospital, February 20, 1912, suffering for two years with pain after meals, vomiting, gaseous eructations, etc. Six weeks ago had attack of right side abdominal pain with vomiting, etc., lasting four days. March 5th, was transferred to the surgical side on account of another attack of right iliac pain.

Diagnosis, duodenal ulcer, and recurrent acute appendicitis.

Operated on, March 7th. Appendix strictured, acutely inflamed, and distended with pus beyond stricture. Light veil of perienteric membrane about base of appendix and nearby cecum. Ascending colon free, but hepatic flexure, gallbladder, and duodenum bound together by adhesions. Incision enlarged for exploration. Pyloric end of duodenum extensively indurated, and signs of old inflammation on its serous surface. New membrane bands and adhesions from the hepatic flexure and transverse colon to the liver, gallbladder, and duodenum, and from the duodenum to the liver, drawing these parts together and entirely burying an otherwise practically normal gallbladder. Appendix excised. Adhesions loosened up and bands partially removed, freeing the hepatic flexure and duodenum from their attachments to each other and to the liver. On account of the length of time spent in these explorations, etc., gastroenterostomy was postponed for a future occasion. Abdomen was closed and patient transferred back to the medical side in about ten days. April 30th was on medical side yet, under treatment for duodenal ulcer. Had no recurrence of other pains. Felt well.

CASE XIV. E. K., female, aged fifteen years, admitted to Beth Israel Hospital, February 24, 1912.

Operated on, March 11th, for pyonephrosis due to stricture, low down, of right ureter. Immensely distended kidney and ureter with foul smelling, colon infected, purulent contents. Transperitoneal nephroureterectomy was done. Exposure of the posterior abdominal wall showed the ascending colon and hepatic flexure lying on the eminence of the kidney tumor, and an area of perienteric new membrane extending from well over on the outer layer of the mesocolon, to and across the flexure and adjoining portions of the ascending and transverse colon. The membrane was situated centrally over the kidney tumor, seemed to be comparatively few, not causing any kinking or displacement by contraction. It was merely incised across its fibres. Patient made a good recovery. April 30th, felt well.

CASE XV. A. Z., female, aged twenty-five years, admitted to Beth Israel Hospital, March 22, 1912. Chronic constipation. Pain right side of abdomen four months, not severe.

Examination showed tenderness in appendix region and above. Distended ascending colon.

Diagnosis, membranous perienteritis.

Operated on, March 23rd. Chronic appendicitis. New membrane from appendix on to cecum and ascending colon, and across hepatic flexure, kinking it sharply. Omentum also adherent to ascending colon side of flexure. Dense band from anterior longitudinal band of ascending colon to parietes, external to flexure. Appendix excised. Membrane and band divided and partially removed, and angle of flexure freed. No sutures required. Abdomen closed. Patient discharged in twelve days. April 21, 1912. Felt much better. Old pains gone. Constipation mild, much less than before operation. Examination showed very little tenderness anywhere.

CASE XVI. S. R., female, aged twenty-two years, admitted to Beth Israel Hospital, medical side, February 29, 1912. Seven months previously was two weeks in bed with

first attack of right hypochondriac pain with jaundice. Another attack three weeks later. Since then pain and discomfort and eructations after food, till last severe attack two weeks before admission.

Examination showed tenderness in gallbladder region and downward along the colon to appendix region. Radiograph showed "double barrelled" colon. Was transferred to the surgical side, March 26th.

Diagnosis, cholecystitis, and perienteric membranous adhesions.

Operated on, March 27th. Appendix normal. No Lane's kink. From midway up ascending colon was a well organized and heavy perienteric membrane, from outer parietes, extending across ascending and reversed transverse colon, and upward, crossing and adherent to duodenum, and ending in firm adhesion to under surface of liver and to outer side of gallbladder and cystic duct. Omentum involved in adhesions between ascending and transverse colon. These were all separated up to the flexure, requiring ligation of a number of bleeding points. Upper bands, accompanied by omentum, were peeled off the duodenum and separated from liver, requiring ligation. Membrane and bands from ascending colon to parietes, divided. Exploration of the duodenum, now free, showed an induration at inferior portion of pylorus, evidently an ulcer, covered with adherent omentum. Gallbladder normal, ducts free, and foramen of Winslow open. Appendix excised. Abdomen closed. Patient made good recovery. April 25th. Relieved of all symptoms, even duodenal, but was instructed to return for gastroenterostomy should they recur. Postoperative radiograph showed normal angle at hepatic flexure.

1325 MADISON AVENUE.

Examination disclosed a generally well developed and apparently otherwise healthy man, with labored respiration, marked shortness of breath, whispering speech, and thorax never fully expanded. The laryngoscopic examination showed that the laryngeal space was almost fully occluded by two rounded pedunculated growths springing

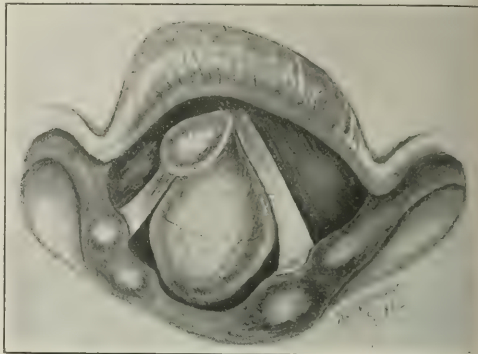


FIG. 1.—Sarcoma and myxoma of larynx *in situ*.

PEDUNCULATED SARCOMA AND MYXOMA OF LARYNX.

Recovery and Nonrecurrence.

By A. MORGAN MacWHINNIE, M. D.,
Seattle, Washington.

Outside of the larger European laryngeal clinics, large tumors of the larynx of any character are of extreme rarity and, even in the public institutions of America, are so seldom seen that when a patient appears, not only the special surgeons of these institutions, but all who can come are usually invited to inspect the case. The patient is paraded before medical societies, and the case is finally reported in the medical press. The mere existence of such a case is thus of interest. Pedunculated sarcoma of the larynx is more rare than that of benign or specific type. A laryngologist, or one practising in addition the allied specialties of the nose, ear, and the eye, may be a busy man for a score of years and never see such an extensive growth in private practice of a character as is here described. The character of the patient's symptoms, the operation for his relief, and its result are also so unusual as to merit its being placed on record:

CASE. A man of the middle class, aged fifty-four years, weighing about 200 pounds, otherwise apparently in robust health, consulted me, July 11, 1910, stating he had been hoarse for three months and during the past eight weeks had not been able to speak above a whisper. Was short of breath, and that his respiration had become more labored each day. About eighteen months previously he had been in Peru, South America, and there had been taken ill with influenza, upon recovering from which a slight hoarseness developed, gradually increasing. During this period he had tried various climates without benefit. There was no specific or traumatic history and the tuberculin reaction made by one of his various consultants, through the local laboratory, was negative.

from immediately below the anterior chordal commissure, the smaller one being attached above the vocal cords and lying mainly to the right side. The dyspnea prevented me from manipulating either of the growths or taking a piece for section, as the extremely small space through which respiration could take place did not warrant any disturbance for fear of exciting edema.

A sketch drawing of the laryngoscopic appearance was made and the patient informed that immediate operation was essential. As the growths were pedunculated, he was told that a satisfactory removal might be done without external incision. The patient did not agree to operation, but stated that he would report later in the day. Instead of this he went to several other specialists' offices for examination. Thirty hours after the consultation, about 3.30 a. m., I received a telephone message that he was "choking to death," and his friends requested that an immediate operation be done. He was then taken to a hospital and, though conscious, the dyspnea and cyanosis were so great that he and his family despaired of his life. I advised that tracheotomy and laryngofissure was immediately indicated. His condition was such that the usual wait for a thorough asepsis of the operative field had to be dispensed with.

Under partial chloroform anesthesia the second, third, and fourth rings of the trachea were quickly divided and a tracheal tube was inserted, whereupon the dyspnea and cyanosis speedily disappeared. Quickly following this the larynx was split, and upon retraction of the cartilages the growths were readily seen. The to and fro motion from the respiration showed the larger tumor attached by a fairly large pedicle, and was removed by the finger. The smaller one was removed by snare and forceps. The base of each was then thoroughly curetted, the laryngeal wound was then carefully adjusted, and a successful attempt made to bring the anterior attachment of the vocal cords into normal position for proper phonation. The laryngeal membranes were sutured by catgut, then deep tension sutures were placed above and

below the thyroid cartilage, and the skin wound was properly sutured by silkworm gut.

The patient recovered speedily from the anesthetic, even before his removal from the operating room, and, while he was not allowed to speak, his gestures and facial appearances showed that he realized that he had been snatched from the jaws of death. The tracheal tube was left *in situ* for three days, when it was removed as no inflammatory reaction occurred within the larynx. Two stitch abscesses resulted in the skin, due to the lack of a thoroughly clean operative field. He was not allowed to talk for fourteen days when, to his and my satisfaction, it was found that he could speak, although hoarsely. The hoarseness persisted for three months, when it gradually disappeared, and the voice is now, two years and one month later, practically normal, and there has been no recurrence of the sarcoma, the last examination showing no granulation tissue or an appreciable scar except that in the external skin. The report of the microscopic examination by Dr. George S. Dixon, of the New York Eye and Ear Infirmary, was as follows:

The large one is histologically a sarcoma and is made up of medium round and spindle cells with an occasional poorly defined giant cell, and a moderate amount of connective tissue. It is covered with a layer of epithelium, which is beginning to break down at what appears to have been the pendent portion. There is very little evidence of

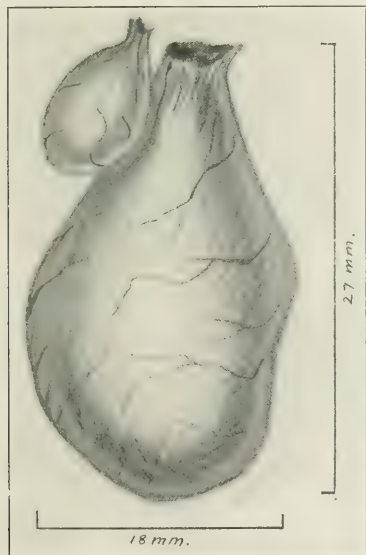


FIG. 2.—Same as Fig. 1 after removal.

irritation, and it was probably a slow growing tumor, judging from its general appearance. As it was attached by a pedicle it would be less likely to recur than if attached by a broad base, and this may account for the fact stated, i. e., that there had apparently been no recurrence within two years or so after removal.

The other two pieces removed from the vocal cord are different in that they are myxomatous in nature, and the exposed surface is necrotic.

Dr. John E. Weeks agrees with me that the large one is a sarcoma.

Laryngofissure is a sufficiently rare operation to be noted by itself. This procedure could undoubtedly have been avoided and the growths removed by the mouth if the patient had accepted the advice given at the time of the first consultation, but the tracheotomy, as well as the laryngofissure, were necessitated by the moribund condition of the patient when seen at the hospital. An item of note in this case, as happens in many others, is the fact that the gratefulness of the patient did not persist to the paying of the surgeon's fee, which, however, was allowed by the court, since which time the patient and physician have been better friends.

The drawings were made by my colleague, Dr. H. V. Würdemann.

604-612 LEARY BUILDING.

FRACTURES OF THE SKULL.*

By E. P. MAGRUDER, A. M., M. D.,

Washington, D. C.,

Clinical Professor of Surgery, Georgetown University; Associate Surgeon, Emergency Hospital.

Fractures of the skull are of more than passing interest to both physician and surgeon, for neither knows at what moment he may be called upon to treat an injury of the head in which he is face to face with the question: Is this a fracture of the skull, or not? If it is, what is its character and how shall I treat it? The condition may be so plain as to preclude all doubt; it may be so difficult as to tax the judgment of the most experienced physician. Meantime, the life of the patient may be absolutely at stake. Let us then take a brief review of the question before us. Fractures of the skull may be variously classified:

1. According to whether open or closed.
2. According to the form of the fragments: as linear or fissured; a diastasis; a comminution; a depression or a perforation, with or without loss of substance.
3. According to the way in which they are produced, whether direct or indirect, bursting, bending, or expansile through hydrodynamic force.
4. According to location, whether of the vault or of the base, or, as we so often find, a combination of the two.

The diastasis is an interesting form of fracture: A drunken man, in the attempt to step from the street upon the sidewalk, slipped from the curb and fell over backward, striking with full force just above the occipital protuberance. The bodies of none of the bones were fractured, but the lambdoidal, sagittal, and coronal sutures were widely separated. Here was a fracture by diastasis.

A fall upon the buttock may have its impact transmitted through the spinal column to the occipital bone, and may produce a ring fracture about the foramen magnum. That fracture occurs by contrecoup is no longer tenable, since none could be produced experimentally. Incomplete bursting fractures are most frequently seen in the orbital plates, usually bilateral, as was observed in the autopsy of President Lincoln. That the skull may yield under

*Read before the Medical Society of the District of Columbia, May 22, 1912.

impact for the fracture of a second is shown by the fact that particles of bullets have been found within the skull without any visible opening through which they could have passed. Comminuted fractures are common in punctured and perforating wounds, affecting especially the inner table: A man was struck in the temporal region with an alarm clock, the legs penetrating the skull. The outer table was merely penetrated, but there was remarkable comminution of the inner table in two places, corresponding to the two points of ingress.

Kocher's studies have shown the tremendous force of the modern firearm, with its extreme initial velocity and great power of penetration, in gun shot wounds of the skull.¹ The missile rarely lodges. In marked contrast with this is the soft bullet of the common revolver, with its relatively slow initial momentum. This bullet is apt to split into fragments in its passage through the cranium, and lodge within the brain substance. Two years since, a young man attempted suicide by turning his head to the left, and shooting himself a little to the right of the external occipital protuberance. The bullet was a thirty-eight calibre pistol ball. It was split into six fragments by the skull bone; one fragment lodged outside the skull, and five penetrated, scattering within the brain substance. The condition justifying it, the skull was immediately x rayed, and an operation proceeded with as soon as the plate was sufficiently developed to serve as a guide. The wound of entrance was enlarged by means of rongeur forceps, and the five fragments of the bullet, and some of bone, within the brain were gently extracted by means of the index finger and artery clamps. There was a slight loss of brain substance. Sight was interfered with for a few weeks, but the recovery was complete and the patient's condition has been uneventful to date.

DIAGNOSIS.

It is essential not only to locate a lesion, but also to determine its character. A minute fissure may be of far graver consequence than an extensive comminution. Of special importance are the following:

1. The escape of cerebrospinal fluid, blood, or brain substance from the endocranial cavities.
2. The presence of ecchymoses at significant points, slowly spreading from the site of fracture.
3. Nerve involvement, the result of fracture at the foramina of exit.
4. Temperature.

The presence of cerebrospinal fluid is much more frequently evidence of basal fracture than one of the vault. But it is well to remember that two thirds of all fractures of the vault are associated with fractures of the base and that eighty-five per cent. of fractures of the base *originate* in the vault.

Cerebrospinal fluid, which is at first red, and gradually becomes clear, gives an alkaline reaction. a mere trace of albumin, but abundant sodium chloride. Considerable hemorrhage from the ear points to a deep seated lesion, rather than to the rupture of the membrana tympani, because the vessels of the latter are small and insignificant. In thirty-two cases of fracture of the middle fossa, carefully investigated by Prescott Hewitt, hemor-

rhage from the ear was observed in fifteen; in twelve the tip of the petrous portion was fractured, but the tympanic cavity had escaped. In the remaining five the tympanic cavity was involved, though the membrane was not ruptured.

A fracture of the horizontal plate of the ethmoid will produce hemorrhage from the nose, but a fissure of the petrous portion of the temporal bone may conduct the blood through the Eustachian tube into the nares.

Bloody expectoration and vomiting point strongly to fracture of the base. Fourteen of Hewitt's thirty-two patients had hemorrhage from the nose or mouth. There was a fissure of the ethmoid in four cases, fracture of the sphenoid in three, fracture of both ethmoid and sphenoid in five, and of the basilar portion of the occipital bone in one. If a hemorrhage is subdural, the cerebrospinal fluid from the lumbar regions will show it.

Ecchymosis at the mastoid signifies fracture of the middle or posterior fossa; about the eyelids, of the anterior fossa. Extravasation along the optic sheath and showing beneath the bulbar conjunctiva probably proceeds from within the dura. Coming from the posterior fossa, it will show on the neck after two or three days. Blood accumulating within the orbital fossa may push forward the globe of the eye—a most significant sign.

In fracture of the orbital roof, the periosteum always tears when the bone breaks. In seventy-nine cases of fracture of the orbital roof examined by Hölder for the presence of hemorrhage into the orbital fat, sixty-nine cases were positive, and in only six was hemorrhage in the fat without solution of continuity of the orbital wall.

With regard to nerve involvement, the facial is the most frequently affected, because of its course through the petrous process, and the liability of the latter to a fissure fracture through the middle fossa. The abducens is second in order of frequency. One or all of the oculomotors may be involved in fracture of the sphenoidal fissure, followed by diplopia. The olfactory may be involved in a fracture crossing the frontal fossa. The optic may be affected directly, especially in gunshot wounds; less commonly, the trigeminal, glossopharyngeal, vagus, spinal accessory, and hypoglossal. There may be nerve group affections, namely, the sixth, seventh, and eighth; the third and fifth; the ninth, tenth, and eleventh; as when the lesion involves their foramina of exit. For practical purposes we may make the following inferences from the localized symptoms presented:

1. Involvement of the cranial nerves points to a hemorrhage in the medulla, which, if at all large, is rapidly fatal because of paralysis of the respiratory and cardiac centres.
2. A staggering gait points to an involvement of the peduncles, or hemorrhage into the pons.
3. A severe occipital pain with accompanying vertigo, nausea, vomiting, and incoordination point to a hemorrhage into the cerebellum.
4. Stertorous breathing, high temperature, and convulsions, accompanied by paralysis and rigidity, point to a hemorrhage into the lateral ventricle of the opposite side.
5. Paralysis or anesthesia of the parts supplied

¹See also the author's communication to this JOURNAL for December 23, 1911. FIG. 18, p. 1275.

by the fifth nerve points to a hemorrhage into the lower portion of the pons.

6. Paralysis, with conjugate deviation of the eyes from the side of the lesion, points again to a hemorrhage into the pons.

7. Hemianopia, or blindness in one half of the field of vision, points to a hemorrhage into the occipital lobe, the lingual or fusiform lobules, or the angular gyrus.

8. Word deafness points to a hemorrhage into the posterior region of the first and second temple convolutions.

9. Hemiplegia with oculomotor paralysis of the opposite side points to hemorrhage into the crus cerebri on the side corresponding to that of the ocular palsy.

10. Following fracture of the base, contracted pupils, equal, with little if any reaction, are indicative of a bilateral, diffuse, subdural hemorrhage.

While shock depresses temperature, the degree of pyrexia is an excellent indication of the severity of the endocranial lesion. A concussion, a contusion, a slight hemorrhage will produce a slight rise of temperature— 99.5° F. The initial temperature of laceration is higher than the initial temperature of hemorrhage, and if the rise is early and rapid, it is indicative of considerable laceration. Very slow respiration suggests pressure upon the medulla. Muscular palsy suggests laceration of the motor area. In a suspected closed fracture we must exclude the following:

1. A congenital depression, or one of previous injury.

2. A breaking down, gummatous osteitis.

3. Congenital prominences and irregularities of the cranial development.

4. Senile atrophy of the cranium.

5. A flat hematoma with a firm base.

6. A phlegmonous swelling.

7. Concussion as a *necessary* sign of fracture.

8. A suture developing in an unusual situation in a Wormian bone.

A depression may be hidden beneath the temporal muscle or beneath a limited extravasation. The latter may lead to very extensive fractures and brain injury, observed only at autopsy: About 10 p. m., a man fell downstairs, striking his head at the mid-temporal region. A small open wound through the scalp and temporal muscles led to a hairlike fissure, discovered with the greatest difficulty, running toward the base, as far as could be seen. There were no cerebral symptoms whatever, but the patient was told that his skull was fractured and was urgently advised to remain in the hospital, under any circumstances until the next day, for observation; but he positively refused to do so, saying he felt perfectly well and knew he could not be much hurt. His friends were told of his condition and advised to watch him. I was called to an autopsy the next day, which proved to be that of the same case, and showed a fissure fracture of the base, with considerable hemorrhage and concussion. The patient had been found dead in his bed about 6 o'clock that morning.

In concussion and contusion, the patient is stunned. There is mental confusion or loss of consciousness. Involuntary micturition and defecation

may be present. The pupils react to light. The temperature is subnormal. In laceration, the symptoms of concussion are more pronounced following initial shock, fever will be present—perhaps as high as 103° or 104° F. Uncomplicated concussion is not associated with fever. In compression the pulse is slow and full; the pupils will not react to light; muscular spasm passes on to paralysis; frequent respiration passes on to stertor and Cheyne-Stokes breathing; as the condition grows worse the temperature rises higher.

A free interval, followed by unconsciousness, more or less profound, is indicative of hemorrhage. The free interval is present in one half to two thirds of all cases. The unconsciousness of concussion may be continuous with the coma of compression, therefore the free interval *may not exist at all*; it may last for only a few moments; or it may last for three months.

DIFFERENTIAL DIAGNOSIS.

We should always bear in mind the differential diagnosis between coma following fracture of the skull, on the one hand, and that from alcoholism, apoplexy, uremia, and opium poison, on the other. History of injury to the skull is very suggestive. The coma of alcoholism is rarely so profound as that due to brain lesion. The odor of alcohol upon the breath is very misleading. Whiskey is frequently given to a total abstainer by the well meaning individual before the surgeon arrives. This has been observed in a large number of the victims of basal fracture and of apoplexy.

In alcoholic coma, the pupils are equal. If the patient is sharply aroused, his pupils will rapidly dilate, then contract again. Paralysis is absent. Usually the temperature is subnormal. In apoplexy the coma is complete; the breathing stertorous; the pulse usually slow and bounding; hemiplegia or paraplegia is present. The age of the patient and the condition of his arteries may aid in the diagnosis. The temperature differs in the axillæ. The face is flushed. The conjunctivæ are injected. Choked disc is suggestive. Convulsions are not rare.

In the coma of uremia there are evidences of nephritis; often edema of the extremities; albuminuria and casts; urinous breath; high arterial tension; aortic second sound exaggerated; general convulsions are common; paralysis absent; ophthalmoscopic examination may reveal retinal degeneration, common in nephritis. Opium poisoning is characterized by pin point pupils, which remain so. The patient may be momentarily aroused; laudanum may be detected upon the breath; pulse and respiration are slow.

I should like to touch upon the very interesting and very important question of cerebral localization, as worked out by Professor Sherrington on the brain of the anthropoid ape, and confirmed by Krause on man; but time forbids.

PROGNOSIS.

This is in direct proportion to the extent of the endocranial lesions. The action of the pupils is of great significance. Thus, of fifty-four patients in the literature of cranial injury with nonreacting pupils, forty-seven died; and in twenty-four cases,

diagnosed as basal fracture, all died, while, on the contrary, in twelve cases of basal fracture which terminated favorably, the pupils reacted in all except one.

Most basal fractures are fatal, from injury of the brain, hemorrhage, nerve trunk involvement, or infection. In general, the danger is in proportion to the length of the fissure, for instance, when it begins at the vertex and runs to the base. A single drop of pus may change the whole clinical picture. A serous discharge from the ear, changing to a purulent fluid, is pathognomonic of a basilar meningitis.

In fractures of the base, the greatest danger lies within the first twenty-four to forty-eight hours. Twenty-three patients reported by Wagner as surviving this period went on to recovery. Those fractures are really compound which lead into the natural cavities of the floor of the skull and communicate without, as in the case of the frontal and sphenoidal sinuses, the nares, the pharynx, the ethmoid cells, particularly the tympanic cavity, Eustachian tube, and the external auditory canal. Many of these cavities are rich in bacterial flora, which constitutes the direct cause of infection. Fränkel reported a case of meningitis caused by *Diplococcus pneumoniae*, fatal on the twenty-sixth day, following a fracture of the base extending into the orbital roof. The organisms had passed from the nose through a fissure in the bone. The meningeal exudate showed microscopically the same cocci present in the nasal mucous membrane.

Fracture of the base with escape of brain substance does not of necessity mean a fatality, any more than a microscopic fissure with the mildest of initial symptoms means recovery. A high temperature is a grave symptom; the results are frequently fatal. Subnormal temperature continued after the primary shock, is unfavorable, also a late developing unconsciousness. A late, sudden rise of temperature means a probable meningitis. The mortality is greatest in fracture of the posterior fossa, because of its proximity to the medulla and vital centres; lower in the middle fossa; lowest in the anterior. In the posterior fossa additional danger may attend injury of the venous sinuses.

A gunshot wound is a very common forerunner of cerebral abscess. Complications occur in forty-six per cent. of fractures of the vault, and in sixty-four per cent. of those of the base.

NONOPERATIVE TREATMENT.

In a simple fracture the treatment is expectant. If operation is not indicated, the case requires physiological rest or aseptic dressing, ice cap to head, which should be slightly elevated, and such laxatives, antacids and diuretics, as will aid in free excretion. Primary disinfection of the open wound is absolutely imperative.

In suspected injury to the brain, without immediately positive signs following the first visit of the surgeon, a special nurse, or in any event an intelligent attendant, should watch the patient constantly, and report to the surgeon such important data as pupillary changes, muscular twitching, presence or absence of motion of the extremities, and mental irritability, and record these, together with respira-

tion, pulse, and temperature, every hour or two. The value to the surgeon of these observations in determining diagnosis, prognosis, and treatment cannot be overestimated.

OPERATIVE TREATMENT.

A suspected depression justifies exploratory incision; an actual one demands it. Its justification lies in the frequency of subsequent traumatic epilepsy and insanity. Operation is likewise indicated to check hemorrhage, to remove blood clots, possibly bone fragments, and to prevent infection. It is indicated in penetrating wounds of the skull; in compound fractures; and in simple fractures with accompanying symptoms of hemorrhage. If the vessels cannot be exposed and ligated, gauze packing will check the hemorrhage. In many fractures of the fossae, it is advisable to drain.

The entire scalp should be shaved, washed with green soap and water, alcohol, and mercury bichloride, or the area should be painted with iodine. Whether or not to remove loose fragments in an extensive comminution may tax one's best judgment. However, while nothing justifies the sacrifice of the most careful technique, I believe the fear of necrosis and of infection in these cases is greatly exaggerated. We should not hesitate to replace trephine buttons or to leave loose fragments in a clean wound, provided only that an exact coaptation can be secured, and that the periosteum is intact. In the *Archiv für klinische Chirurgie* for April 6, 1912, Schaak reports eighteen cases in which the fragments were reimplemented, and the results confirmed the superior advantages of this measure. Fourteen made uneventful recovery. My own experience is quite in accord with this.

In fractures of the base, transportation or motion of any kind should be restricted to the utmost. The practice of irrigation and tamponade for cleansing the cavities in hemorrhage or escape of cerebrospinal fluid from the nose or ears should be emphatically condemned. It is attended with the greatest danger of infection. To wipe out as often as required with a moistened, mild antiseptic cotton swab is vastly less likely to cause septic meningitis in the middle ear or in the ethmoidal cells. After this careful cleansing, its efficiency may be increased by very loosely closing the cavities with bits of moist gauze, wrung out of one half of one per cent. tincture of iodine solution, or peroxide of hydrogen and sterile water in equal parts. This dressing should be kept moist, frequently changed in the presence of discharge, and under no circumstances allowed to dam up the exits. But as most basal fractures enter the middle fossa, drainage nearest the lesion is the best. This indication is met by the osteoplastic flap or the intermusculo-temporal operation. The latter splits the temporal muscle in line with its fibres, and removes by rongeur the thin squamous wing of the temporal and the adjoining sphenoid. Both expose the region of the meningeal vessels, and a possible extradural or subdural or effusion. If drainage is necessary after opening the dura, it may be accomplished by gauze wicks, leading from beneath the temporal lobe and through a rongeur bite in the osteoplastic flap, or at the lower angle of the musculotemporal wound.

Both of these methods have, in addition to the great advantage of ample exposure, the farther advantage of drainage through bone or split muscle, rather than through scalp alone, and therefore possess the minimum danger of hernia cerebri. A distinguished surgeon has said: "Whatever may be the wisdom of operating in other cases where there is room for doubt as to the proper course, there rarely is uncertainty as to the proper treatment of gunshot wounds of the skull, *which should be invariably subjected to operation.*"

In extensive loss of tissue, the site of the fracture can best be covered by a plastic operation, or an osteoplastic flap, according to the König-Müller method. The latter gives best results when done as a secondary operation. It is not applicable to the skulls of children, because of lack of development of the diploe, when the skull is too thin to split horizontally. Barth's investigations as to bone transplants—confirmed by Marchand—show that they act only as foreign bodies to stimulate the living tissues to form new bone, which holds fast the transplants and finally grows through them. Fränkel and von Eiselsberg use celluloid plates; Senn employed decalcified bone, while Barth and Grekow advocate a disc of spongy, thoroughly decalcified bone, as being the best material for repair. In any case, freshened edges, exact coaptation, a clean, dry wound, and freedom from suppurative are essentials to success. Calcium hypophosphite may aid in the process of repair.

POSTOPERATIVE AND POSTCLINICAL TREATMENT.

In no class of cases is close observation more important, none in which the patient should receive greater care—postoperative and postclinical. After his discharge from the hospital the patient should be watched at intervals by the surgeon himself for months, in order that a later developing meningeal hemorrhage, etc., may be recognized as early as possible.

Since fourteen per cent. of those who have sustained such injuries are unable afterward to earn a livelihood, and noticeable mental impairment is found in ten per cent., it behooves us, in justice to the patient, to keep in touch with his condition in order to detect the first indications of chronic headache, vertigo, vomiting, cerebral abscess, traumatic epilepsy, and the earliest changes in character and disposition which forecast insanity.

SEVENTEENTH AND I STREETS, N. W.

MEDICAL ECONOMICS.*

BY THOMAS F. REILLY, M. D.,
New York,

Professor of Applied Therapeutics, Medical Department,
Fordham University.

Some one has said that there are only two things in life: Bread and butter, and sentiment. As bread and butter is first, then medical economics must constitute an important field in medicine. Certainly one must live or one cannot practise. It was with such a feeling of the importance of the subject that, five years ago, we began a course of lectures on this

subject to the medical students at Fordham University, the first course of its kind, so far as I am aware, that was delivered in this country. It is true that in most colleges one or two lectures were given on the subject, but no systematized effort was made to teach the subject.

Medical economics includes the study of a vast number of subjects. From a business standpoint it covers: 1. The importance of honor and probity in all transactions; 2, the fundamental principles underlying a physician's compensation, dealing with the subject of fees both for ordinary and extraordinary work and for operations; 3, the necessity of modern methods of medical bookkeeping; 4, the importance of collections; 5, how to secure prompt payment; 6, the various extra practice means of obtaining a livelihood; the evils and dangers of lodge practice; 7, the abuse of medical charity; 8, the dishonesty of division of fees; 9, the value of co-operation as opposed to the old spirit of rivalry; the absolute necessity of organization and its advantages; finally, that medical ethics is of prime importance, both as a guide to proper living, as well as to success from a business standpoint.

You have all doubtless entered the medical profession out of mixed motives. In fact, most of the things that we do in life we do out of mixed motives. In the first place, you believe it to be a noble and honorable calling, one that appeals to you, that you can do so much good in the world by the relief of pain and cure of diseases, that you may discover new things and become famous, that you will be respected and honored among men, that people will look up to you for counsel and advice. But beyond this, there are few among you who do not expect to make a living out of his calling, a living commensurate with his state in life, a surplus that will support him in his old age, and some heritage.

The ideal physician, as he existed in the minds of the laity of the past centuries, was one who labored incessantly, paid his bills now and then, and died, leaving his family in distressed circumstances; seldom did he leave enough to keep them from arduous labor. We have all seen physicians of national reputation who had big practices, lived in great style, etc., and yet their estate was valued at a mere pittance. This might be all right in the good old days, but to-day sentiment is not in the ascendant. The man who fails to accumulate sufficient to keep the wolf from the door of his family, has failed—signally failed in his duty as well as in his profession.

FEES.

It is a very difficult matter to lay down a fee table that will cover a large territory. For ordinary practitioners, without any special ability or pretensions as to superior skill, the average fee to-day is two dollars for a house visit. In some parts of the large cities, this may go a dollar higher. It will be several years before you can expect a higher fee for an ordinary visit, that does not require some special knowledge nor consume more than one half hour of your time. In either case you can sometimes collect more.

In the small towns and country places this fee is reduced to from one dollar to one

*Read before the Bronx Medical Association.

dollar and a half. If the visit entails a mile or more of travel, the country doctors charge so much a mile. In the city mileage is seldom charged for. One dollar should be the very lowest charge for a visit in any part of the country. In view of the increased cost of living three dollars would be the proper average. Some physicians charge two dollars for the first call, and one dollar for each call thereafter. In the office, for an ordinary consultation, without any special time consuming treatment, the average fee is one dollar; men who have experience get two dollars; specialists, five dollars and ten dollars. The average consultation fee of a specialist or general consultant is ten dollars at the office; for an outside call it varies from ten to twenty-five dollars. Very few men exceed these prices in their own cities. In some of the country towns and small cities, fifty cents is received for office work. This is too small for good work, but you must not try at once to break the fee table that patients have been accustomed to pay for a generation. Better avoid a place where the fee is not more than fifty cents an office call. In country places ten and fifteen dollars is the rule for confinement cases; in the city twenty and twenty-five dollars. Charge one dollar for vaccinations, unless others in the town do it for less. In such a case let the patient get the virus and do it for nothing.

Surgical dressings in most cities are charged from one dollar and a half to two dollars. In places where the office fees are less, they are to be scaled in proportion; but it is unfair to ask you to spend twenty-five cents on a dressing without pay for the same. The foregoing fees are intended for physicians who practise among people with incomes which do not exceed \$100 a month.

The ideal method is to charge by the case, as the lawyers do, but custom has made the rule of fixed charges and a young man can seldom break it.

NIGHT CALLS.

If the night call is an emergency one, in which the people have sent for their regular attendant, charge double the regular day fee, or at least three dollars. Charge double the fee at night to strangers in town, transients, and to roysterers. Any special work, such as opening abscesses, injecting morphine, passing sounds, electrical treatment, etc., is worth a double office fee, and most people will gladly pay it. In some places one and a half time the office fee is charged for such work. Do not be afraid to ask the regular price of the visit or call. Either your services are worth it or they are worth nothing, which shall it be? People would not employ you if they thought that your advice was of no value. So do not flinch.

With the poor, all of these general fee charges must be reduced. Sometimes you can avoid this reduction by charging a full fee for one visit and nothing for the next, and so on.

Remember, never offer free advice, unless specially asked for and unless you feel obliged to do so for some good reason. Early in your practice get in the habit of regarding your every sentence like a grocer does his sugar or tea, or an artisan does his time, as having a distinct value. It is not like a conversation of other people, as it represents

a heavy investment. If you give any information over the telephone, that is equivalent to what you would tell the patient in your office, charge an office fee. If you think some one is trying to get a free consultation, become Delphic, answer that there may be something more serious, and that it would be better to have you see the patient.

It is better to treat the very poor in their own houses, unless they are very cleanly, at an office fee, as it makes a bad impression on other patients to have your office smell like a dispensary or a hovel.

CURBSTONE PRESCRIPTIONS.

Many people will meet you in a store, at a "sociable," etc., and will say, "I am suffering from so and so, what do you think I ought to do?" Do not be in a hurry to convey the information; remember it cost you the equivalent of \$10,000 for that knowledge, and never give it gratis without some good reason. On the other hand, you must offend no one. When such a question is asked, say, "Well, your symptoms might point to one of several things and it would be better to see that no mistake is made in diagnosis by having an examination." Do not use the word "examination" to a woman; rather say, "It would be better to have your chest examined," etc., as this is strictly true, because you will only give half hearted information under the circumstances. Yet, strange to say, you will be judged just as severely as though you charged full price in case your remedy does not succeed promptly.

TREATING CLERGYMEN AND OTHERS.

As a general rule, if a clergyman receives a salary or perquisites amounting to \$100 a month, he should pay for medical treatment. Those having poor positions, or young curates or assistants, scarcely receive enough to keep them in clothes and are deserving of your charity. The help in the houses of the clergy should pay as in any other house. In some places it is customary to charge the clergy half rates. If the custom is established, you will not be wise in being the first to break it. It is seldom that free treatment of the well to do clergy will bring you any practice, and you can scarcely ever convince yourself that you are treating them as a charity.

Many people will expect free advice when they pay a bill. If it does not entail too much work, give it to them, telling them to return if not better. Never skip a day's call in treating a patient, without telling him beforehand that you are going to do so, in order that you will not run up too big an account, and that there is no absolute necessity in a daily call. Of course tell them to call you if there is any change. A statement of this kind is always appreciated and will get you a reputation of not making useless calls with needless expense.

VENEREAL CASES.

Office work is generally paid in cash. With venereal patients this should be absolute, as even your best patients, after they are cured, will demur at paying you for such services. Among the Italians it is customary to charge a lump sum for this purpose, payable at, or near the beginning of treatment. It is interesting to note that in the early part of

the century the fee table in the State of New York was fifty dollars for the whole treatment of syphilis, and twenty dollars for the entire care of a case of gonorrhea. In all these years it has not advanced much. One can explain this to the patient, that it will require a long time to treat, with frequent visits, and if he pays right down he will not hesitate to come as often as you direct; otherwise he will not come when he feels better.

Venereal diseases are not very satisfactory to treat at best. If you follow the ordinary charge method, then it is well to keep on hand protiodide or some other mercurial, and have the patient report to you for the medicine. In like manner, the irrigation treatment of gonorrhea, while it is more satisfactory, will bring the patient back, so that you can observe him until cured. This treatment of patients by physical methods at the office should be carried out as much as possible. It serves to bring the patient back and keep him properly observed. If possible, in any case of any disease never simply say to a patient, "just keep right on in the same way," when he reports to you, or soon he will get tired coming back and paying you to say, "continue, or keep right on." Always do something, or make some suggestion as to treatment or diet.

Race frequently makes a difference in fees. From the lower class of Italians you will seldom be able to collect more than a dollar a house visit. If they ask your advice for several on the same visit, charge a dollar a head. They always pay cash. The Germans of the poorer classes will appreciate the fact if you do not call unless absolutely necessary. The fees are a little less than from other nationalities, but are generally paid in cash. They are not a difficult class of people to handle. Among Hebrews you will find that, if the disease be at all serious, you can scarcely make too many visits. The pay is generally safe. The people who give you the most trouble in collecting your fee are the oily tongued natives, particularly those with the Southern accent, who try to pay you in compliments.

COLLECTION.

Make a strong effort to be paid cash at all times by strangers. In the large cities you should always try to be paid at every visit, unless you are acquainted with the people. Under any circumstances, whether you know the people to be honest or not, remember that a bird in the hand is worth two in the bush. With strangers try to have a financial agreement at all events at the second call. At your first call, after having finished your work, stand up in the middle of the floor and slowly look about, whirling your hat as though you were waiting for some one to come, at the same time not saying anything for a few minutes. This will cause most people to make some suggestion as to payment. If they fail to do so, speak to the one who sees you to the door, saying, "Now, Mr. Soandso, you know we are strangers and it is customary to have some financial understanding," etc. It is seldom that such a statement is received with resentment. Whenever a patient says, "Shall I pay you now or when you get through?" you can answer, "You might as well pay now as it will not be so hard later," or "short accounts make long friends," "It

will avoid making a trip to the office," etc. You do not know how long a case may last, and it is better to get as much on account as possible. In long cases always try to get something on account from time to time, even though you are well acquainted with the people. There is no bill so hard for most people to pay as a doctor's bill. They will always say, "He can wait until every one else has been paid." This is unfair and, no matter what the custom has been in the past, if you want to advance in your profession, to get new apparatus, to do post-graduate work, etc., you must get paid and paid promptly. Every day your money is out is sheer loss. You would have paid six per cent. at least for that money. All these things you can explain when you are confronted by one who criticises your demands for your fees.

Legally, the amount of the fee is a matter governed by custom or practice. The custom of the particular locality governs this matter. If the customary price for a visit is two dollars, then a physician who, in response to a request for his services, makes a visit with no understanding as to the amount of fee to be paid, becomes entitled to two dollars.

The rate for operations varies with the localities, but the variations are greater than for medical work. There are few hard and fast rules to guide you. In the absence of any fee table, the rates allowed by accident insurance companies will generally be accepted. Charge for your services, and charge a fair fee. If your services are not worth it, then say so and take less, if there is any just complaint, but do not underrate your services by reductions which are ridiculous from a business standpoint. If a grocer or a butcher reduced his account every time when you wanted to settle with him, what would you think? certainly that his goods were not worth what he charged for them, or that he padded his account with false charges. So with the doctor. When you have made so many visits, charge for the full number of visits; then, if you think the patient cannot afford it, deduct what you think proper and make a statement to the effect that the bill is reduced to such and such amount. The sooner after an illness that a bill is received, the less it seems. A bill sent six months after an illness comes when all of the tedious details, sufferings, and anxiety are forgotten, so many of the doctor's calls, his night visits, his hard work, etc., are not remembered. Whereas, if it comes in soon after the illness, while these things are fresh in the mind of the patient, it seems quite small and reasonable. Some one will say that people resent the frequent sending of bills. Nine tenths of these who resent it are financially no good anyway, and the sooner you lose them as patients the better for your peace of mind and for your pocketbook. So send your bills as soon as you have finished with the case. If you live in a large city, you should send bills to most of your patients every month. The dwellers in large cities do not feel the same moral obligation to pay bills that people do who live in small communities. There is no odium attached to them if they do not pay their bills. They can go to the next street and get another doctor without any trouble. If they move a few blocks, they may never

see you again. They do not get nettled easily at the sight of a monthly bill, because they are accustomed to get monthly statements from all of their dealers. In fact, many like it because it shows them where they stand financially. The butchers and bakers expect to be paid every month. Why should you not get your pay? Your prosperity will depend on the business methods that you install in the first days of your practice. If you are careless in sending bills, either on account of being too busy, or afraid of injuring somebody's feelings, you will lose a large part of your income. Anyone who does not put the value of your services above the fact that you send him a statement, let him go to the other doctor and you will be glad to get rid of him.

People with property need not be pushed so hard, but the sooner your bills are paid by all, the better. Another doctor may be brought into the family, their business may be suddenly ruined, they may move out of the town, or a thousand other things may happen to keep your money forever out of your pocket. Besides, if they pay, they will feel more free to call you if any one else in the family is taken ill. Oftentimes, if people owe a bill they will try to get along through minor illnesses by the use of household remedies; whereas, if the bill is paid, they will send for a physician. In case another account is run up before the first account is paid, you may have to reduce the total bill. You may find that old Doctor Jones never sent a bill in, or that Doctor Smith only sends his account in once a year. That should make no difference with you; you are of a new generation and expect to make a little more than the mere existence that Doctor Smith and Doctor Jones have derived out of their practices. Even your best families should get a bill once in four months.

You will often find yourself in the following predicament: You will treat a poor family for quite a long case, and if they have not been able to pay anything on account, the bill will be very large, so large that they can never hope to pay it. Better state the full amount and reduce it half or less, so as to bring it within their means; many times you will be unable to get anything for your services, because the people are too poor. Treat these poor people just as considerately as your good patients. It has ever been the privilege of our profession to minister to these poor unfortunates. Generally it is better to treat them in their own homes unless they can come clean to your office. You will be paid in gratitude, which is often better than the yellow gold of some of your wealthy and cranky patients.

If after sending several statements to a patient you begin to think a collection doubtful, send a polite note along with the bill, calling his attention to it and stating that you need the money on account of some pressing obligation. Write several letters and try to get an acknowledgment, so as to keep the account alive. If after waiting a month or two you get no answer, place it in the hands of a reliable collector for collection, or you may go around after it yourself, if you have the assurance to do so. Except with big bills, and with people owning property, it is not ad-

visable to sue, as it costs more than you can get. With bad bills it is better to settle for half and close the account in any manner, because patients who owe you will keep others away. They are ashamed to meet you, and if they see you coming along the street will cross over to the other side, remarking to their companion that they do not like to meet you, as you were the means of almost killing their Lillie or John, etc. If they must remain in the sick room while the doctor is there, they will dissuade others from sending for you in accidents, etc., by the same excuse. In your financial dealings, try to get the money without appearing unduly anxious to get it; this is a nice art. If you are absolutely fair and honest to every one, you will unconsciously acquire it. Your losses should not average more than five per cent. of your returns.

COLLECTION OF DISPUTED CLAIMS.

In most States claims for services must be filed within two years. You must prove that you have been employed and that your services were accepted. Parents and guardians are responsible for their children under age. You must show in court the date of visits, and the amount should be charged up each day under the visit mark. This is not always insisted upon, but it is a safe thing to do. When the patient has died and left an estate, you file the bill with the executors, who will arrange for its payment. If the patient had no relatives or executors, you file your claim with the public administrator, who will pay you if there is anything left after the undertaker's bill is paid. Employers are not responsible for service rendered to employees, unless they personally order it. When you have attended a patient through his last illness, and after death the friends come to you with an insurance certificate to fill out, make up your mind if the friends are likely to pay the bill. If not, take the certificate to the undertaker and both of you can arrange to be paid as soon as the company will pay the claim. In some instances you can find out from the company the precise time when they will settle and you can then be present.

No patient is too poor to treat. Do not send the poor patient or any other one to a dispensary in order that he may save the expense. Get the experience and the gratitude yourself. No patient who goes to hospital or dispensary ever afterward has the same regard or respect for you as before, because there the personal worship or idolatry is lost, since he realizes that other men are just as clever as you are, or maybe other patients that they meet there will convince them of the superiority of some one else. Whatever the reason may be, they never have quite the same confidence in you. Once a patient gets free treatment he is like the rest of us who, when we once get free tickets for a theatre or railroad journey, never afterward feel like paying for similar services.

If you can do absolutely nothing for the patient, send him to one of your young friends who is struggling to get experience in that particular specialty. He will be glad to treat him for the experience, or for a very small fee. The patient will appreciate it as a favor.

Do not be in a hurry to send patients to the hospital. This is a failing with many young doctors, who, in their rugged honesty, are anxious to save the patient expense, or, more often, to get away from the responsibility of difficult or chronic cases. These are the very cases that you should strive to study, and which will bring you your reputation. Do not suggest hospital unless some grave operation is indicated which the patient cannot afford to have done at home. The laity do not view hospitals in the favorable light that you do. To them the sympathy of friends, the hundred and one comforts of home, more than counterbalance the sight of trained nurses and frequent examinations. Few people are anxious to go to hospitals, and it is your business to treat them at home. If you cannot do so, then you are a failure in so far as that particular case is concerned.

One might go on indefinitely pointing out how it is possible to prevent the evils that threaten the profession from a financial standpoint. Certain it is that a better knowledge of economics would prevent many a young man from becoming a charlatan or an abortionist. As was said before, a man must live, and temptation is an easy mistress when there is no visible means of a livelihood.

It would be manifestly impossible for me to cover all, or any large number of the foregoing subjects in the time allotted to me to-night. These and similar subjects are treated *in extenso* in a forthcoming work.¹

204 WEST 141ST STREET.

TEN SEX TALKS TO GIRLS.

BY IRVING DAVID STEINHARDT, M. D.,
New York.

IX.

Now we skip an interval—that of the birth of the child and what goes with it—and take up child management. The management of a child begins at birth, and if you institute it properly then, you are going to be saved many miserable hours of disturbed rest and much discomfort in the future. Babies can be made sources of great pleasure and happiness, or little tyrannical disturbers of the peace, quiet, and good tempers of the household. They are very easily spoiled and are quick to learn if they can impose upon those around them. You all see, therefore, the great necessity of proper training, and the earlier that training is instituted the better for all concerned, including the baby. You might think it a very hard task to train a baby to a certain definite programme in life, but if such is your idea you are entirely in error. Nothing is easier if you undertake it in the right way. Do not let supposed neighborly baby experts turn you from what you have set out to do. The rules are alike for the babies of the rich and the poor, the only difference being that, carried out in the babies of the former class, their health and the nurses' well being and comfort prosper, whereas with the latter class

the real mother of the baby gets the benefit along with her baby. And here is the strange part of it all—the mother who has no hired help to assist her in the daily household work, and therefore would be the one most in need of a definite plan of management for baby, is the very one whom we find it hard to make profit by the advantages of having definite plans for the baby's daily programme. Yet she is the one who needs such a system the most. She objects, because she thinks it would be too hard to carry out, as if a slipshod manner of doing things, a hit and miss way, is not very much harder, both physically and mentally.

First, let us talk over the matters of the baby's feeding and sleeping, as they usually go somewhat hand in hand. Baby needs food more or less often, the exact interval varying with its age and development. Do not forget the latter part of this statement. It is of prime importance. The younger the baby in age and development, the more often should be the feeding times, with a gradual lengthening of the time interval as the baby grows older in age and development, until we finally come down to the time of the customary three meals a day. The intervals of time and the number of feedings a day are the same for both breast fed and bottle fed babies. The amount of food required by a baby, both as to quantity and strength, is decided, not by the baby's actual age, but by the age it appears to be from its development. It is better to underfeed a baby slightly than to overfeed it. The usual interval between feedings in a new born baby is two hours during the day, and four hours during the night; in other words, only one feeding between ten o'clock at night and six o'clock in the morning. You can readily see the comfort in such a rule or programme. It means practically an unbroken night's rest for both mother and baby. Is it worth while? Just ask someone who has tried both plans, the wrong one first, and then the right one. The emphasis they will put on their answer, "yes," will leave no doubt in your mind. But you ask, how can we tell the baby we want it to do things this way? For any one to sit down and talk to it, and explain everything would be a waste of time and energy. True, but we have an easier way. We train the baby to this routine by the very simple method of deciding at what hours it should be fed, hours which must be the same every day, and then offering it food at these times only, waking the baby up if it happens to be sleeping. Very soon you observe that baby is more reliable than the clock, and is awake right on the minute for its feedings. Now, use of our powers of observation has taught us that babies have short and long periods of sleeping, and that is where we are able to arrange for the long sleeps at night. The frequent day feedings prevent baby from getting in a long period of sleep during the day, so by being left undisturbed at night, baby gets in its two long periods of sleep. My instructions to my patients are always to let the baby sleep as long as he will after the ten o'clock feeding, so that in a very short time baby decides to sleep the entire night through without any "midnight supper." Now when a mother has to do all her housework alone, it is a great help to know just what hours she can count upon as being her own, and then she can

¹Building up a Private Practice: A Textbook on Medical Economics. J. B. Lippincott Company.

plan her duties accordingly. She knows when she will have to attend to her baby, and at what times the baby will be sleeping. As a baby grows older it will not sleep so much; but again we see to it that its daytime naps are not of sufficient duration to interfere with its long periods of sleep at night, and the feeding schedule is also arranged so that the first feeding of the day will be between six o'clock and seven o'clock in the morning and the last feeding at night somewhere around ten or eleven o'clock. The usual feeding intervals, depending upon age and development, are two hours, two hours and a half, three hours, three hours and a half, and four hours. After the last interval I usually jump to a programme of three meals a day. If a baby desires it, I allow one night feeding until the child is six months old. Any time the child does not awaken, it shows it is not wanted, so I allow it to go without. The ten o'clock or late evening feeding I allow for a few months longer, but stop it immediately the child shows a lack of inclination. You need not be afraid to awaken a sleeping baby at its feeding times. Very soon it will get the habit and awaken itself at these times. I mention this fact because there is an old time superstition that it is bad to awaken a sleeping baby. It is true that it is better to awaken it without any shock or excitement, but that can easily be accomplished.

The only proper food for either breast fed or bottle fed infants is milk, until the child is about nine months of age. Remember this point and stick to it when you are mothers. Preach it to every mother you know. Stomach troubles come from improper food, and under this heading come spoiled food and other things which are not food, but rather poison so far as babies go. I refer to candy, melons, soda water, etc. O yes! Some people are silly enough to attempt to give infants these things. There is no better or safer food for the young infant than that which Mother Nature puts into the female breasts. Good mother's milk is the food *par excellence* for the baby. It contains everything the infant needs for its development mentally and physically, and breast fed infants are always likely to excel the bottle fed. It behooves every mother, therefore, to nurse her offspring, and when she finds herself able, to thank God for the blessing. It means lots of worry saved to her, and much health and happiness gained for the baby. But even breast milk can be bad for the baby, if the mother will not take the proper care of herself to keep her milk of the proper quality for the baby's digestion. Too rich a milk will give the baby a colic, diarrhea, and vomiting. Too poor a milk will cause the baby not to thrive, even though the quantity be large. It is easy, however, to keep breast milk proper in quality and of a sufficient quantity. The mother is asked to lead a quiet, tranquil, even life, free from excitement or sorrow, and filled with love and happiness.

The nursing mother must avoid constipation and take plenty of fresh air and exercise. Overindulgence in the marriage relation is harmful. She should eat plenty of good plain food, but there is absolutely no necessity for overfeeding in the ordinary case. Tea and coffee are not good, but a little of each can be taken if desired. Drinking milk is very good, likewise taking plenty of good drink-

ing water. Oranges and cooked fruits are good. The eating of highly seasoned or overrich food is bad, likewise the ingestion of anything containing vinegar or other sour materials. Overfatigue or sudden shock will affect breast milk, likewise the expectancy of becoming a mother again. Occasionally the menstrual period will affect the breast milk. To breast feed babies rarely is water given between meals, except during the warm spell.

Now as to the baby whose mother cannot feed it naturally and who therefore must be bottle fed. Bottle fed infants will do well and thrive also if they get milk which is suited to their digestion. Next to mother's milk, the milk from the cow is most universally used for baby feeding. It is different from mother's milk and therefore must be diluted to make it as near like mother's milk as it can be made. This dilution varies with the age and requirements of the baby, and instructions as to it should be obtained from the family physician. It is not safe for the mother to take this task upon herself, because each and every baby needs to be studied and fed accordingly. You have all seen the attractive advertisements of various so called infants' foods. My advice to you is to read the advertisements and pass on. In the normal baby they have no use, and still less in the abnormal feeding case. In some cases of constipation, one may use a little of some malted food for a short space of time under the orders of a doctor. Bear in mind that fat babies do not necessarily mean healthy ones, nor lean babies unhealthy ones. The doctor judges whether the baby is getting the right kind of food, be it a breast or a bottle fed infant, by noting if the baby increases in weight a certain number of ounces a week, by the general aspect of the baby, whether it is happy and cheerful as a baby ought to be, or whether it is peevish and uncomfortable as a baby ought not to be, by the character of the urine as judged by the odor of the diaper, and by the baby's movements.

These latter give much information to him who knows enough to read what they indicate. It is very true in infant feeding that "Every little movement has a meaning all its own," if I may borrow this phrase of a recent popular song. It will surprise you to learn that even small infants can be taught habits of cleanliness if the mother is patient. It will pay her to be so, for it will save her much washing of diapers. The key is observation. If the mother will observe the time her baby usually soils the diaper, and will seat her on a commode a little while before that time, and show the baby how to push a little to have a bowel movement, she will be surprised to see how quickly the baby will learn this first lesson in establishing a daily habit of the bowels and abide by it. It is the same in regard to the wetting of diapers. It can practically be done away with. As to how long it will take the baby to learn this will depend on the intelligence of the teacher and the baby.

Babies usually receive two baths a day, one in the morning and one before going to bed, and they certainly should have at least one bath a day always unless some sickness prevents. Cleanliness is a most important thing to a baby and therefore diapers should be changed immediately upon being

found wet or soiled. A baby's clothes are usually changed daily. The baby's bath should not be a hot one nor should the baby stay in it too long. It should be given in a warm room and the baby wrapped up in a big towel immediately upon being taken out.

Babies should be weighed at least twice a week, but never immediately after a feeding. In the first few weeks of life the main business of the baby is eating and sleeping, and the less handling and other kinds of attention it gets, the better. Later on, there will be times when the baby is neither sleeping nor eating. It may then with advantage be carried about a little, but never pick it up when it is crying to be picked up, or to hush its crying. When a baby learns it can have what it wants just by crying for it, you will have a fine spoiled baby on your hands. Baby must be willing to lie quiet when you want him to, or to sit in a chair, later on, amuse himself, and be happy to be treated to a walk around when you can give it to him.

Coming back to the question of food, I will say that when baby gets to be about seven to nine months old a gradually increased amount of fresh orange juice can be given about an hour and a half after the first morning feeding. The usual amount to start with is two teaspoonfuls. At about eight to nine months of age a baby is usually introduced to the mysteries of beef juice—not beef tea—and strained oatmeal, both to be started in small quantities and given on alternate days. This small quantity is gradually increased to larger amounts.

From about the sixth to the eighth month baby usually decides to get some teeth, and the two lower middle incisor teeth make their appearance, and from that time on other teeth make their bow to the world in the baby's mouth. Now the fact that the baby has a few teeth, does not mean that it is ready to join the family at the festive board and eat anything and everything that they do. Far from it. The feeding must be just as carefully regulated as before. I am never in too much of a hurry to give the baby solid food. A little while after the baby has become accustomed to beef juice, I permit mutton broth and chicken broth. At present I shall limit myself in my talk to the first year of baby's life. The food for the baby must always be of the very freshest and best in every way. When in doubt as to whether it is good or bad, throw it away. That is the safest plan to follow. Be sure of the contents of the bottle before every feeding. Know by tasting the contents of the bottle just before each feeding, that it is good. To taste it, however, do not put the nipple of the bottle into your own mouth, nor the bottle itself. Shake a little out into a spoon, and by tasting this quantity learn whether the food is right or not. Your mouth may be clean, but the chances are that it is not so from the medical standpoint, and besides you would not care to use the unwashed fork of another. Do you see the point? Baby must be taught good habits while young, and subsequent training will be very easy. The bottles in which baby's milk is going to be kept must be washed clean every day and then boiled for fifteen minutes. The nipples for the bottles must be kept in boric acid solution when not in use. In breast fed babies the nipples of the mother's breasts

should be washed off with boric acid solution before each feeding. The baby's mouth ought to be washed out very gently before each feeding with a swab soaked in boric acid solution, but should not be so wet as to drip liquid into the baby's throat. In summer time particularly, must great care be used in regard to the baby's food and its containers.

The best time to exercise care is *every day*, whether it be in the spring, summer, autumn, or winter. Babies who are bottle fed should have fresh boiled water, which has been cooled, several times a day between feedings. As for grown up folks, fresh air is good for babies, by night as well as by day, and they should have plenty of it, but as yet I can see no sense in exposing them to extreme weather of any kind with the idea of toughening them, for sometimes they are just contrary enough to die in the toughening process. Be moderate. Do not overdress them, do not underdress them. Keep them warm and comfortable. Do not take them here, there, and everywhere. You may enjoy it, but the baby will not. Do not continually jump and toss the baby about. She is not a toy, nor yet a medicine bottle with a "shake well" label on it. Excitement and shocks are bad for the growing and developing nervous system of the child. Keep out of crowds and close places, so far as is possible, such as stores, factories, etc., where the air is sure to be bad, with your babies. Strange as it may seem, it is true that most babies do not enjoy moving picture shows and like places of entertainment. They feel as if a nice baby carriage ride in the fresh air would be more enjoyable to them personally, and much more beneficial to their health and appetite.

Babies thrive on love and the right kind of attention, but are liable to pine and fade away without it. They were made to love, hug, and kiss, in a nice, quiet way without in any manner getting them duly excited. No kisses should be given on baby's mouth, however. Babies were not given to their mothers to turn over to nurse girls, of more or less experience, so that the mothers could continue their so called social duties—an awful misuse of the word duty, by the way—or suffragette campaigns. The real wife and mother can exert more influence of a political kind than our would be female voters. It is noble to be a clubwoman working for some good purpose, but the proper care of her own children should be a good enough purpose for any woman to work for. After they are properly trained and have received your daily attention, any time that you have left over you may devote to other things.

If each and every mother would properly train her sons and daughters, much of the evil which the women's clubs are seeking to end, would cease to exist because of the highmindedness of their sons and daughters and the general good qualities of the coming generation. Reform at home should be first. It should be like charity, and according to the old saying "Charity begins at home." The lot of the working girl can be benefited by better pay and fewer working hours, as well as by working girl's clubs, supported as a hobby, perhaps, by several women whose husbands are perhaps very bad employers in more ways than one, so far as consideration for their employees goes. Cannot the wives

of these men do better reform work in their own homes, endeavoring to improve their own husbands' ideas of common humanity, and also seeing to it that their own children have better ideas and ideals in this regard than have their fathers? As to the poor mother, the same applies, so far as having her home for her centre goes. Instead of being a neighborhood gossip, and having her home the meeting place for the neighborhood scandal mongers, let her efforts be to benefit her husband and stimulate him to make efforts to get away from the baser surroundings and thoughts to higher levels. Let her efforts be to make her home more attractive to him and his friends than the corner barroom. Let efforts be to make her growing children real men and women, instead of just mere people like so many are. In her efforts to improve and aid her husband and their children, she cannot help but elevate herself, that is if a real wife and mother can rise to any higher level than that which she has already attained.

310 WEST NINETY-NINTH STREET.

SPECIFIC THERAPY OF CANCER.*

BY ISAAC LEVIN, M. D.,
New York.

Within the last generation surgery has undoubtedly accomplished a great deal in the treatment of cancer. By the aid of the modern methods of early diagnosis and improved operative procedures, the percentage of patients who remain radically cured is ever increasing. Nevertheless, the overwhelming majority of cases succumb to the disease, either through local recurrence or through formation of metastases in distant organs. The search for some more effective local or general method of treatment, is therefore perfectly legitimate and continues incessantly. A volume could be filled with the names of the remedies employed, and, what is most remarkable, all these remedies were asserted to be very effective. Indeed, the countless number of apparently successful therapeutic measures may create an impression that cancer is the easiest disease to cure. This apparent success of all the therapeutic procedures is due to the biological characteristics of the disease. A malignant tumor consists of groups of cancer cells, surrounded everywhere by a connective tissue stroma containing the bloodvessels which nourish the tumor. The cancer cells proliferate and increase in number very rapidly, so that the formation of new connective tissue and bloodvessels cannot keep pace with it. As a result, the cancer cells which are situated in the centre of a large tumor at a distance from the bloodvessels, die of starvation and become necrotic. These necrotic central areas liquefy and are absorbed, the tumor decreases in size, and the patient apparently improves. The smaller tumor finds again a sufficient blood supply and begins to grow anew. Thus apparent improvements and exacerbations take place without any treatment. The necrotic area in

malignant tumors, growing on the surface of the skin and mucous membranes, is not absorbed, but usually sloughs off, and in this manner the size of the growth is decreased. Similar sloughing off of cancer tissue is the cause of the constantly changing amount of obstruction to the passage of food in carcinoma of the esophagus.

In practically every nonoperative method for treatment of cancer the same results, namely: Improvement in general health, cessation of pain, and softening and decrease in the size of the tumor are relied upon as proof of the cure. Of these symptoms only the last two are objective and they can take place without any treatment.

Time will permit the perusal of only a few of the most important methods of treatment, but their analysis will indicate clearly the value of all cancer cures. All the methods may be divided into two classes, one acting upon local application and the other having a general action when introduced into the circulation.

The older nonoperative local method of treatment consisted in the employment of caustics, and the inferiority of such method to the knife is self evident. To the same class of purely local therapeutic measures belong the Röntgen rays, radium, and fulguration. These three agents seem to be most effective in the whole field of nonoperative treatment of cancer and have undoubtedly the capacity of destroying cancer tissue upon local application. But in order to be specific, the remedy must have a selective action on the cancer tissue and a capacity to penetrate to the metastatic tumors of the internal organs. Neither of the three agents possesses a great penetrating capacity. Very recently new methods were devised to penetrate with x rays the whole organism. The technique is not yet perfected, and even if the ideal penetration is reached, it is questionable whether the rays will be as effective on the internal cancers as on epitheliomata of the skin.

The following remarks must be taken into consideration in connection with the supposed selective action of these agents. Different cells of the organism react differently to the same noxious agents. Inanition, for instance, may greatly diminish in bulk the fat and muscle tissue of an animal and leave the brain intact. The life of an individual cell is shortest in those tissues in which the creation of new cells is most rapid. Cancer cells, as was stated above, become frequently necrotic without any treatment. Undoubtedly, any noxious agent applied to an epithelioma of the skin will sooner affect the cancer than the normal skin. But while the cancer cells in the centre of the tumor become necrotic, the periphery of the tumor continues to grow. By the use of x rays and radium actual results are obtained only in comparatively benign conditions, like ulcer rodens or lymphosarcoma. Doctor Bevan, of Chicago, a noted surgeon with a great deal of experience in the treatment of cancer, advocated, in 1903, x rays as the treatment of choice in slowly growing superficial epitheliomas, and as postoperative treatment in carcinoma cases, but at present he does not recognize x rays as the agent of choice, even in superficial epithelioma.

*Read at the meeting of the Eastern Medical Society, May 10, 1912.

Fulguration, or the application of electric currents of high frequency and potentiality, has been advocated since 1906 by Dr. Keating Hart, of France. Doctor Czerny, of Heidelberg, was at the beginning an enthusiastic advocate of this remedy, and thought that, although it was a local remedy, it had a selective action on cancer cells. In his more recent communication he states that it acts purely as a cauterizing agent, has no penetrating power, and leaves extremely painful burned surfaces. Another fact noted by Czerny in one case as a result of fulguration, was an erosion of blood-vessels with fatal hemorrhage. This accident shows clearly that fulguration has no selective action on cancer, but that it cauterizes normal tissue as well. Thus x rays, radium, and fulguration are not specific remedies, have only a local effect on superficial skin cancers, and consequently have a very restricted usefulness.

All other nonoperative methods of treatment are supposedly general in their action and were devised usually as a result of some preconceived theory as to the etiology of cancer. Dr. John Beard, of Edinburgh, advocated, in 1902, a method of treating cancer with hypodermic injections of trypsin and amylopsin. The theoretical considerations of Doctor Beard will not be discussed here. His contention was that the remedy liquefied the tumor. The method aroused a great deal of attention. More than 500 physicians used it and over a hundred articles were written. Doctor Bainbridge gave the method a thorough trial for a period of three years, and came to the conclusion that it was absolutely valueless. A method of treatment based on theoretical considerations somewhat similar to those of Doctor Beard is advocated at present by Fichera, in Italy.

A different mode of reasoning was the cause of the method advocated since 1890 by Doctor Coley, of New York, of treating cancer with mixed toxins of the streptococcus of erysipelas and of *Bacillus prodigiosus*. The basis of this method consisted in the observation that an intercurrent attack of erysipelas may cure a sarcomatous tumor. In order to estimate correctly the results obtained with this method of treatment, the fact must be considered that successful results are obtained only in sarcoma cases. The clinical picture of sarcoma is very variable and, as Doctor Bloodgood, of Baltimore, has shown recently, many tumors which are true sarcomata microscopically, are clinically benign. Furthermore, after more than twenty years' trial of the remedy, the author, in a search all over the world, could collect fewer than 200 sarcoma cases apparently benefited by the treatment. Consequently the value of the method does not seem to be great. Doctor Bevan, who himself has treated forty cases with the toxins, and has seen a number of cases in the hands of other surgeons, has never seen a case cured.

None of the other methods advocated and frequently discussed in the lay press will bear an objective scientific scrutiny. Doyen devised a serum against *Micrococcus neoformans*, which parasite he considers to be the cause of cancer. Otto Schmidt treats cancer with antimeristem, also an

antiparasitic substance. Hodenpyl treated cancer patients with injections of an ascitic fluid from a woman who was apparently spontaneously cured from cancer of the liver. Subsequent observation showed that the original patient died from metastases, and that all the patients who have seemed to be benefited by the injections ultimately died from the disease.

Thus the analysis of all nonoperative methods shows clearly that up to the present there does not exist a single agent which is actually specific for cancer. The disease takes usually a chronic course, and may recur three and even twenty years after the primary tumor was removed. Not a single remedy, with the exception of Coley's toxins, has been tested long enough to exclude the possibility of such a recurrence. Furthermore, it seems very apparent in a number of cases that a correct diagnosis of the nature of the disease was not made before the course of treatment was undertaken. Only a few days ago Beebe and Berkeley reported on a New Antiserum for Cancer, which they tried in sixteen cases. Following is the conclusion in their own words: "By successive injections of a specific human cancer extract into an alien mammalian species, it appears that a serum may be developed, which, when injected intramuscularly, or better intravenously, in increasing doses, into the original host, is followed by rapid regression and disappearance of the remains of the tumor." Of the sixteen cases reported the remedy seemed to have benefited only three cases, of which two were carcinoma of the breast and one carcinoma of the urinary bladder. In the latter case no microscopical examination was made and the diagnosis may be questioned. Furthermore, the method was tried only for six months, and it was consequently entirely premature to report it.

In view of all these failures it is of vital importance for all future research to consider whether it is possible, *a priori*, to expect to create a *specific therapy* against cancer. In order to answer the question, it must be determined what is to be considered a specific remedy. A therapeutic measure, to be specific, must act directly upon, and render innocuous the agent causing the disease, in contradistinction to a symptomatic remedy, which acts on the disease indirectly by regulating or stimulating the functions of the organism. Ehrlich was the first to show the significance and mode of action of specific therapeutic agents.

It is very important to bear in mind the direct relationship which exists between *specific therapy* and *immunity*. The entrance of pathogenic parasites or other noxious agents into an organism, creates in the latter a condition of active resistance to the noxious influence of the former. The organism may conquer and become immune against the disease, and such an *immunity* is called *active*. The immunizing substances formed by such an organism and circulating within its serum, when introduced into another diseased organism, may cure it from the disease, and at the same time render the organism *passively immune* against the same disease. Such an immunizing serum is a *specific remedy* against the disease and the method of treat-

ment is called specific *serotherapy*. Certain drugs or chemicals, as for instance quinine, atoxyl, or salvarsan, when introduced into a diseased organism, are capable of killing the parasites without affecting perceptibly the organism of the host. An organism into which such a chemical is introduced and circulates, is rendered passively immune against the parasites. Such a chemical then is both an immunizing substance and a specific remedy. This method of treatment is called by Ehrlich specific *chemotherapy*. Consequently, to create a specific therapy or an artificial immunity means practically the same thing.

Not every disease is adapted to a specific treatment; an organic lesion of the heart, for instance, can be treated only symptomatically. Specific therapy is *à priori* possible in all those diseases against which a condition of immunity may be created. It is impossible to determine whether human cancer is adaptable to specific treatment. The disease takes a chronic course. It may recur as long as twenty years after the primary onset of the disease, and the cases of apparent spontaneous cure are so rare that no conclusions can be drawn from them.

The experimental cancer research of the last decade has shown a way out of the difficulty. Most of the species of lower animals suffer from a disease analogous to human cancer. Furthermore, white rats and mice, not only contract cancer spontaneously, but the disease may also be introduced artificially into these animals with the greatest ease. The study of cancer on these animals is easier than in man, because, among other reasons, the whole life cycle of these animals is only two years and cancer kills them in about six to ten weeks after inoculation. Consequently the whole process goes a great deal more quickly than in man.

Now, the most important phenomenon observed in the course of experimental cancer research is the immunity which a certain number of these animals present to the growth of the inoculated cancer. When 100 rats or mice are inoculated with cancer, only fifty per cent. to eighty per cent. of the animals grow the tumors. This immunity is apparently natural with the animal. It has been further shown that by introducing certain substances shortly before or after the cancer inoculation, the number of the animals which do not become diseased may be greatly increased. In other words an *artificial immunity to cancer* may be created in these animals. It would lead too far to go here into the details of the methods and mechanism of this immunity. Those interested may consult my technical publications. Suffice it to say that my own investigations, and the investigations of Sittenfeld and myself make it very probable that immunity in experimental cancer is an active immunity quite analogous to the similar condition in infectious diseases. It must be stated here that the fact that an immunity may be created in these animals does not indicate that cancer is a parasitic disease. Indeed all the best work on the subject has shown that parasites play no rôle in the etiology of the disease. It was also shown that an immunity may be created within an organism by the introduction, not only of parasites, but of any kind of foreign material.

Since a condition of immunity may be created, it is *à priori* possible that a method for specific therapy may also be devised for experimental cancer. The investigations of Blumenthal, Carl Lewin, and myself seem to indicate that a certain percentage of the diseased animals may be cured by injection of autolyzed tumor tissue. Wassermann seemed to have obtained still better results by an intravenous injection into cancerous mice of a chemical combination of eosin and selenium, i. e., by a *chemotherapeutic agent*.

It seems possible that ultimately a specific remedy will be found, at least in experimental cancer. But at present all the results are very unsatisfactory. The true nature of the therapeutic action of the substances is not known. The same autolyzed tissue, the same chemical combination of eosin and selenium may be active in one series of experiments and not in another. It will require years of laboratory research before real light is thrown on the subject. Even then, there will still remain unsolved the most difficult question as to the manner in which the results can be transferred to the treatment of human cancer. To the profession at large the most practical advice which a laboratory worker can give is to wait at least five years before trying a new specific cancer cure, no matter how great the reputation of the man who advocates it. Meanwhile, in early diagnosis and radical operative treatment is the only hope of the patient.

THE PATHOLOGICAL RELATIONS OF URINE TO MENTAL AND NERVOUS DISEASES.

By S. R. KLEIN, M. D., PH. D.,
Chicago.

Quantitative changes in the urine are often observed in diseases of the nervous system. For instance, attacks of hysterical excitement are followed by copious polyuria of short duration, and in all patients of the neurotic type any nerve tension may induce a milder degree of polyuria which may continue for days or for weeks. In such cases the urine is light in color and of low specific gravity, differing from the normal excretion only by its extreme dilution. Less frequently, on the other hand, oliguria may occur; even complete anuria has been met with in hysterical women, a condition not to be confounded with the frequently encountered hysterical retention of urine.

I remember a case (Teplicz, Austria) where for three days continuously was observed full retention of urine. I have seen nearly 400 cases of epilepsy in the Clarinda State Hospital for the Insane, 250 of which showed polyuria, nearly 100 oliguria, and about fifty retention of urine after each attack. As assistant physician and pathologist I had the opportunity to observe those very interesting cases day and night, and found that the urea—not as many authors say—was increasing after the epileptic fit, but still remained in the same quantity as before the patient had been prostrated.

Professor Mendel, of Berlin, mentions in his

clinical observations, that in ninety per cent. of the epileptic cases there was excess of uric acid, also of urea and phosphates. In cases of neurasthenia, Defleury (*Bulletin général de thérapie*, 1900) observed diminution in volume, with high specific gravity, and increase of earthy phosphates to the alkaline phosphates; he also noticed an increase in the chlorides, and lowering of the oxidation coefficient.

The occurrence of an excess of phosphates in the urine in cases of nerve diseases was first given out by Bruce Jones, in relation to meningitis. As the result of a series of interesting investigations on this subject, Ivanoff (*Roussky Vrach*, 1903) found that in so called phosphaturia the amount of phosphoric acid is below, rather than above the normal; he also found that proteid food, and foods that are rich in lime, increase the turbidity of the urine, while vegetable food reduces it, partly on account of the small quantity of calcium and magnesium salts it contains, and also because it favors the excretion of the earthy metals by the bowel. The administration of magnesium salts determines an increase in the amount of calcium excreted by the bowel, and consequently diminishes the absorption and subsequent elimination of calcium in the urine; at the same time, the amount of magnesium in the urine is increased. The turbidity of the urine in these cases of misnamed phosphaturia, therefore, is due to excessive excretion of calcium salts.

Rabow observed many cases of mania, in which the specific gravity was between 1.011 and 1.016. Lailler (*Annales de médecine psychologique*) found an increased amount of chlorides in the last period of paralysis. Rabenau (*Archiv für Psychologie*) detected in eighty-eight per cent. of paralytic patients albumin, although there was not a trace found of any kind of casts. Mendel says, that he never found sugar in the urine of his patients. König and Mendel found that the volume of urine of epileptic individuals showed an increase of nearly 1,000 c. c. after the attacks. In cases of depressive mania, Falret (*Annales de médecine psychologique*) found the amount of urine excessively increased.

Albumin is frequently found in the urine after attacks of apoplexy, in cerebral growths, and in various inflammatory processes affecting the brain. Occasionally sugar may also be present, most frequently when hemorrhage takes place into the fourth ventricle.

In Graves's disease polyuria frequently occurs, with or without the presence of sugar. In various forms of mental derangement, delirium tremens, paranoia, and melancholia, sugar has been found in the urine. In twenty per cent. of melancholic cases, Arndt (*Deutsche Zeitschrift für Nervenkrankheiten*, 1898) detected alimentary glycosuria. Indicanuria is found mostly in cases of melancholia, paranoia, mania, and especially delirium tremens. I observed one case of delirium tremens where, two hours before death, there was an immense indicanuria (red indican). The man died, after drinking for three days continuously.

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FEMORAL VARIX.

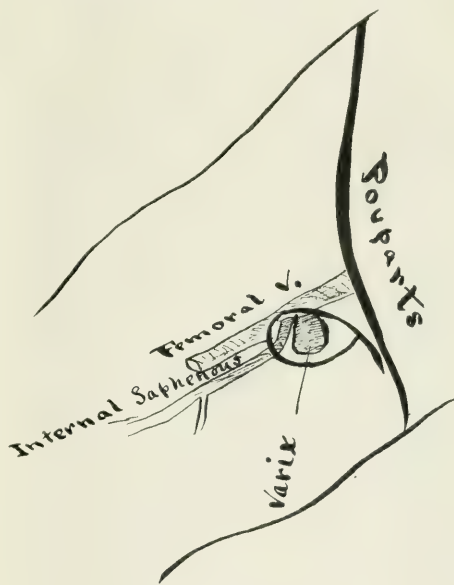
By P. T. GEYERMAN, M. D.,
Hot Springs, S. D.,

Surgeon to Our Lady of Lourdes Hospital.

Varix of the femoral vein, at the saphenous opening, is of rather rare occurrence, yet is found often enough that one should bear this lesion in mind when examining for femoral hernia, and it is for this reason that I report the following case. The symptoms are so nearly alike that one can very easily overlook the varix, mistaking it for a hernia. While not a serious matter, it is yet an unpleasant one and also not a little confusing.

CASE. Female, aged thirty-nine years, married, mother of five children. Had always been well and strong. No history of phlebitis. She came to me, complaining of a swelling in the right groin, which was painful when doing her ordinary household duties. This condition had existed for the past eighteen months and she said the swelling was becoming larger.

Examination: Rather a large woman, well nourished and



Varix of femoral vein.

of healthy appearance. A tumor the size of a walnut presented itself at the saphenous opening in the fascia lata. Upon pressure this tumor disappeared entirely. No distinct impulse on coughing, but the tumor returned immediately upon rising and again disappeared when pressure was made over it. As the possibility of varix was not thought of at the time, a diagnosis of femoral hernia was made and operation advised. To this the patient consented and returned for the operation about three weeks later.

An incision about two inches long was made just above, and parallel with Poupart's ligament, with the intention of pulling the sac up and anchoring it above. However, the finger could feel no opening which could transmit a hernia and the diagnosis had to be changed. The incision was now carried

down over the femoral ring and a careful dissection made, which disclosed a varix the size of a small walnut, located on the anterior aspect of the femoral vein. When pressure was made this sac collapsed and remained so until pressure above again filled the sac with blood. The sac was clamped, excised, and sewed over with a running suture of catgut, and a second row placed above this, also of plain catgut, completing the suture line.

The patient made an uneventful recovery and the wound healed without showing any evidence of trouble. It is now about twenty months since the operation, and the patient has no evidence of return.

Abstracts and Reviews.

CARBOHYDRATE TREATMENT IN DIABETES.*

BY PROFESSOR HERMANN STRAUSS,
Berlin, Germany.

By carbohydrate treatment in diabetes we mean the administration of one definite single kind of carbohydrate food to the exclusion of other carbohydrates, in order to decrease the elimination of sugar, and to increase the tolerance for carbohydrates, as well as simultaneously to influence favorably an existing acidosis. The carbohydrate cures are by no means new, for the same in form of milk cure, rice cure, and potato cure have been known for a long time. But they did not find general acceptance. Only the "oat cure" endured. The latter showed itself to best advantage in severe cases of diabetes, particularly in such as were complicated by acidosis. Still, many cases of this kind are not benefited through the oat cure. We can never tell in advance whether it will be successful; we have always to put up with the trial tests.

The oat cure has been used up to recent times according to a definite plan; the effect of oats was regarded as specific. Recently, however, it was found that this is not the case to such an extent as it was believed to be; for we can obtain similar results with other kinds of flours, for example, with wheat flour, and flour of unripe bananas, if but the diet is at the same time free of meat and poor in proteids. It also seems to be of great importance that the carbohydrate treatment be preceded as well as followed by a few days of vegetable-egg diet, i. e., free of meat and poor in proteids.

Through the recognition of this fact, the method of administration of the flour cures has become more liberal and more individual, and the sphere of indications has widened. A rigid regimen is not necessary; we add to a diet, free of meat and poor in proteids, an amount of flour soup, corresponding to the individual tolerance. When two days of vegetable-egg diet precede and follow, we obtain by the use of three days of flour soup a "cure week," which, according to the peculiarity of the individual case, is intercalated every two, three, or four weeks into the permanent diet, and is particularly made use of in cases of imminent coma. Re-

cently, in research work of my own, inulin, a polysaccharide of levulose, has shown itself markedly superior to the common sorts of flour, when it was baked together with eggs or administered in vegetables poor in carbohydrate—but not in the form of inulin bread; we should, therefore, not neglect inulin in cases of grave diabetes, especially if acidosis is present.

The carbohydrate treatment must always be combined with a corresponding permanent diet regimen which must conform to the conditions of the individual cases.

The ascertainment and consideration of the "food optimum" in the individual cases is above all a desideratum in the right direction for the feeding of the diabetic, which shows, at the present time, a more individual stamp than formerly. The reduction of the amount of protein in the food, as well as a larger or smaller reduction of the caloric value of the ingested food—perhaps in form of a "drink day"—must be regarded as progress of the modern treatment, the principle of which reads: Find that kind of carbohydrate of which the patient can ingest the greatest amount with the lowest possible elimination of sugar and with diminution of existing acidosis.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXVII.—How do you treat pruritus vulvæ? (Closed October 15th.)

CXXVIII.—How do you treat infantile convulsions? (Answers due not later than November 15th.)

CXXIX.—How do you manage chronic ulcers of the leg? (Answers due not later than December 16th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to Question CXXVI has been awarded to Dr. Louis Weiss, of Newark, N. J., whose article appears below.

PRIZE QUESTION CXXVI. THE TREATMENT OF BRONCHIAL ASTHMA.

BY LOUIS WEISS, M. D.,
Newark, N. J.

The paroxysm is treated by me by hypodermic hydrotherapy, which is the subcutaneous injection of water for therapeutic purposes. From one to ten c. c. of sterile water have been found by experience usually sufficient. Normal saline solution may be used if preferred, but it is mainly the water that is the active agent, and not the infinitesimal amount of salt in solution. The injection is made into the

*Read at a meeting of the Northern Medical Association of Philadelphia, October 12, 1912.

subcutaneous tissue where it is most convenient. If the patient can lie down it may be injected into the abdominal tissues. If the patient is compelled to sit up, the space between the shoulder blades or the arm offers a good site for injection. The amount of the injection should be regulated by the effect it has upon the paroxysm and upon the patient. Its effect upon the heart action is the key to the safe use of this method. The pulse should be taken before the injection. If possible the sphygmomanometer is used, but it is not absolutely necessary. Inject one c. c. at a time, with the finger on the pulse. A quick variation in rapidity of the pulse demands great caution, and may compel one to stop the injection at once.

I have used this method of treatment in a great variety of diseases for more than a year and have found an injection to have an immediate effect upon the system. In bronchial asthma the paroxysm stops immediately on beginning the injection, and if the pulse permits the entire ten c. c. may be injected.

Beside hypodermic hydrotherapy, cupping the chest is of benefit in bronchial asthma. Cupping has been sadly neglected. I shall try my utmost to revive cupping as a routine therapeutic measure in chest conditions. It is of sufficient merit to be used either by the physician himself, or under his direct supervision.

Sometimes, but I think seldom, leeching is necessary. Here again one may think that the sole benefit from leeching is the abstraction of blood. But the blood withdrawn from the circulation is infinitesimal in amount, and in no proportion to the benefit so speedily produced. This assault upon the system, like cupping or an injection from the outside, has a similar effect of causing changes in the system; a readjustment, a marshalling of the protective forces to the defense of the body, that usually results in harmony of the defensive elements and a normal condition of the individual.

There is still another similar method to which I wish to call attention. I came upon this procedure accidentally. While attempting to pass a hypodermic needle into the median basilic vein of the left arm of a tuberculous patient, preparatory to an intravenous injection of ten c. c. of sterile water, I pierced through the vein. In trying to adjust the needle, I withdrew it too far. Between the pressure of the bandage around the arm above the site of the puncture, and the blood pressure, the two punctures through the vein remained patent, and there was an immediate accumulation of venous blood in the subcutaneous tissues of the anterior aspect of the elbow. Upon the removal of the bandage the venous circulation at once resumed its usual course and the extravasated blood began to disappear rapidly. Since then it has occurred to me that this *subcutaneous bleeding* or *internal subcutaneous injection of venous blood* may in suitable cases of bronchial asthma and other diseases, be substituted for blood letting, without the loss of a drop of blood.

In bronchial asthma, as in other conditions, as well as throughout life, it is necessary to keep the gastrointestinal tract free from fermentation and putrefaction. Good catharsis in the beginning of the ailment depletes the system, and relieves the

congestion of the mucous membrane of the bronchiolet. This results in comfort to the patient. Calomel, cascara sagrada, and the salines are the cathartics I am partial to.

The diet should be moderate in amount. In the very sick and bedridden patients with high temperature, the diet should be the one that is most easily digestible. The carbohydrate foods are here best suited. They are the cereals, barley, rice, oatmeal, farina, soda crackers, and bread in soup. Later add milk diluted with water, in equal parts. During convalescence a mixed diet may be begun.

Water may be taken freely, but not cold. Cold or ice cold water constricts the abdominal bloodvessels and drives the blood into other parts of the body. The bloodvessels in the lungs being easily dilated, compensate for the constricted abdominal vessels sometimes to the point of congestion. I have seen cold water drinking aggravate and sometimes bring on a paroxysm of bronchial asthma.

Rest is important. In the aged and feeble, in whom bronchial asthma is usually very severe, rest in bed, propped up high with pillows and head rest, or in a rocker with feet slightly raised is the rule. Those able to follow their occupations should perform their tasks slowly.

Fresh air is always necessary for a patient suffering from bronchial asthma. Windows should be constantly kept open. But draughts, in spite of the much written about *draught delusion*, should be avoided, by not allowing two windows, or a door and a window facing each other, being open at the same time, while a strong air current is blowing through them. A draught may precipitate an attack of bronchial asthma.

Sometimes I administer morphine sulphate, grain one quarter, subcutaneously for the paroxysm. But on account of its weakening effect, I prefer sterile water or normal saline solution, which is strengthening at the same time. Internally, as antispasmodics, I prescribe morphine sulphate, grain one quarter to one half, with or without atropine sulphate, grain one sixtieth to one thirtieth, in a two ounce mixture. The directions are, one teaspoonful every two, three, or four hours, according to age and condition of patient. The bromides, sodium, potassium and strontium, alone or in combination according to needs of patients, are given in doses of 2.5 to ten grains each, also chloral hydrate in five to ten grain doses with or without morphine sulphate as indicated. I must confess I use these drugs very little.

The expectorants I use are pilocarpine hydrochloride, grain one half to two grains, with the bitter stomachics in a two ounce mixture containing syrup of tolu, and given in teaspoonful doses every two, three, or four hours.

Sometimes an occasion arises when, if the patient can afford it, he may benefit his bronchial asthma by seeking a suitable climate and altitude.

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Dr. George B. Hickok, of East Orange, N. J., points out that:

During attacks of bronchial asthma, particular examination should be made to detect the existence of edema of lungs, which is liable to exist with the catarrhal condition of the lungs. The disease is treated either during the attacks or in the interval of the attacks.

During an attack of bronchial asthma one of the quickest means of relief is the use of cupping, either dry or wet, a remedy which is too little used at present, but which affords the greatest and quickest relief. If the patient is robust and in good health otherwise, the wet cups will be found to give great relief. Cups may be applied to both the front and back of the lungs, especially if edema exists, and also if there is severe catarrhal bronchitis. Cupping may also be used during the interval between attacks. Bronchial asthma may be relieved by the inhalation of chloroform, or of the alcohol, chloroform, and ether mixture, by the smoke from burning nitrate of potassium paper, by smoke from burning stramonium leaves, by the use of lobelia, ipecac, tartar emetic, fumes of tobacco to produce relaxation of the system, by the use of morphine, and of morphine and atropine. During the attacks great relief may be obtained by use of the hot mustard foot bath, and of hot alcoholic drinks, to produce free perspiration; also by the use of pilocarpine or fluid extract of jaborandi to produce the same result. Hoffmann's anodyne combined with compound spirit of lavender may be used to check the paroxysms of an attack of bronchial asthma. Patients should be placed in a sitting position in bed, or in a chair with the arms supported, and with fresh air in abundance.

During the interval between attacks bronchial asthma may be treated with the syrup of hydriodic acid, which will give the greatest relief until the stomach becomes disordered, when it will be necessary to discontinue the remedy.

As expectorants, ipecac, syrupus alii (garlic), yerba santa, grindelia robusta are exhibited. Change of climate to avoid attacks should be insisted upon. Caffeine may be used for its action upon the heart. Sweet spirit of nitre may be used during attacks to act upon the kidneys and also to lessen fever.

In case of heart or kidney complications treatment should be directed to these conditions during the interval between attacks. Codliver oil with iron as indicated in anemia, and in diseased condition of the lungs should be used in the intervals. The condition of the bowels and stomach needs especial attention.

One tablespoonful of five per cent. solution of chloride of calcium, every two hours for three or four days, has been recommended during the intervals. In case of hay fever exciting attacks of bronchial asthma, applications to the nostrils should be made of suprarenal extract and menthol.

(To be concluded.)

Therapeutical Notes.

Treatment of Joint Tuberculosis.—Roland Hill, in the *Journal of the Missouri State Medical Association* for February, 1912, states that after two years' experience with the use of injections of formaldehyde solution and glycerin, as recommended by Murphy, in tuberculous arthritis, he is convinced that they constitute a decidedly helpful measure. In cases with effusion into the joint cavity, the production of fluid is rapidly diminished and in favorable cases arrested. If the fluid is turbid, it gradually becomes more serous. Simultaneously

the pain in the joint and the spasmodic jerkings disappear, and the thickening and tenderness gradually subside. The number of injections required to secure this result varies greatly, but in the average case marked improvement should follow three or four injections.

A large exploring needle, strong and tight, should be used. The solution contains two per cent. formaldehyde and ninety-eight per cent. glycerin, and should be mixed at least twenty-four hours before use. The quantity injected is two drachms in the ankle and four drachms in the knee—other joints in proportion. A firm Buck's extension is applied immediately after the operation and carried for some time after the first injections. Morphine may possibly be required for intense pain, and ice may be applied for a day or two if there is much reaction. It is essential that fluid in the joint is aspirated, and that no air is introduced with the injection.

Other measures, such as rest, good food, plenty of light, fresh air, and tonics, are on no account to be neglected.

Treatment of Erythrasma.—Sabourand, in *Quinzaine thérapeutique* for May 25, 1912, describes a plan of treatment under which this affection, sometimes also termed "inguinal intertrigo," can be eradicated in eight or ten days. The disease is due to *Microsporon minutissimum*, and occurs oftenest in adult males at the point of contact of the scrotum with the left thigh. It appears as one or several rounded, uniformly dark red areas, covered with fine scales. In treating it, daily applications should be made with cotton that has been moistened in the following solution:

R Tincture of iodine (fresh),20 grammes;
Compound spirits of ether,180 grammes.

M.

This should be applied with sufficient friction to remove the dead, horny epithelium loosened by the parasite. After allowing it to dry for a moment, a very thin layer of the following ointment is applied:

R Calomel, ... }
Tannic acid, }of each, 0.3 gramme;
Petrolatum,30.0 grammes.
M. ft. unguentum.

The ointment is then almost entirely wiped off, and powdered talcum dusted on.

Before renewing the treatment each day, the remaining portion of the drugs applied the day before should be thoroughly removed.

After ten days the treatment may be discontinued, but the patient should be kept under observation, as not infrequently recurrence takes place three weeks later. The measures already described are then repeated, and at the end of eight or ten days more a permanent cure will have been attained.

Removal of Warts.—R. L. Hammond, in *American Medicine* for July, 1912, states that large, painful warts may be removed by means of formaldehyde with much less pain than attends the use of other escharotics. He invariably uses formaldehyde of forty per cent. strength, undiluted and unmixed with any other agent. A wooden toothpick or a matchstick is dipped in it, and the adherent drop applied to the surface of the lesion every three

or six hours for two or three days. The normal skin should not be touched by the agent, as dermatitis is thereby occasioned and the liability of scar formation increased. If more rapid removal is desired by the patient, the intervals between applications may be lessened. After several days, in small excrescences, and in about a week in the larger ones, where three applications have been made daily, devitalization of the tissue occurs and, the application of the agent having been discontinued, the growth will desiccate. Upon exfoliation the dermal layer will be found clean and unblemished; if it is not, another application or two will secure the desired result. If an open sore is produced, a healing ointment of zinc oxide or simple cerate is usually all that is needed.

Sedative Enemas in the Treatment of Affections of the Reproductive Organs.—Siredey, in *Journal de médecine et de chirurgie pratiques* (through *Union médicale du Nord-est*, August 30, 1912), remarks that enemas constitute one of the best means available for relieving pain in diseases of the genital organs, and suggests the use of one of the following formulae:

(a)
R Chloral hydrate, 2 grammes;
Tincture of opium, 15 drops;
Yolk of egg, 1;
Boiled water, 150 grammes.

M.
(b)
R Tincture of opium, 12 grammes;
Tincture of belladonna, } of each 3 grammes;
Tincture of hyoscyamus, }
Tincture of cannabis indica, 2 grammes.

M. Sig.: Thirty or thirty-five drops are to be added for use to 150 grammes of normal saline solution.

(c)
R Sodium chloride, 1 gramme;
Antipyrine, 0.5 to 1 gramme;
Boiled water, 150 grammes.
M. et ft. solutio. Sig.: To this may be added 30 or 35 drops of a mixture of the tinctures of opium and belladonna.

In general, decoctions of flaxseed or of marsh-mallow root, or normal saline solution, are better borne as excipients than boiled water alone.

Treatment of Dyspnea in Nephritis.—Springer, in *Revue de thérapeutique médico-chirurgicale* for June 15, 1912, remarks that many nephritides are subject to recurring attacks of dyspnea, frequent in association with arteriosclerosis, which reacts on the cardiac nervous mechanism. In these cases the alcoholic nitroglycerin solution in daily doses of six to twelve drops is recommended by Potain. Similarly, in the most violent attacks, the inhalation of three to five drops of amyl nitrite from a handkerchief will not infrequently give relief.

Local Use of an Alcoholic Solution of Salicylic Acid.—L. G. Boutchinskaja-Yourchevskaja, in *Semaine médicale* for September 11, 1912, is credited with having obtained good results in pneumonia of influenzal origin, in that succeeding measles, as well as in pharyngitis, laryngitis, and bronchitis, by local application of a ten per cent. solution of salicylic acid and of castor oil, respectively, in ninety

per cent. alcohol. In the pneumonic cases a compress moistened with the solution was placed over the entire back, covered with impermeable material, and held in place by a bandage. The dressing was renewed whenever it became dry. A prompt and very favorable influence upon the cough, temperature, pulse, and respiration was noted, even though former like attacks in the same patients had proved refractory to all ordinary medication. In one case, tinnitus and even hallucinations of hearing were specifically noted, showing that absorption of salicylic acid through the skin had occurred.

The solution was also found effective in a case of eczema on the forearm, in which a large variety of remedial applications, including chrysarobin, had previously failed to benefit. The surrounding normal skin being protected with cotton and adhesive plaster, a pad dipped in fifteen per cent. salicylic solution and also dusted with pure salicylic acid was placed over the involved area. Marked burning set in, but the eczema subsequently disappeared, and did not recur thereafter. In order to avoid actual burns of the cutaneous surface, the author advises that in persons with delicate skins the percentage of salicylic acid in the solution used be appropriately reduced.

Treatment of Laryngeal Tuberculosis.—G. Seccombe Hett, in the *British Journal of Tuberculosis* for July, 1912, states that while very slight laryngeal lesions in an advanced and rapidly progressive case of pulmonary tuberculosis are of grave prognostic import, being frequently subterminal infections, in other cases, where there are extensive lesions of the larynx in patients with normal temperature and a chronic type of pulmonary lesion, radical surgical procedures can often be done with impunity, and achieve excellent results. Lesions of the vocal cords can frequently be arrested by absolute vocal rest for six months, if the chest condition is favorable. Enlarged arytenoids can often be reduced by deep puncture with the galvanocautery, and where this fails, Hett has had good results by punching them out; he has never met with failure of the wound to heal. Infiltrations without ulceration of the ventricular bands are best treated by successive deep cautery punctures at intervals of ten days. Superficial ulcerations of the vocal cords should be merely touched with the cautery. Curetting should be limited to large ulcers, and be employed with caution in order to avoid producing a larger breach of surface than already exists.

Where tuberculous lesions are confined to the epiglottis, the author has been much impressed by the results of removal of the body with punch forceps; the stump never failed to heal when this measure was employed in suitable cases. Even in desperate cases the extreme dysphagia, due to the infiltrated and sloughing epiglottis, was at once relieved.

Accumulation of secretion in the larynx can be prevented by the use of an alkaline laryngeal spray. Unnecessary coughing should likewise be prevented, and where it is caused by irritation in the larynx, dry inhalations of creosote, phenol, and chloroform, through a Yeo mask, worn for some hours at a time, are very efficacious.

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UNIVERSITIES AND MEDICAL EDUCA-
TION.

As far back as prior to 1835 there was considerable agitation in England on the question of the higher preliminary and general education of the physician. In the year mentioned Dr. P. M. Latham, in an address before the London University, said: "Now I am persuaded that there does not exist at this day in the profession an individual who comes up to the standard which (it is implied) all ought to reach." To-day, seventy-seven years later, we are much agitated over the advancing requirements which are regarded as essential to preparation for the study of medicine. There is little to be offered by way of contention that higher general preliminary education is not essential at the present time; but as to the scope of the higher education there is much debate.

Some there are who hold that the only solution of the question as to the necessary general, as well as special preliminary education is the acquisition of the degree of bachelor of arts or of sciences as the entrance requirement to the medical school. This brings with it insurmountable hardships to many bright and able aspirants, either through the impossibility of meeting the added financial burden, or through the great consumption of time which

shortens so materially the useful working years of the individual. Further, it is questionable as to whether a general college course insures an efficient training along lines which are of most value to the physician, such as chemistry, physics, and the modern languages. Then, too, is not much in these courses wholly aside from the interests of the medical man? Is not much that is given for the avowed purpose of broadening the intellect a great waste of valuable time which might be spent in the pursuit of subjects equally broadening and at the same time germane to medical science? One is prompted to ask, in the face of these and other equally valid criticisms of such proposals, if there is not a medium ground between the present general inadequacy of early preparation and the suggested compulsory college degree, a course that shall at once "broaden" the man and supply the needs of the physician.

Precisely such a middle ground is suggested by Dr. H. D. Rolleston in his Inaugural Address on Universities and Medical Education.¹ He asks: "Is it true, as has been and is often assumed, that the necessary general culture can be obtained in one way only?" He refers to the university degree. He concedes the value, in some respects, of a really good classical training, but believes that the majority of medical men pay rather dearly for the "luxury of any aroma of classical culture which still clings to them in late middle life to compensate for the years spent" in its attainment. He believes that the teaching of Latin and Greek should be retained so long as there is no interference with the teaching of French and German and the sciences. The dead languages, he believes, ought to be taught earlier and better than at present and they should not be pursued after the age of sixteen years. For the next two years or so the student should devote his time and best energies to the acquisition of a sound knowledge of literature, English composition, French and German, physics and chemistry, and the necessary mathematics. At the end of this time, i. e., when he is about eighteen or nineteen years old, he should begin the study of biology, anatomy, and physiology. It is probably the wiser measure to have these subjects taught by the medical college, thus permitting an adjustment of the courses so as to bring out the features of special value to the physician.

Such an outline for the middle road in preliminary education appeals strongly to the reason. It meets all essentials of the classical education; it provides that grounding in Latin and Greek, which goes so far toward conferring facility and flexibility in the use of the English language; it gives

¹Lancet, October 5, 1912, p. 927.

the working knowledge of the two modern tongues which is so valuable to the ambitious and progressive physician; and it does not make undue demands upon either the purse or the best working years. We are inclined to approve the suggestions of Doctor Rolleston and to commend them to the attention of our American medical educators as a move in the right direction, guided by conservatism and tempered with liberality.

Therapeutic Pneumothorax in Pulmonary Tuberculosis.

The therapeutic use of artificial pneumothorax in pulmonary tuberculosis is increasingly finding adherents. It consists, we may recall, in the introduction at intervals, of nitrogen into the pleural cavity, the purpose being to restrict the mobility of the lung and favor the healing process, while causing approximation of the walls of ulcers and cavities and thus facilitating local repair. As emphasized by Klemperer, however, it is indicated only in patients who have tried unsuccessfully the familiar methods, including tuberculin injections and sanatoria, and in whom the disease slowly progresses. Feretti's experience has taught him to restrict it to unilateral tuberculous processes. Any liability to hemoptysis may be disregarded, since the procedure controls this dangerous complication rapidly and often completely. The results are permanent, according to Cahn, in about one third of the cases, and fairly helpful in an additional small proportion. Other clinicians seem, however, to obtain better results. Spengler, out of forty cases, obtained favorable results in twenty-five; transient benefit in six; slight benefit in six; and complications in three. He continues the treatment one year. Robinson and Floyd noted a distinct relief of symptoms in practically all of their twenty-eight cases, the tuberculous process being arrested in eight, two of these presenting lesions in both lungs. Of Mary E. Lapham's twenty patients, eleven, who were "advanced and otherwise hopeless," were reported as "doing well," while five, including three with recurrent tuberculosis, had been able to resume their usual avocations.

The procedure is not, however, devoid of danger. While Piéry refers to seventeen cases with arrest of the morbid process, even in some instances of rapid phthisis, he lost two patients by convulsions due directly to the operation. Sillig also had a sudden death out of ten cases treated. According to Chitty, the chief dangers are pleural reflex, i. e., shock or sudden death due to tampering with the pleura, a complication which sometimes attends paracentesis for pleural effusion or emphysema; embolism from the

injection of the gas into a vein instead of into the pleural cavity; asphyxia; infection, with the production of a pyopneumothorax; pleural effusion, which occurs in thirty per cent. of all cases. Minor complications, such as faintness, dyspnea, and surgical emphysema, are not uncommon. Some complication is apt to occur, according to Cahn, in about one fifth of all cases.

Robinson and Floyd hold, however, that no accident need occur, as instanced by their twenty-eight cases, if proper precautions are observed. The reflex cardiac inhibition, to which sudden deaths are due, may always be prevented, in their opinion, by anesthetizing the pleura. "The skin is first frozen with ethyl chloride, then novocainized. The hypodermic needle, inserted at right angles, is then gradually forced through the tissues, each introduction of novocaine being followed by an interval of fifteen seconds, in which the tissues ahead of the needle become anesthetized. A minute skin incision permitting the introduction of the needle without any marked obstruction, the slight resistance of fascial layers, followed by the lack of resistance of the intercostal muscles, then give warning that the point is approaching the parietal pleura. The resistance of the latter, even when it is not thickened, is next distinguishable, and the sudden ease of advancing the needle beyond indicates that the pleural cavity is entered. At this point the method of manometric oscillation is employed to prove further that the opening of the needle is between the pleural layers." Air embolism, Robinson and Floyd ascribe to imperfect technique. An important prophylactic feature emphasized by Rhodes is the importance of strict aseptic conditions at every step of the procedure.

It is along these lines that the operation must be developed before its many advantages can be dealt out with any degree of freedom, even to virtually moribund patients. The prospect of having a patient drop dead while submitting him to a "therapeutic" procedure is not an alluring one for the average physician. When this and other drawbacks are fully mastered, artificial pneumothorax will doubtless be resorted to extensively.

The Diagnosis of Incipient Tuberculosis.

Refinement and care in diagnosis in the early or incipient stage is a natural outcome of the commendable efforts to prevent and combat the spread of tuberculosis. Everywhere, especially for the benefit of the laity, are printed and preached the early signs of tuberculosis. A prolonged cough is held up as a warning sign. When, too, the phy-

sician finds prolonged breath signs and a possible impairment of the percussion note in one or other of the apices, he is only too likely to make an absolute diagnosis of tuberculosis.

As purely scientific or clinical problems such cases might well be relegated to the class of the tuberculous, and another feather pinned in the cap of the diagnostician. But, practically, when dealing with a human being of definite worth and importance in this world, is it fair to pluck such an individual from his career of usefulness, with such a diagnosis founded exclusively on the few signs present in the so called incipient cases? Are such symptoms sufficient excuse for breaking up a home and plunging a family into destitution? These conditions were especially likely when a diagnosis of tuberculosis meant banishment to distant climes; it is a sign of light that this practice is coming into disfavor. Only too often have these cases been declared to be cleared up in a very short time after diagnosis, or the seat of the disease, "the spot," as it was called, has been located differently by each physician consulted. The economic "disease," however, the result of such a diagnosis, takes a very much longer time to clear up, and many times never clears up at all.

All the assurances to the individual or even to the public in general, that tuberculosis is a curable condition will not, thus far at least, mitigate the terror and despair that such a diagnosis creates. The actual verdict of tuberculosis, to the patient at least, should be delayed until something more tangible than cough and impaired percussion note is found.

The only safe course is to use the tact and judgment which are, or should be in the armamentarium of every physician, and to hold the diagnosis of tuberculosis in abeyance until further developments demand a frank statement of the facts. In the meantime proper treatment should be prescribed and proper advice given.

On the other hand there can be no doubt, in view of Virchow's maxim—no one without tuberculosis—that such cases are in fact tuberculous, but, in less advanced communities, they would never create the suspicion of tuberculosis during life, but would "clear up," and be found on autopsy to show healed tuberculous lesions.

The danger of the present tuberculosis preventive work is a swinging to the other extreme and seeing the bugaboo of tuberculosis in every case. An intelligent, but skeptical public soon loses confidence in the ability and the sincerity of the physician, and thus the fight against tuberculosis becomes more difficult; for without the cooperation of the laity nothing can be done.

ZELLER'S TREATMENT OF CARCINOMA.

Doctor Jacob Wolff, of Berlin, has contributed to *Deutsche medizinische Wochenschrift* for September 19th a very interesting article on Zeller's so called cancer treatment, of which we have written editorially. Wolff states that Battye, who is given by Zeller as the deviser of "acidum silicicum," is the English writer, Richard Fawcett Battye, and he criticises Zeller for not having investigated the original works of the authors whom he quotes. Wolff is a well known authority on cancer and the author of a textbook on the subject, of which two volumes have appeared (1907 and 1911), while the third volume is to be published soon. Battye, of London, published in the November, 1874, number of the *Edinburgh Medical Journal* a prescription which he used internally in cancer patients, and which became well known as *silicum losenges* and was as follows: "Pulv. silicæ, gr. i; morph. acet., gr. $\frac{1}{3}$; extr. hyoscyami, q. s.; M. ft. pil." It is stated that Battye had good results in superficial carcinoma, but before Battye and unknown to him, Franz Schuh, a well known surgeon of his time, treated two patients with "terra silicina" in doses of from four to twelve grains and had remarkable results, which he published in his book, *Pathologie und Therapie der Pseudoplasmen*, Vienna, 1854.

As to the use of arsenic in carcinoma, Ewing, in our issue for October 19th, page 773, remarks that it was used two thousand years ago by the Indians in Asia. Wolff, in his textbook also mentions the Egyptians (B. C. 1500), Oribasius, Fallopius, Avicenna, Guy de Chauliac, and others as having used arsenic in cancer. Wolff then observes that Gmelin and Gaertner advised the use of a combination of arsenic and sublimate in 1757. Jean Baseilhac (1703-1789) used also an arsenic paste, the formula of which was published by his nephew, Pascal Baseilhac, a surgeon at Paris in 1804, in a work entitled *De la Taille latérale par le périnée*. He had very good results in carcinoma of the face and skin.

We doubt very much whether Zeller has solved the cancer question. It would have certainly been better if he had studied the original literature more carefully, and if Czerny, in his turn, had been less hasty in introducing Zeller as a pioneer with a remedy tried and discarded years ago.

THE BRITISH NATIONAL INSURANCE ACT.

Study of an editorial article in the *Lancet* for October 12, 1912, shows that no agreement has yet been reached by the government and the members of the medical profession in Great Britain regarding the insurance act. "The intention of medical men not to work the act," says the writer, "is clearly very general." Signs of willingness to negotiate are few and far between, and physicians are resigning from club appointments in large numbers; the responsibility thrown upon the insurance committee and the council of the British Medical As-

sociation is thus very great, as upon them devolves the duty of indicating a route which all can follow without loss of self respect or professional prestige. The main difficulty in the way of arbitration, we should imagine, is the small probability that the insurance committee really comprehends what a physician understands by a professional visit, which is not now confined, if it ever was, to listening more or less attentively to a list of symptoms and writing a prescription for a few ounces of a galenical mixture.

RESULTS OF ANTITYPHOID VACCINATION.

Vincent reported to the Paris Académie de médecine on October 8, 1912, the noteworthy results of antityphoid vaccination in an epidemic at Avignon. As reported in *Presse médicale* for October 9th, of 2,053 soldiers of the garrison, 525 had been vaccinated before the epidemic; 841 demanded vaccination immediately after the first appearance of the disease. The record of the epidemic was 155 cases, with twenty-one deaths, all among the non-vaccinated. The conditions as to food, drink, habitation, etc., were the same for all. Nothing resembling the negative phase was evident in any of the 841 soldiers vaccinated during the course of the disease, which spared those who had received only two injections, and in some cases only one injection. This is apparently good evidence of the efficacy of antityphoid vaccination.

CONCERNING REPRINTS.

We have more than once received a suggestion that it would be a graceful act on the part of all medical periodicals to agree upon a uniform pattern of reprints of original communications, in order that anyone interested in a given subject could have a large proportion of the literature bound together in convenient volumes which he himself could index. The *British Medical Journal* for October 12, 1912, points out to a correspondent who makes the same suggestion that no such agreement is practicable, largely on account of the variations in the width of a column in different journals. Our English contemporary advises its correspondent to file his reprints in portfolios, a method which is cheaper than binding and has the advantage of rendering it possible to keep a collection of reprints on any subject up to date, and to classify and subdivide them as the subject grows.

Medical Law.

I. THE RIGHT TO PRACTISE MEDICINE AND SURGERY.

The case of *People vs. Reid*, 136 N. Y. Supp. 428, is a proceeding to review the proceedings on the revocation of a license issued to one Max Greenburg to practise dentistry, and is of interest because it is an expression by the Appellate Division of the Supreme Court of New York as to the proper procedure to be pursued in such proceedings under the Public Health Law of New York.

In this case the practitioner had practised his profession about three years, when charges were preferred against him by the board of dental examiners, alleging that he had procured his license to practise dentistry by fraud, and that his affidavits that he had passed the preliminary examinations were false, in that he had procured another to impersonate him on such examinations, and had adopted as his own the examination papers of such other person. A copy of the charges and notice of the time and place of hearing before the board of dental examiners was served upon the practitioner, and he appeared in person and by counsel before the board. Testimony was taken, argument had, and briefs submitted. After consideration the board of dental examiners found the charges true and transmitted to the Board of Regents all the proceedings had before them and recommended that the license be revoked. Up to this stage it appears that the proceedings were regular and justified by the law and evidence. Among the grounds specified by the Public Health Law for the revocation of a license of a dentist are "unprofessional" and "immoral conduct." Mr. Justice Houghton, referring to the evidence in this case said:

That practice of fraud in the procuring of a license to practice a profession is "immoral" and "unprofessional" as that term is used in the statute and is ample ground for its revocation, and the procuring of another to impersonate the applicant in examinations is fraud of the grossest character.

Moreover, the court held that it was unnecessary that the practitioner should be convicted criminally either for false impersonation or perjury in making his affidavit before his license could be revoked.

Upon the recommendation being made by the board of dental examiners to the Board of Regents that the license be revoked, the practitioner asked for a hearing on this report and recommendation before the Board of Regents, which request was refused. After this refusal the Board of Regents revoked the license and directed that it be cancelled. This revocation, without a hearing, the court found to be so irregular as to require that the determination of the Board of Regents be annulled and the proceedings sent back to the Board of Regents with a direction that a hearing be had before the Board of Regents on the evidence taken before the board of examiners.

In arriving at this conclusion, the court examined the law relating to the practice in the revocation of licenses of physicians and of dentistry. The law provides, in case of dentists, for a trial before the board of dental examiners who make their report and recommendation to the regents, who "may suspend the person so charged from practice of dentistry for a limited season, or may revoke his license."

In case of physicians, a trial is had before a committee of three appointed by the board of medical examiners. After the trial, if the committee shall unanimously find that the charges are sustained, and shall recommend that the license be revoked or registration annulled, the Board of Regents may then "in their discretion revoke said license or annul said registration or do both."

As to the effect of these statutes upon the right

of the accused to a hearing before the Board of Regents, Mr. Justice Houghton, speaking for the court, said:

Nor does the board of dental examiners have any power to revoke a license. On the contrary the statute gives it only power to report to the Board of Regents its conclusion with respect to the accused. The Board of Regents is not bound to follow such recommendation because the statute expressly says that upon receiving a report that the accused has been guilty of unprofessional or immoral conduct, or that he is grossly ignorant or inefficient in his profession, it "may suspend the person so charged from practice for a limited season or it may revoke his license." If the statute prescribed that the Board of Regents must follow the recommendation of the board of dental examiners and revoke the license if the examiners so recommended, it could very well be said that the duty of the Board of Regents was merely ministerial, and that the license was not entitled to notice, and that the accused was not deprived of any right in being refused permission to appear before it. But the statute is that the Board of Regents may wholly revoke or suspend the accused from practice for a limited time. Upon the question as to what the Board of Regents shall do on the coming in of the report, we think the accused licensee has the right to appear and be heard in person or by counsel. The legislature had the right to say that the complete trial, so far as the introduction of evidence and the submission of proofs was concerned, should be held before the board of dental examiners, and, having done so, the accused would not be entitled to produce any further evidence before the Board of Regents; but, as to what judgment should be rendered upon the evidence as taken, it would seem clear that the licensee was entitled to be heard. This is true, also, with respect to physicians and all other licensees where the law prescribes that the trial shall be had before another body other than the Board of Regents which grants and revokes the license.

VII. RECOVERY OF COMPENSATION.

The case of *Miller vs. Longshore*, 131 N. Y. Supp. 1041, illustrates a running, mutual current account consisting of reciprocal demands against which the statute of limitations does not run.

In this case the physician had been attending the family of Miller for more than ten years, and for about the same time that Miller had been furnishing feed and other supplies to the physician. Each kept account of the charges against the other only, so that neither account showed credits for services or goods rendered or furnished by the other. Miller and the doctor died about the same time and the accounts of each was presented to the executrix of the other; each account was rejected and litigation ensued. In considering whether these accounts were barred by the statute of limitations Mr. Justice Spring said:

I think these two accounts consisted of reciprocal demands, constituting a mutual, current account within section 386 of the Code of Civil Procedure. . . . In order to make the accounts mutual, it is not essential that they be kept only by one of the parties, or by debit and credit in form. . . . They need not be entered in a book, or even written at all. The parties must expect that the two accounts are to be adjusted together, the balance making the indebtedness. The accounts must be unadjusted, existing demands, the one against the other; and, if they meet these requirements, they are within the definition of mutual accounts. It is quite common where two men have opened accounts against each other that each keeps a record of his own charges. He does not know the items against him. They are mutual accounts, and any other rule would operate unjustly and in contravention of the intent of the parties. The testators of the parties to this action allowed their accounts to run along for years without adjustment. It is a reasonable inference that each relied upon the validity of his own account to offset the charges against him. They perhaps assumed there was no substantial difference between the sum total of each

account, or their conduct may be ascribed to carelessness. No matter, as long as each was cognizant in a general way of both accounts, believing the balance unpaid was the actual indebtedness.

News Items.

Changes of Address.—Dr. A. A. Brill, to 55 Central Park West, New York.

Dr. William H. Hennings, to 167 West Seventy-first Street, New York.

Cholera in Japan.—Cholera is spreading in southern Japan. On September 20th the total number of cases reported for all Japan was 231, and on September 23d, 330 cases were reported in Fukuoka-Ken.

Smallpox in the United States.—Reports received by the United States Public Health Service during the week ending October 18th show that during the month of September only 30 cases of smallpox were reported, with no death.

New York Medicosurgical Society.—At a meeting of this society, held at the Manhattan Hotel, Saturday evening, October 19, 1912, the following officers were elected for 1913: President, Dr. Walter Brooks Brouner; vice-president, Dr. William E. Ramsay; treasurer, Dr. J. Arthur Booth; secretary, Dr. Samuel McCullagh.

Poliomyelitis in Western New York.—During the week ending October 12th 10 cases of poliomyelitis were reported in Buffalo, making the total number of cases reported during the present outbreak 326. Of this number, however, only 288 have been satisfactorily verified as being genuine. Thirty-five deaths have been reported, making a case fatality rate of 12 in a hundred. Outside of Buffalo 104 cases have been reported, with 16 deaths.

Sanitation of Trains and Vessels.—With the approval of the secretary of the treasury, the surgeon general of the United States Public Health Service has issued instructions to commissioned medical officers to make note when traveling of the sanitary conditions of trains, vessels, stations, and wharves and to report the results of their observations. The purpose of this action is to enable the surgeon general to ascertain existing sanitary conditions of common carriers engaged in interstate traffic.

Cornell University Medical College opened Wednesday, October 2, 1912, with an enrollment as follows: For the degree of M.D.: first year, 39; second year, 24; third year, 20; fourth year, 19. Special students (work not leading to the degree of M.D.), 5; doctors of medicine engaged in research, 7; for the degree of Ph.D., 2; making a total of 116 students. There is an increase over last year of 15 students in the enrollment for the course leading to the degree of M.D. All students now registered, with the exception of those who are pursuing the combined seven year courses leading to the degrees of A.B. and M.D., are graduates in arts or science, or doctors of medicine doing advanced work.

Medical Club of Philadelphia.—Mayor Blankenburg was the guest of honor at a meeting of the Medical Club of Philadelphia, held on the evening of October 18th at the Bellevue-Stratford Hotel. More than a thousand members of the club were present. The following officers were nominated, the election to take place at the January meeting: President, Dr. James C. Wilson; first vice-president, Dr. Wilmer Krusen; second vice-presidents, Dr. McCluney Radcliff and Dr. William C. Holloper; secretary, Dr. William S. Wray; treasurer, Dr. Lewis H. Adler, Jr.; directors, Dr. Clarence W. Franklin, Dr. S. Lewis Ziegler, Dr. G. M. Illman, Dr. John W. West, Dr. E. R. Kirby, Dr. William D. Robinson, and Dr. A. Charles O'Reilly.

Northern Medical Society.—This society will meet at the residence of Dr. William J. Robinson, 12 Mount Morris Park West, on Wednesday, October 30th, at 8:45 p. m. Beside the exhibition of patients and new instruments, the programme will include the following papers: *New Light on Some Old Problems in Rhinology*, by Dr. Wolf Freudenthal; *Explanation of the Technique of Psychoanalysis*, with Some Remarks on the Freudian Theories, by Dr. E. W. Scripture. All members of the medical profession who are interested are invited to attend and participate in the discussions. Doctor Robinson is president of the society and Dr. De Witt Stetten is secretary.

Brooklyn Physicians Criticise the Board of Health.

Four physicians, three of them officers of the medical board of the Kings County Hospital, called upon Borough President Steers on October 10th and appealed to him to oppose the demands of the Department of Health for an appropriation to establish a hospital for the treatment of venereal diseases. In their appeal these physicians state that there are adequate hospital accommodations for the care of all such cases, and they object to the board of health interfering with the treatment of disease. It is their belief that it is the duty of the board of health to prevent disease, not to treat it, and in asking for an appropriation for the establishment of a hospital they are encroaching on the rights of the Department of Charities. The appeal also contains a criticism of the way in which the medical inspection of public schools is conducted. The physicians who presented the appeal were: Dr. Calvin F. Barber, president of the medical board of the Kings County Hospital; Dr. Sylvester J. McNamara, chairman of the executive committee, Dr. H. Arrowsmith, secretary of that committee, and Dr. H. H. Morton, one of the attending surgeons of Long Island College Hospital.

Collective Investigation of Ulcer of the Stomach.

At the invitation of the German committee organized for the purpose of a collective investigation of ulcer of the stomach, a similar committee has been formed in this country, consisting of Dr. George E. Brewer, Dr. Warren Coleman, Dr. Max Einhorn, Dr. James Ewing, Dr. J. M. T. Finney, Dr. Arpad G. Gerster, Dr. John C. Hemmeter, Dr. Frederic Kammerer, Dr. J. Kaufman, Dr. William J. Mayo, Dr. Willy Meyer, Dr. William Gerry Morgan, Dr. John B. Murphy, Dr. Franz Pfaff, Dr. William L. Rodman, Dr. Charles G. Stockton, and Dr. John S. Thacher. It is at the central bureau of the American Committee of the Pathological Department of Cornell University Medical College, that Professor Ewing will make the pathological and bacteriological examinations of the anatomical material, the results of which will be published by him. The committee seeks the cooperation of all physicians, surgeons, and pathologists who may be willing to assist in the investigation. Due credit will be given in the published analysis of the cases to all who send histories and anatomical specimens. Directions for preserving and forwarding anatomical specimens are given on the history and autopsy blanks, which will be furnished upon application. The autopsy reports should be sent with the specimens to Professor Ewing. The clinical histories may be forwarded with the specimens or may be sent direct to the secretary, Dr. Warren Coleman, 58 West Fifty-fifth Street, New York.

Personal.—Dr. Ira S. Wile has been appointed a member of the New York Board of Education, to succeed Jeremiah T. Mahoney, who resigned recently. Doctor Wile will conduct a systematic examination into the health of the public school children, special attention being given to the eyes, ears, and teeth.

A portrait of Dr. James H. Jarrett, of Towson, Md., was unveiled on October 16th at the October meeting of the Baltimore County Medical Association. The presentation was made by Dr. William J. Todd, who read a sketch of Doctor Jarrett's life. The portrait will be hung in the Maryland Medical and Chirurgical Faculty hall in Baltimore.

Dr. John Matthew Connolly, formerly of Harvard Medical School, has begun work as professor of physiological chemistry in the State University of Oregon Medical College, Portland. Dr. John D. MacLaren is director of the laboratories.

Dr. Ernest B. Hoag has been engaged by the State of Minnesota to travel about the State to demonstrate that the conservation of the mental and physical health of school children is possible and practicable with the means at hand. To furnish the necessary technical knowledge, the State Board of Health will maintain at the capital a bureau of information concerning child hygiene, medical supervision, school hygiene, etc.

Cosmo Hamilton, the English editor and playwright, was one of the speakers at a meeting of the New York Association of Biology Teachers at the Academy of Medicine, Thursday, October 24th. Mr. Hamilton is the author of a play, *The Blindness of Virtue*, which deals with eugenics and the error of false prudery.

Alumni Association of Jefferson Medical College.

Permanent organization of the Central Pennsylvania Branch of the Jefferson Alumni Association was effected on October 15th, at a meeting held in Altoona, and officers to serve for the ensuing year were elected as follows: Dr. J. E. Smith, of Altoona, president; Dr. Henry J. Somer, Jr., of Hollidaysburg, first vice-president; Dr. Henry F. Tomb, of Johnstown, second vice-president; Dr. George W. Simpson, of Milk Creek, third vice-president; Dr. C. B. Kirk, of Everett, fourth vice-president; Dr. Charles F. McBurney, of Altoona, secretary, and Dr. J. P. Getter, of Belleville, treasurer. Dr. John Lowman, of Johnstown, was elected chairman of the executive committee, which consists of seven members. At the close of the business meeting a banquet was held, Dr. Samuel C. Smith, of Hollidaysburg, acting as toastmaster.

Registration of Twenty-two Medical Colleges Rescinded by the New York Board of Regents.

—The New York State Board of Regents has barred the graduates of twenty-two medical colleges of the United States and Canada from practising in this State, unless they shall comply with the State board's requirements. The institutions are as follows: Oakland College of Medicine and Surgery, Oakland, Cal.; Medical Department, Howard University, Washington, D. C.; Chicago College of Medicine and Surgery, Chicago, Ill.; Valparaiso University Medical Department, Valparaiso, Ind.; Hahemann Medical College of Chicago; College of Physicians and Surgeons, Chicago; College of Homeopathic Medicine, State University of Iowa; College of Medicine, State University of Iowa; Kansas Medical College, Department of Washburn College, Topeka, Kan.; College of Physicians and Surgeons, Baltimore; School of Medicine, Boston University; Medical Department, Creighton University, Omaha; Dartmouth Medical School, Hanover, N. H.; Cleveland-Pulte Medical College, Cleveland, Ohio; College of Medicine, University of Tennessee, Memphis, Tenn.; Medical Department, Vanderbilt University, Nashville, Tenn.; Milwaukee Medical College, Department of Marquette University, Milwaukee, Wis.; Wisconsin College of Physicians and Surgeons, Carroll College, Milwaukee, Wis.; Manitoba Medical College, Winnipeg; Faculty of Medicine, Dalhousie University, Halifax, N. S.; Faculty of Medicine, University of Toronto, Canada; Faculty of Medicine, McGill University, Montreal, Quebec.

Congress of Surgeons in New York.—The third annual session of the Clinical Congress of Surgeons of North America will be held in New York during the week beginning November 11th, and every indication points to a large and enthusiastic meeting. A complete programme for the week has been issued, which is comprehensive in its scope, the most attractive feature to surgeons naturally being the clinical schedule. In the list of clinicians will be found the names of the leading surgeons of New York and Brooklyn, and the institutions in which the clinics and demonstrations will be held are the leading hospitals and medical schools of the two cities. Every branch of surgery is covered in these clinics, which are held every morning and afternoon during the week. In addition to the operative clinics, an excellent programme of demonstrations in radiology, surgical pathology, experimental surgery, and kindred subjects has been prepared. For the evenings there will be six literary sessions at which papers on subjects of surgical interest will be read by American and European surgeons, and discussed by New York surgeons. The headquarters of the congress will be at the Waldorf-Astoria. During the day the ballroom will be used for displaying the bulletins of clinics and demonstrations, and in the evening for the scientific meetings. Printed programmes will also be issued daily. Any physician or surgeon in North America in good standing may become a member of the congress by registering at any annual meeting and paying the registration fee of \$5.00, and formal invitations will be sent upon application to the secretary. Dr. Albert J. Ochsner, of Chicago, is president of the congress. Dr. Edward Martin, of Philadelphia, president-elect; Dr. John G. Clark, of Philadelphia, is vice-president. Dr. George E. Brewer, of New York, vice-president elect; Dr. Franklin H. Martin, 31 North State Street, Chicago, general secretary; Dr. Allen B. Kanavel, of Chicago, general treasurer, and Mr. A. D. Ballou general manager. Dr. George E. Brewer, of New York, is chairman of the local committee on arrangements.

Pith of Progressive Literature.

JAHRBUCH FÜR KINDERHEILKUNDE.

August, 1912.

1. B. SALGE: Nutritional Disturbances in Infants Due to Flour.
2. JOSEPH LANGER: Poliomyelitis.
3. R. SCHIMMEL: Meningocele spuria traumatica Combined with Pachymeningitis haemorrhagica interna.
4. GEORG WOLF: Calcium and Phosphate Metabolism in Infants Fed with Cows' Milk.
5. ERICH GOETZ: Eruption and Incubation of Measles.

1. **Infants and Flour.**—Salge again calls attention to the fact that a diet rich in flour or carbohydrates and poor in proteids and fats can cause severe nutritional disturbances in infants. These children look very fat, but they have a pasty complexion and their resistance to infections of various kinds is very low.

2. **Poliomyelitis.**—Langer says that poliomyelitis is a contagious disease and should be isolated just as are other contagious diseases. Prophylaxis should play an important rôle in the consideration of this disease.

5. **Measles.**—Goetze has been able to cause measles in a pig by inoculating it with some blood taken from a man during the eruptive period of measles. Nine days after injection, the pig showed a rise in temperature, pulse, and respiration and on the next day the characteristic eruption of measles appeared.

MONATSSCHRIFT FÜR KINDERHEILKUNDE.

September, 1912.

1. PIELSTICKER and VOGT: Artificial Pneumothorax in Children.
2. STOLTE: Treatment of Loss of Weight in Infants.
3. SCHOPF: Buttermilk in Infants.

1. **Pneumothorax in Children.**—Pielsticker and Vogt report on ten cases of artificial pneumothorax in children. The youngest child was fifteen months of age and the oldest fifteen years. The cases to a great extent have been followed for nine months after operation. The authors came to the conclusion that just as in adults so in children, pneumothorax artificially performed does much good in arresting, and in some cases, curing tuberculosis of the lungs. The operation of pneumothorax was also performed in a few cases of bronchiolectasis, without very good results, however. The most favorable cases of tuberculosis are those in which only one lung is affected or the other lung only slightly involved. Very extensive and interesting histories are included of all the cases treated.

2. **Infantile Loss of Weight.**—Stolte calls attention to the fact that it is well known that infants which have lost over two thirds of their body weight due to some intestinal disturbance rarely, if ever, recover. At times it is very difficult to keep alive infants which have lost even less weight than this. Often breast milk will not save these patients. Stolte advises a combination of breast milk and carbohydrate poor buttermilk in this class of cases. Numerous charts are shown illustrating the good effect of this method of treatment.

ZEITSCHRIFT FÜR AUGENHEILKUNDE.

August-September, 1912.

1. AUGUST FRIEDRICH VOIROT: Refraction, Vision, Color Sense, and Muscular Balance in 939 School Children.
2. KRAUSS: Ganglioglioma; Tumor Not Hitherto Observed in Eyelid.
3. F. STIMMEL and F. ROTTER: Pathology and Therapy of Congenital Hydrophthalmos.
4. A. DETROIT: Internal Treatment of Glaucoma with Iodine.
5. HUGO WOLF: Correction of Anisometropia in Aphakia by Means of Zeiss's Double Glass.
6. J. HINIS: Eye Complications following Use of Arsenobenzol and Their Importance.

ZENTRALBLATT FÜR CHIRURGIE.

September 28, 1912.

1. C. ARND: Professor Sultan's Diagonal Suture.
2. R. BARTZ: Covered Perforation of Stomach.

ZENTRALBLATT FÜR INNERE MEDIZIN.

September 14, 1912.

1. GERHARD FOSCH: Primary Melanosarcoma of Central Nervous System in Multiple Sclerosis.

September 27, 1912.

2. HEINRICH RÖDER: Nature and Treatment of Rheumatic Affections. Disordered Lymph Circulation.

2. **Nature and Treatment of Rheumatic Affections.**—Röder looks upon rheumatism in its various manifestations as being due to retention of toxins in the system owing to occlusion of the tonsillar crypts, with consequent failure of circulation in the lymphatic channels and defective elimination in the tonsillar region. By pressing against the tonsils the extremity of Prym's tubular device, partly filled with hydrogen peroxide or iodized glycerin on absorbent cotton, and making suction in the tube, he finds it possible to procure immediate partial or complete relief from pain, whether articular, neuralgic, or muscular. This relief may be permanent, or the pain may return in a few hours or days, generally with less intensity. Where the pain is not wholly relieved, Röder in addition rubs hydrogen peroxide thoroughly over the tonsil by means of cotton on a bent wire applicator; the pain then usually disappears, and any joint swelling present likewise. Röder also obtained relief from pain in circulatory, digestive, and urinary disturbances. Asthmatic paroxysms were often quickly checked by his procedure, and catarrhal pulmonary states were also very favorably influenced.

LYON MÉDICAL.

August 25, 1912.

1. L. BÉRIEL: Pathology of Certain Grave Nervous Affections without Apparent Lesions. (Continued).

September 1, 1912.

2. L. BÉRIEL: Pathology of Certain Grave Nervous Affections without Apparent Lesions. (Concluded).

September 8, 1912.

3. J. ESCALLON: Elimination of Salvarsan in Urine.

September 15, 1912.

4. L. BOUCHUT and DUJOL: Scleroderma with Atrophy of Thyroid.

September 22, 1912.

5. R. ALEXANDRE: Painful Dysphagia and Anesthesia of Superior Laryngeal Nerve.

September 29, 1912.

6. R. BOULUD: Azoturic Coefficient in Renal Affections.

3. **Elimination of Salvarsan in Urine.**—Escallon studied the urinary elimination of salvarsan after intravenous injection of 0.6 grammes doses by means of Abelin's color reaction, and found that each curve of elimination showed two maximal points, the first in the four or five hours immediately succeeding the injection, and the second twenty to twenty-eight hours and sometimes forty-eight hours after. Between these maxima, which appeared quite constantly, the elimination was greatly diminished and sometimes even totally arrested. In one patient with albuminuria, elimination began only twenty-nine hours after injection and continued sixty-nine hours; in this patient a roseola developed a few hours after the injection, followed by diarrhea vomiting, and headache. The duration of salvarsan elimination was found to increase with the number of injections; thus at the first injection it averaged forty hours, at the second fifty-three, and at the third fifty-nine. The total amount excreted also increased with the number of injections.

Escallon believes this reaction valuable to ascertain before repeating salvarsan that the preceding dose has been completely eliminated. It is performed by adding to seven or eight c. c. of urine, acidulated with a few drops of decinormal hydrochloric acid, three or four drops of ten per cent. sodium nitrite solution, followed by a few drops of a ten per cent. alkaline solution of resorcinol and a drop or two of sodium hydrate solution. If the urine contains salvarsan in notable amount, a red color develops; if only in traces, a pink color. The reagents used should previously have been cooled in ice water. The test lends itself readily to colorimetric determinations, which are sufficiently accurate for clinical purposes.

4. Scleroderma with Thyroid Atrophy.—Bouchut and Dujol report an unusual case in which symptoms of Raynaud's disease were followed by fibrosis and contracture of the fingers, and later by cervical scleroderma. In the two months preceding the patient's death the temperature was between 38° and 39° C., and there were present tachycardia (120 a minute), dyspnea, aphonia, and persistent coryza. At autopsy the thyroid was found markedly sclerosed and atrophic. No other noteworthy lesions were present, except those characteristic of scleroderma. The authors are unable to account for the tachycardia, fever, and dyspnea occurring before death. The administration of a thyroid preparation at the patient's entrance to the hospital two months before death caused such an increase in the tachycardia as to necessitate its discontinuance.

5. Anesthesia of Superior Laryngeal Nerve in Laryngeal Tuberculosis.—Alexandre praises this measure for the relief of pain, especially in swallowing. In the first two cases in which he used it complete relief of pain was obtained until death, i. e., for over two months and for eleven days, respectively; three injections were given in the first case. In a third patient, still living, no pain has been present for five weeks. Alexandre injects 0.5 c. c. of one per cent. stovaine on each side, following Frey's technique and taking care to push the needle a little deeper before injecting the last drop or two of solution.

6. Azoturic Coefficient in Renal Affections.—Boulud designates by this term the ratio of the urea nitrogen in urine to the total nitrogen. In the normal human being or dog it amounts to 0.80 to 0.82. Boulud found it reduced to 0.70 or even 0.60 in cases of albuminuria, depending on renal disease and sometimes increased in albuminuria due to other causes. Experimental administration of mercury bichloride, quinine, and chloroform to dogs likewise lowered the coefficient. The author believes this estimation to be of diagnostic and prognostic value. He obtains the total nitrogen by the formaldehyde method and the urea nitrogen by the hypobromite method after treatment of the urine with phosphotungstic acid.

PARIS MÉDICAL.

September 27, 1912.

1. BRANCA: Human Umbilical Vesicle.
2. JEAN MONOD: Prothesis of Face.

2. Prothesis of Face.—Monod presents an interesting case of a man whose face was practically blown away by a shell at the battle of Bapaume, and who wore for twenty years a most unesthetic

silver mask; there was nothing of the face between the supraorbital arches and the bottom of the nose. Monod, with the assistance of Vallette, the sculptor, constructed on a sort of cage of gold, an aluminium face, with silver wings to be attached to the malar bones. Glass eyes were inserted, and, for artistic verisimilitude, eyebrows of hair and grooves to represent wrinkles. The apparatus was colored in oil, then rubbed with pumice stone to get the peculiar effect of the human complexion, followed by stippling with chloroform; this treatment needs to be repeated only every five years. The effect, as shown by a photograph, is really astonishing.

PRESSE MÉDICALE.

September 18, 1912.

1. GUSTAVE ROUSSY: What Position Do Glands Occupy in Thyroid Pathology?
 2. GUISEZ and G. STODEL: Endobronchial and Intrapulmonary Injections.
- September 27, 1912.
3. FÉLIX BAUDOUIN and J. TIXIER: Research on Capillary Network of Central Pia Mater.
 4. W. DUBREUILLE: Electrolytic Epilation.
 5. MAURICE LITVILLE and ANDRÉ BERGERON: Reaction of Wassermann and Latent Syphilis in Cirrhosis and Chronic Nephritis.
 6. GEORGES SCHREIBER: Dry or Powdered Milk.

2. Endobronchial and Intrapulmonary Injections.—Guisez and Stodel proved experimentally the possibility of reaching the entire respiratory tract, including the lung parenchyma, by the injection of medicated oils in relatively large amount into the trachea. In treating the human subject they first anesthetize the root of the tongue and larynx with cocaine solution, and then inject one or two c. c. of a one to forty novocaine solution with a few drops of one to 1,000 adrenalin into the trachea with the aid of a long cannula. Three or four minutes later, fifteen to twenty c. c. of medicated oil (e. g., one to twenty guaiacol) is injected into the trachea. The laryngeal mirror is used to control the procedure. Most patients are but little or not at all inconvenienced, and even when coughing occurs only three or four c. c. of the oil is lost in the sputum. Particularly excellent results were obtained in pulmonary gangrene, the fetid odor being overcome, the temperature dropping, and the general condition rapidly improving, in the course of a series of injections, given daily or on alternate days. Much benefit was also noted in subacute or chronic tracheitis, tracheal ozena, bronchopulmonary infection due to the presence of foreign bodies, and bronchial dilatations. In a case of bronchopneumonia in an old man, with abundant, fetid expectoration, a course of six injections was followed by recovery.

4. Electrolytic Epilation.—Dubreuille considers epilation by the x rays too dangerous as yet to be recommended, and advises electrolysis. If the latter is properly carried out no trace of scar formation or of skin atrophy will remain. In twenty years' experience the author has found the chief source of poor results to be the use of an unnecessarily strong current. He never exceeds 1.5 milliampère and generally uses only one milliampère for fifteen or twenty seconds even where coarse hair is being treated. If the needle is placed in precisely the right spot, but little current is required to destroy the hair papilla. A frequent source of discouragement to both patient and inexperienced operator is the apparent return of hair in areas al-

ready epilated; this represents merely growth from follicles previously temporarily latent, a condition which is of general occurrence after certain of the hairs have spontaneously fallen out. The needles used should be extremely fine and rounded at the end; they need not be of platinum, since they constitute only the negative pole. The circuit should be open when the needle is introduced. There is no certain sign of complete destruction of a papilla at the time of operation; the best guide is loss of adhesion of the hair, which should be readily pulled out at once or soon after the passage of the current.

5. Latent Syphilis in Cirrhosis and Chronic Nephritis.—Letulle and Bergeron observed a positive Wassermann seven times in eighteen cases of hepatic cirrhosis and twelve times in forty-six cases of chronic nephritis. If these results are added to those obtained in cases of aneurysm, aortic disease, and hemiplegia, it seems evident that syphilis is responsible directly or indirectly for many chronic and more or less incurable affections.

SEMAINE MÉDICALE.

September 25, 1912.

HENRI ISCOVESCO: Physiology of Erythrocytes; Autoregulator Mechanism of Hematopoiesis.

Physiology of Erythrocytes.—Iscovesco showed experimentally that the red corpuscles have the power to absorb free hemoglobin from the blood. This process appears to take place not only through the physical agency absorption, but also through a specific activity of the cell. Lipoids are likewise absorbed by the erythrocytes. These facts are illustrated in hemolytic anemias, in which the remaining red cells may be much richer in hemoglobin and lipoids than normally. In anemias, as result of hemorrhage, on the other hand, the hemoglobin and lipoids are not increased. Iscovesco looks upon the erythrocytes as monocellular internally secreting glands, which, from substances circulating in the blood, build up their own hemoglobin. In support of this he argues that hemoglobin formation does not necessarily correspond with red cell production in the bone marrow, the hemoglobin content of the cells increasing less rapidly in hemorrhagic anemia than their number, no matter how great the amount of iron present in the liver and spleen at the time. Iscovesco found that one of the lipoids in the red cells had the power, when injected into bled animals, of markedly stimulating the red cell forming organs (liver, spleen, bone marrow) and the formation of hemoglobin in the erythrocytes themselves. This affords an explanation of the facts that in hemolytic anemias repair is much more prompt than in hemorrhagic anemias, and that in some anemic patients, injection of whole blood or of hemolyzed blood has given excellent results, while injection of blood serum alone—in the same cases—has proved valueless.

ROUSSKY VRATCH.

July 14, 1912.

1. PH. G. JANSKY: Percussion of Apices.
2. G. A. LUDENITZKY: Effect of Various Substances on Contractility of Heart.
3. N. A. GELMANOFF: Treatment of Tetanus; Superiority of Bacelli Method.
4. U. M. KERNER: Preservation of Diagnostic Serums in Glycerin.
5. W. A. MISHIN: Cancer of Uterine Cavity; Diagnosis.
6. O. POLOTENKOVA: Epidemic of Scarlet Fever in 1911 and 1912; Prophylactic Vaccine According to Gabrichevsky. Repeated Vaccination after One or More Years.

7. U. E. GIFFELSON: Schanta-Wertheim's Operation in Prolopus uteri.

July 21, 1912.

8. V. S. DZERZHGOVSKY and S. K. DZERZHGOVSKY: Determination of the Potency of Antidiphtheritic Serum.
9. V. G. KORENTEVSKY and E. A. KARTASHEVSKY: Metabolism Following Removal of Thyroid.
10. P. A. KUTCHERENKO: Trachoma Bodies of Prowazek and Halberstaedter; Diagnostic Significance.
11. I. V. STAVSKY: Changes in Viscosity of Blood in Tuberculosis.
12. V. N. KLIMENKO: Atypical Case of Epidemic Cerebrospinal Meningitis.
13. L. G. BUTCHINSKAYA-URSHEVSKAYA: Local Application of Salicylic Acid in Inflammation of Lungs and Other Conditions.

3. The Treatment of Tetanus.—Guljaeff reviews the literature and reports two cases of severe tetanus infection successfully treated with a three per cent. solution of phenol administered hypodermically, as suggested by Bacelli. The daily dose was from 0.3 to 0.5 gramme of phenol, and the total amount was 14.5 grammes in one and 5.4 grammes in the other. No untoward effects were observed.

4. Preservation of Immune Serums.—Kerner determined by a series of experiments that the addition of glycerin to immune serums in no way impairs their properties, and he suggests the use of glycerin (in equal proportions) as a preserving medium.

6. Vaccination against Scarlet Fever.—Poloténova employed during a severe epidemic of scarlet fever in a number of villages Gabrichevsky's bacterins, making about 3,000 inoculations. The results were very satisfactory. It was found that a single inoculation does not confer immunity, nor does immunity last over six months.

9. Metabolism Following Thyroidectomy.—Korentchevsky and Kartashevsky conclude from their experiments on a dog and a rabbit that the removal of the thyroid does not have any marked influence on metabolism, at least for the first week.

13. Local Application of Salicylic Acid.—Butchinskaja-Urshesvskaja employed successfully local application by means of wet compresses of a ten per cent. solution of salicylic acid in alcohol with the addition of ten per cent. castor oil, in cases of pneumonia following influenza.

BRITISH MEDICAL JOURNAL.

October 5, 1912.

1. A. J. WALTON: Differential Diagnosis of Surgical Dyspepsias.
2. H. G. W. DAWSON: Congenital Deformity of Forearm; Operative Treatment.
3. A. KINGLION and W. YORKE: Influence of Meteorological Conditions on Development of *Trypanosoma rhodensis* in *Glossina morsitans*.
4. F. J. BROWNE and J. R. MACKENZIE: Etiology and Treatment of Miner's Nystagmus.
5. W. CALDWELL: Aneurysm of Mitral Valve Cusp in Staphylococcal Endocarditis.
6. H. HOULGRAVE: Ulcerative Endocarditis.
7. W. JOHNSTONE: Abnormal Pulse Rhythm.

2. Congenital Deformity of Forearm.—Dawson's patient was an adult female who had a congenital complete fixation of both forearms in full pronation. Her younger brother and her maternal grandmother were similarly affected, showing a strong hereditary tendency of the phenomenon. In addition to the fixation there was considerable bowing of the radius backward and outward. A series of five operations were done upon one arm with excellent results. The forearm can now be supinated voluntarily and the acquisition of strength is only a matter of time. The unsightly deformity is com-

pletely removed. Before the treatment was successful it had become necessary to remove a bridge of bone from the upper portion of the forearm, lying between the radius and ulna, and immovably unite them; to resect the head of the radius; to cut the inferior radioulnar ligaments, and to perform an osteotomy on the radius, uniting the fragments with the lower rotated through about 40°. Dawson will try the same treatment on the other extremity, but will complete the work in three steps instead of five.

3. *Trypanosoma rhodesiense*.—Kinghorn and Yorke find that the developmental cycle of this parasite in the fly, *Glossina morsitans*, is markedly influenced by the temperature to which the flies are subjected. High temperatures (75° to 85° F.) are favorable to the development of the parasite, while lower temperatures (60° to 70° F.) are unfavorable. In addition it would seem that an extremely low relative humidity of the atmosphere also was favorable to the parasite's development in the fly.

4. *Miner's Nystagmus*.—Browne and MacKenzie analyze 100 cases of this affection and find that there are four important contributing factors in its etiology. In order of frequency and importance they are: 1. Insufficient light; 2, errors of refraction; 3, the straining of the ocular muscles; and, 4, the neurotic temperament. They found that of their cases ninety-nine per cent. had been using an inadequate form of light, and only one man who had employed efficient light was affected with the disease. So large a proportion of their cases as ninety per cent. had errors of refraction. A similar percentage of the cases were in men who worked in positions necessitating severe straining of the ocular muscles.

LANCET.

October 5, 1912.

1. H. D. ROLLESTON: Address on Universities and Medical Education.
2. W. H. BATTLE: Ventral Hernia, Traumatic or Incisional.
3. W. H. TRETHOWAN: Acute Anterior Poliomyelitis.
4. A. S. WOODWARK and R. L. M. WALLIS: Relation of Gastric Secretion to Rheumatoid Arthritis.
5. E. W. H. GROVES: Material and Technique of Wire Suture of Bone.
6. H. SMITH: Endocranial Tumor.
7. J. FAIRLEY: Tuberculin Dispensaries and Diagnosis.

3. *Anterior Poliomyelitis*.—Trethowan analyses the facts learned in the recent great epidemics which have raged in Sweden. As showing the incidence in a single family, he records that there were 456 families, in each of which there was only one case, ninety-three had two cases each, forty-six three cases, twenty-one four cases, eight five cases, two six cases, one seven cases, and two eight cases each. In thirty-one families from two to four cases occurred on the same day. The disease was almost always rather closely limited to individual small foci of population. The disease was found under good hygienic conditions about as frequently as under poor. Contact infection served to explain house, and even focal cases, but it failed utterly to explain the spread of the disease from one focus to another. It is concluded that direct transmission occurs from person to person whether infected or not, but only exceptionally is a susceptible individual found. This postulates the occurrence of

carriers whose existence has been conclusively proved. The carriers may not have been attacked by the disease, or they may be the victims of the abortive forms. In the secretions of the carriers' nasopharynx or in their intestinal contents, the infection was found to remain active for many months, in one case up to seven. Flies and fleas have not been found to carry the disease. Inanimate objects, such as handkerchiefs which have been in intimate contact with the patient and have become contaminated with his secretions, have been found infective even after considerable drying. The disease is apparently most infectious in the incubation period, hence measures of isolation are often adopted too late; in addition, if the entire family of the affected individual is not isolated the possibility of the disease being spread by a healthy person remains. The disease apparently confers an immunity, for the centres of one epidemic are almost always spared by a second outbreak.

4. *Gastric Secretion in Rheumatoid Arthritis*.—Woodwark and Wallis conducted careful chemical analyses of the gastric juices in ten typical cases of rheumatoid arthritis. The results in all were uniform in character though not quantitatively. They found a reduction in hydrochloric acid in every case, in some amounting to a total absence. In many there was also a great reduction in the ferment activity of the secretion. In none was there any demonstrable lesion of the stomach, and in most there had been no symptoms from the stomach save the usual accompaniment of mild dyspepsia. It is the absence of the hydrochloric acid upon which the authors lay the most stress, believing that its absence or great reduction diminishes the antiseptic powers of the gastric juice, and so permits the microorganisms from the buccal cavity to pass into circulation. In substantiation of this view the authors have tried the effect of administering hydrochloric acid and have been favored with quite gratifying results. Of course the existing joint involvement is in no way influenced, but there is a cessation of the progress of the condition and the pains soon disappear.

5. *Wire Suture*.—Groves calls attention to the observations of others to the effect that silver wire undergoes chemical changes in the tissues which cause it to break, or even to disappear. He shows that silver wire is not very strong and that it is prone to be easily broken by moderate tension at an angle. Aluminium bronze wire is stronger, but it contains copper and also undergoes chemical changes in the tissues. Iron wire, on the other hand, is very strong, and its decomposition causes no harmful results, even if it occurs. Such decomposition may be prevented by plating with nickel. In the suture of the patella, in which the use of wire is the most valuable means we have, Groves suggests that the wire be passed horizontally but superficially through the extreme upper and lower limits of the two fragments so that the whole of each fragment is included in the loop when the two are brought together. By this means the patient may be permitted to begin movements of his leg at the end of the second week after the injury. At the same time the sharp angulation of the wire is pre-

vented. The joint is not entered in the passage of the wire.

PROCEEDINGS OF THE ROYAL SOCIETY.

August 20, 1912.

1. W. M. THORNTON: Electrical Conductivity of Bacteria, and Rate of Sterilization of Bacteria by Electric Currents.
2. DAVID ELLIS: Investigation into Life History of *Cladothrix dichotoma*.
3. H. E. ARMSTRONG, E. F. ARMSTRONG, and E. HORTON: Studies of Enzyme Action. XVI. Enzymes of Emulsin. (I) Prunase Correlate of Prunasin.
4. H. E. ARMSTRONG, E. F. ARMSTRONG, and E. HORTON: Studies of Enzyme Action. XVII. Enzymes of Emulsin Type. (II) Distribution of Beta-Enzymes in Plants.
5. H. E. ARMSTRONG and J. VARGAS EYRE: Studies of Enzyme Action. XVIII. Enzymes of Emulsin Type. (III) Linase and Other Enzymes in Linum.
6. H. L. DUKE and MURIEL ROBERTSON: Observations on Fowls and Ducks in Uganda with Relation to *Trypanosoma gambiense* and *Trypanosoma gambiense*.
7. G. W. ELLIS and J. A. GARDNER: Origin and Destiny of Cholesterol in Animal Organism. Part IX. On Cholesterol Content of Tissues, Other than Liver, of Rabbits under Various Diets and during Inanition.
8. C. H. MARTIN: Note on Protozoa from Sick Soils, with Some Account of Life Cycle of Flagellate Monad.
9. E. W. AINLEY WALKER: Variability of Streptococci in Relation to Certain Fermentation Tests; Considerations Bearing on its Possible Meaning.
10. G. N. STEWART: Specific Conductivity of Solutions of Oxyhemoglobin.

August 21, 1912.

11. A. HARDEN and W. J. PENFOLD: Chemical Action on Glucose of Variety of *Bacillus coli communis*, Obtained by Cultivation in Presence of a Chloracetate. (Preliminary notice.)
12. VICTOR J. HARDING: Action of Enzymes on Hexosephosphate.
13. SIR DAVID BRUCE, DAVID HARVEY, A. E. HAMERTON, J. B. DAVEY, and LADY BRUCE: Morphology of *Trypanosoma* Causing Disease in Man in Nyassaland.
14. A. W. PORTER and F. W. ENDRIDGE-GREEN: Negative After Images and Successive Contrast with Pure Spectral Colors.
15. LEONARD HILL and MARTIN FLACK: Relation between Capillary Pressure and Secretion. II. Secretion of Aqueous and Intracellular Pressure.
16. FREDERICK KEEBLE and E. FRANKLAND ARMSTRONG: Oxydases of *Cytisus Adami*.
17. W. B. DOTTOMLEY: Some Conditions Influencing Nitrogen Fixation by Aerobic Organisms.
18. KARL PENACOS: Intensity of Natural Selection in Man.
19. SIR DAVID BRUCE, DAVID HARVEY, A. E. HAMERTON, J. B. DAVEY, and LADY BRUCE: Morphology of *Trypanosoma simiae*, sp. nov.
20. H. BAYON: Cultivation of *Trypanosoma rhodesiense*.
21. H. L. DUKE: Recovery of *Trypanosoma gambiense* from *Tricelaphus speketi* on Islands of Victoria Nyamira.

1. **Electrical Conductivity and Sterilization of Bacteria.**—Thornton found that the electrical conductivity of bacteria can be measured by observing their orientation when an electric current is passed through a liquid containing them. When subcultures of bacteria are made, the conductivity increases at each step, until a steady value is reached at about the fourth subculture on agar. Water containing *Bacillus coli communis* can be completely sterilized by direct currents in several hours at 0.3 ampere to the square cm., and nearly, if not quite as well by alternating currents. Milk can be sterilized with an alternating current; this is largely thermal. For rapid sterilization of liquids in bulk, an ozone spray is to be preferred to electrical action. When, however, it is required to control bacterial growth in liquids over long periods without change of temperature, it can be done by the passage of an alternating current, or of a direct current where electrolytic effects are not important.

15. **Secretion of Aqueous Humor and Intracocular Pressure.**—Hill and Flack believe that while, as shown in their experiments, the intracocular tension varies with the arterial pressure, it is primarily the result of the secretory action of the cells lining the ciliary processes. The secretory pressure regulates the capillary venous pressure in the eyeball; the pressure of the aqueous and the capillary venous pressure are always the same.

The circulatory conditions in the eye resemble those in the endocranial cavity, with the exception that the intraocular is much higher than the endocranial pressure, and therefore is not affected by changes in the general venous pressure. It is suggested that the increased tension in glaucoma is due to increased imbibition and secretion of fluid resulting from altered metabolism of the ocular tissues, leading to compression of the veins and a rise in the capillary venous pressure. The operative relief of glaucoma depends not on the reduction of tension *per se*, but on the increased transudation of tissue lymph with its immunizing properties. Another new view in support of which evidence is brought forward by Hill and Flack, is that the essential factor in the act of accommodation is the transference of the aqueous from the front of the lens to the circumlental region, which allows forward expansion of the fluid exterior part of the lens. The frequently invoked "elasticity of the lens" according to these authors does not exist.

JOURNAL OF LARYNGOLOGY, RHINOLOGY, AND OTOTOLOGY.

September, 1912.

1. J. N. ROY: Serous Meningitis. Choked Disc, and Multiple Polyneuritis of Certain Cranial Nerves in Young Alcoholic Smoker.
2. F. P. STURM: Mechanism of Paracusis (Willisii)

2. **Paracusis.**—Sturm believes that the ability to hear better in a noise is not in itself a pathological phenomenon, but merely a compensatory exaggeration of a normal physiological reflex which exists in every healthy human ear, but which under ordinary circumstances is not perceptible. This physiological paracusis is more intense in some than in others, but is present to some degree in all. It can be demonstrated by holding a watch at such distance from the meatus that it just becomes inaudible. When this point has been ascertained beyond doubt, a vibrating tuning fork of certain pitch, never lower than C-128, is placed on the vertex, and, as the vibrations diminish in intensity, the tick of the watch will become audible for a few seconds, only to disappear again as the vibrations of the fork die away. The author has so much confidence in the universality of paracusis that its absence in an apparently healthy individual leads him to suspect some slight temporary abnormality of the auditory apparatus, just as its presence in a patient complaining of deafness is invariably indicative of otosclerosis rather than of the existence of any less serious affection. The existence of paracusis, whether normal or pathological, can also be demonstrated for bone conduction. The author suggests that a watch be wrapped in a sufficient thickness of lint to render it inaudible when applied to the forehead. If a vibrating tuning fork of proper pitch and intensity is then applied to the vertex, the watch will be heard with equal intensity in either ear under normal circumstances, or, according to Weber's law, in such cases of deafness in which it is not heard at all. The author's conclusions seem to be based upon the assumption that the positive variation associated with certain auditory stimuli (the hum of the vibrating tuning fork or the roar of the train) induces a condition of such oversensitiveness in the nerve as to favor the transmission of feeble sounds which would not otherwise be able to produce an impression.

JOURNAL OF TROPICAL MEDICINE AND HYGIENE.

September 2, 1912.

1. SAMUEL T. DARLING: Examination of Stools for Cysts of *Entamoeba tetragena*.
2. K. S. WISE and E. P. MINETT: Treatment of Leprosy by Nastin.

September 16, 1912.

3. F. WYVILLE THOMSON: House Fly as Carrier of Typhoid Infection.
4. R. P. COCKIN: Treatment of Twenty-two Cases of Yaws by Salvarsan Injections at Yaws Hospital, St. George's, Grenada, W. I.
5. R. H. CASTOR: Inoculation, Vaccination, and Smallpox.

1. **Examination of Stools for Cysts of *Entamoeba tetragena*.**—Darling, after a careful study of entamebas obtained from cases and autopsy material in the Canal Zone, believes that the only pathogenic entameba of this region is *Entamoeba tetragena* and, in addition, agrees with Hartmann and Doflein that the organism usually described as *Entamoeba histolytica*, from cases of dysentery, is *Entamoeba tetragena*. He lays stress on the fact that most observers have been overlooking the small generation and the cysts of the tetragena organism. Whenever it is desired to determine the specific identity of the entamebas present in a given case, these cysts and small forms should be searched for in addition to the study of the trophozoite. The cysts are about fifteen microns in diameter; and may be distinguished from monad cysts in that the latter are smaller or larger and have a heaped up, crescentic border. Stools containing many cysts are infective, while stools containing only large trophozoites are most certainly not infective. The importance of detecting these cysts in convalescent and recovered cases of entamebic dysentery is therefore evident.

2. **Nastin Treatment of Leprosy.**—Wise and Minett, summarizing the results of four years' experience of nastin in 244 cases, state that there is a slight temporary check to the disease during the first six months of treatment. There appears to be general mental improvement, a humanizing influence on the facies, a softening of old lesions, increased suppleness of joints, a slight decrease in the size of the leprotic infiltrations, and an increase of tactile sensation. Later, however, the natural course of the disease continues unchanged.

3. **House Fly as Carrier of Typhoid Infection.**—Thomson found by experimentation that the ingestion of typhoid germs in large numbers has no bad effect on the health of flies. They can retain living typhoid bacilli in their bodies and transmit infection thereby for twenty-four hours after ingestion. They can carry the living germs on the exterior of their feet or bodies for six hours. As research tends to show that *Bacillus typhosus* possesses no great saprophytic activity, the presence of this germ in any substance or locality indicates its comparatively recent derivation from man, in whose excreta it emerges. It is quite possible that the fly is a very important factor in the transmission of the disease through the contamination of food. It is therefore advisable to prevent it from having good breeding places and to keep food supplies, especially milk, suitably protected.

4. **Salvarsan in Yaws.**—Cockin gave intramuscular injections of salvarsan in twenty-two cases of yaws, with excellent results. The duration of the patients' stay in the hospital averaged twenty-

five days, as against three months under other modes of treatment. But one case required a second injection. In three cases from which tissues were examined for spirochetes the latter were found to have disappeared within forty-eight hours after the injection.

5. **Inoculation, Vaccination, and Smallpox.**—Castor, in an examination of 1,028 Burmese, found that fifty per cent. had been inoculated, that eight per cent. had been vaccinated before fourteen years of age, and that sixteen per cent. had had smallpox. Among those inoculated the incidence of smallpox was 5.6 per cent., and among those vaccinated 2.3 per cent.

INDIAN MEDICAL GAZETTE.

September, 1912.

1. R. H. FIRTH: Inoculation and Prevalence of Enteric and Paratyphoid Fevers in European Armies.
2. HENRY SMITH: Details of Vision of 132 Cases of Intracapsular Extraction of Cataract.
3. T. H. BISHOP: Cholera Season.
4. JAMES DAVISON: Treatment of Uterine Prolapse.
5. A. G. NEWELL: Treatment of Smallpox by Tincture of Iodine.
6. H. STOTT: Outbreak of Urticaria epidemica.
7. M. H. THORNEY: Design for Outpatient Department of Small Indian Hospital.
8. W. C. BROOKES: Opium Cures.
9. C. MILNE: Some Interesting Cases.
10. O. A. B. BERKELEY: Case for Diagnosis.
11. C. H. BARBER: Vaccine Treatment of Pneumonia.
12. A. FENTON: Rupture of Spleen.

2. **Visual Results in Intracapsular Extraction of Cataract.**—Smith, in response to the criticism which has often been made that he has never published details concerning the results obtained in the many thousands of cases in which he has performed the operation he devised for the extraction of cataract, has finally tested the vision in 132 cases from ten to twenty-one days after operation. Two patients were so stupid that though they could see distant objects and their details, they could not understand what was wanted of them in the test. All but five of the remaining 130 had a vision of 6/6 or better. Ten were able to read very fine print, the others did not know how to read, but fourteen could thread a cambric needle very easily, eighty-one could thread it fairly well, and nine with difficulty. Most of the latter two classes were old people who were unaccustomed to threading needles; the first was composed of intelligent women and tailors. The difficulties of testing these ignorant natives, to which Smith has often referred as insuperable in the scientific examination of such enormous numbers of patients as flock to him, may be appreciated from his statement that it took on an average twenty minutes to make them understand what he wanted them to do.

5. **Treatment of Smallpox with Tincture of Iodine.**—Newell paints the exposed skin of patients in the early stage of smallpox with tincture of iodine two or three times a day for a few days and then stops. He asserts that this not only lessens or prevents pitting, but that it modifies the course of the disease, lessens the pain and fever, disinfects the parts to which it is applied, and lessens both the spread of the disease and the mortality.

BOSTON MEDICAL AND SURGICAL JOURNAL

October 10, 1912.

1. J. M. T. FINNEY: Surgical Aspects of Fat.
2. CECIL KENT AUSTIN: Norway Revisited.
3. JOHN LOWETT MORSE: Effect of Pasteurization of Milk on Rabies.
4. H. P. GREELY: Hemiparesis Due to Vascular Disease.

3. Pasteurization of Milk.—Morse reviews the literature in regard to the effect of pasteurization of milk on its digestibility by infants and on their nutrition, but found the evidence so unsatisfactory that he addressed letters to the members of the American Pediatric Society, inquiring whether they found pasteurized milk more or less digestible than other milk, whether babies thrive as well on it, and whether its continuous use predisposes to scurvy, rickets, malnutrition, and anemia. Fifty replies were received, but they showed no unanimity of opinion, so that the only conclusions that could be drawn were: It is impossible to determine from the evidence at present available whether or not babies fed continuously on pasteurized milk thrive as well as those fed on raw milk, or whether or not the continuous use of pasteurized milk predisposes to the development of diseases of nutrition. There is sufficient evidence to show, however, that if the continuous use of pasteurized milk is injurious to babies, its possibilities for harm are much less than those of bacteria. All but the cleanest milk therefore should be pasteurized before it is given to infants. There is, on the other hand, sufficient doubt as to the innocuousness of pasteurized milk to justify its avoidance whenever the character of the milk warrants it.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

October 12, 1912.

1. HENRY P. WALCOTT: Public Health in America.
2. WALTER A. JAYNE: Medical Progress.
3. NORMAN M. HARRIS: Intestinal Antisepsis.
4. JOSEPH A. CAPPS: Effect of Iodides on Circulation and Blood-vessels in Arteriosclerosis.
5. CARY EGGLESTON: Duration of Digitalis Action.
6. LESLEY H. SPOONER: Antityphoid Inoculation in Training Schools for Nurses in Massachusetts.
7. F. F. RUSSELL: Some Results and Fields of Usefulness of Antityphoid Vaccination.
8. E. W. HACHTEL and H. W. STONER: Inoculation against Typhoid in Public Institutions and in Civil Communities.
9. H. R. M. LAMDIS: Ultimate Results in Dispensary Treatment of Tuberculosis.
10. SIMON FLEXNER: Mode of Infection in Epidemic Poliomyelitis.
11. J. O. HIRSCHFELDER: Production of Active and Passive Immunity to Pneumococcus with Soluble Vaccine.
12. CATHERINE MACPARLANE: Graphic Menstrual Chart.
13. C. EMERSON: Clinical Incubator at Small Cost.
14. B. M. LINNELL: Pocket Mercury Sphygmomanometer.
15. GASTON TORRANCE: Successful Transplantation of Ureter from Vagina to Fundus of Bladder Twenty Months after Wertheim Operation in Which Greater Part of Trigonum Was Resected.
16. C. COULTER CHARLTON: New Antrum Irrigator.

3. Intestinal Antisepsis.—Harris calls our attention to the following points to be kept in mind: The tract itself, the choice of the antiseptic agent, the technique to be employed, and the proper interpretation of results. As to the tract itself, it must not be regarded as a dead, unresponsive tube, but as a living, independently reacting organ liable to irritation by the use of antiseptics, whereby the very microbes we wish to eliminate may be aided in multiplication. The absorptive power of the mucous membrane may exhibit increased activity in the case of certain agents by rapidly removing them from the intestines, and exerting possibly a harmful action on the body as a whole. Again, the antiseptic may become disintegrated through the action of the digestive and intestinal secretions and rendered inert. For antiseptic studies on the feces he enumerates the usual plate culture method, with or without the use of special mediums, the direct counting method of Klein as modified by Heberwerth, or that used by MacNeal, Latzer, and Kerr, and the centrifugal separation and weighing method of Strasberger. Antiseptic drugs fail to kill off per

gramme of feces, millions of indol producing bacteria whose habitat is in the large intestine. On the basis of evidence he agrees with Friedenwald and Leitz, in that "regulations of diet, with evacuation of the bowels, is the most effectual method of reducing the excessively high bacterial content of the large intestine."

4. Effect of Iodides on the Circulation and Bloodvessels in Arteriosclerosis.—See this JOURNAL for June 15th, page 1291.

5. Clinical Observations on the Duration of the Digitalis Action.—See this JOURNAL for June 15th, page 1291.

6. Antityphoid Inoculation; Three Years' Experience.—Spooner has experimented with antityphoid inoculations in the training school for nurses in Massachusetts, for a period of three years, and has noted many points in connection therewith. The injection of small amounts of a low virulence vaccine, frequently made, causes slight inconvenience, but does seem to immunize the nurses, who are eight times more liable to the disease than the average person. Their morbidity, under ordinary conditions, is 1.4 per cent., or nineteen cases among 1,361. Under these conditions only two cases developed. The case morbidity among the inoculated in these hospitals is about one ninth of that among the uninoculated. Five thousand injections have been made without any permanent untoward effects. Two and a half years' certain protection is indicated by the blood picture. The use of this means of protection has been demonstrated to be safe in two epidemics, and very efficient in at least one of them.

8. Antityphoid Inoculation in Public Institutions and in Civil Communities.—Hachtel and Stoner make a strong plea for the use of antityphoid vaccination, not only of hospital nurses and attendants in public institutions, especially in hospitals for the insane and for typhoid carriers, but for the immunization of the public at large, and suggest that health boards should distribute the vaccine free of all charge.

11. The Production of Active and Passive Immunity to the Pneumococcus with a Soluble Vaccine.—Hirschfelder treated ten pneumonia patients with an extract prepared from an emulsion washed with living pneumococci, with the recovery of all. Crisis set in within twenty-four hours after the first dose in a majority of cases. There was a rapid diminution in the number of leucocytes within twelve hours and preceding the fall of the temperature. Although the writer makes no estimate of the value of the treatment, he considers that its harmlessness has been demonstrated. As the serum of the dog cannot be used on human beings on account of its toxicity, experiments are being made with the serum from sheep and horses to produce an anti-pneumonic serum.

MEDICAL RECORD.

October 12, 1912.

1. ALEXANDER HAIG: Gout of Intestines.
2. MAX EINHORN: Agar Tubes for Estimation of Pancreatic Ferments.
3. MAX KAHN: History of Lithotomy Operation.
4. AUGUSTUS MAVERICK: Some Blunders Made by Nature in Treating Disease.
5. GOODRICH P. RHODES: Etiology of Adhesions Occurring on Large Intestine.
6. J. G. WILSON: Increase in Death Rate from Diabetes; a Possible Explanation.

1. Gout of the Intestines.—Haig holds that gout of the intestines is essentially a catarrhal process which affects primarily the mucous lining of the entire alimentary canal, and may be limited to it or involve the neighboring fibrous tissues. It follows the usual course of catarrhal inflammation, beginning with congestion and marked by mucous, mucopurulent or purulent exudation, being more amenable to treatment in the early stages. If unchecked it produces ulceration, increase of connective tissue, adhesions, and distortion of structure, more rarely to definite and visible deposit of bivalvates in bulk, and not uncommonly to an interstitial accumulation. Parts exposed to cold, acids, heat, or irritant substances are first affected, and it may spread by fibrous tissue continuity or by microbic invasion along with urate precipitation and impaired circulation and metabolism. The chronic irritation produced in the tissues paves the way for cancer, which affects chiefly the parts exposed to cold, acids, heat, and irritants. The warmer parts having a large supply of alkaline blood or secretion are avoided by catarrh and cancer alike, while the acid parts, stomach and rectum are favorite seats. The relation of these intestinal troubles to gout and rheumatism is constant, and like bronchial and other respiratory catarrhs they are all made worse by acids, cold, and retentives, and better by alkalis, heat, and uric acid solvents, thus aiding diagnosis. The indicated treatment is a uric acidfree diet, which will remove not only all signs of and all tendency to catarrh, but many of the connective tissue changes and distortions. In this way the writer explains the special liability of certain parts of the intestines to gout and cancer, and in a similar way the spread and special tissue habitats of tubercle and syphilis, so that freedom from food poisoning means a practical freedom from the more serious forms of microbic and parasitic invasion.

5. Etiology of Adhesions Occurring on the Large Intestine.—Rhodes makes the observation that in all these cases of adhesion there is ptosis of the cecum, and offers this fact to explain a certain sequence of events in their production. Chronic constipation causes cecal ptosis with a dropping downward of the cecum from the weight of fecal contents or as a part of the general visceroptosis. Venous stasis follows, due to pressure on the return circulation, lack of tone in the bowel wall, and irritation from the fecal contents now becoming increasingly toxic. Following these two conditions, the toxins penetrate the bowel wall, and later the germs as the condition becomes advanced. New tissue formation is produced by the continued action of these small amounts of toxins, exerted over a length of time, thus initiating a vicious circle. Many cases of secondary appendicitis are produced by this process of connective tissue formation when located about the appendix, in such a way as to constrict or to kink it.

6. Increase in the Death Rate from Diabetes; a Possible Explanation.—Wilson states that it is a matter of general belief that diabetes is on the increase. This is beyond doubt true in our large cities. The records of the New York city board of health showed in 1889 that out of every 1,000 deaths from all causes, 2.95 were ascribed to dia-

betes, while in 1910 the deaths from diabetes rose to ten per mille. Evidence is accumulating to show that diabetes is due to some hereditary defect and that consanguineous marriages accentuate this tendency to become diabetic. Stern observed the extreme prevalence of this disease among the foreign born, as out of a total of 202 patients in New York for 1899, only fifty-one were native born; the Jews suffered more than others from this disease, which greater susceptibility is attributed to the practice of inbreeding which obtains among them. It occurred to the writer that the increasing death rate from diabetes in New York might be dependent upon the increase in the Jewish population, and to this end he constructed a curve representing this increase, and compared it with a curve representing the death rate from diabetes, and found that these two curves followed almost identical lines. The striking correspondence of these two curves is sufficient ground for suspecting, at least, that the increased death rate from diabetes is chiefly explained by the increase of the Jewish population.

LANCET-CLINIC.

September 7, 1912.

1. B. F. LYLE: Latent Tuberculosis of Infants.
2. CHARLES A. L. REED: Repair of Upper Portion of Vagina in Cases of Prolapse of Uterus.
3. CHARLES T. SOUTHER: Suture Material.

September 14, 1912.

4. LUCIUS B. MORSE: Tuberculin Doses; Value of a Ratio Method of Increase.
5. C. NAUMAN McCLOUD: Prognostic Significance of Albuminuria and Casts.
6. STEPHEN H. BAXTER: Methods of Urinalysis Applicable to Insurance Examinations.
7. WILLIAM SCOTT: The Medical Society.

September 21, 1912.

8. OSCAR H. ROGERS: Medical Examiners from Standpoint of Medical Director.
9. E. A. BABLER: Selection and Training of Medical Examiner.
10. B. F. LYLE: Clinical Characteristics of Tuberculosis of Infants.

September 28, 1912.

11. W. E. LEWIS: Abdomen Philosophically and Clinically Considered.
12. M. J. SCHWED and A. L. GOLDWATER: Pulmonary Tuberculosis Treated by Dioradin.

4. Tuberculin Doses; the Value of a Ratio Method of Increase.—Morse advises that tuberculin be administered in the most gradual manner, and remarks that the dose scales commonly followed, even by the experts, show a marked irregularity of increase. The writer has worked out a dose scale which represents a perfectly even percentage increase, and the ratio of one dose to another remains always the same. He gives an initial dose of 0.10 c. c. The nine doses following the first are 0.13 c. c., 0.17 c. c., 0.22 c. c., 0.28 c. c., 0.36 c. c., 0.46 c. c., 0.60 c. c., 0.77 c. c., one c. c. The volumetric increase of the earlier doses is much less than 0.1 c. c., while the later doses considerably exceed this volume; the proportion of increase, however, is constant, thirty per cent. The writer has arranged for the usual number of doses, but if it is desired to advance the dose more rapidly, the same steady ratio can be maintained by using every other dose in succession.

AMERICAN JOURNAL OF INSANITY.

July, 1912.

1. HUBERT WORK: Sociological Aspect of Insanity and Allied Defects.
2. SOLOMON C. FULLER and HENRY I. KLOPP: Alzheimer's Disease.
3. HENRY A. COTTON: Problems in the Study of Heredity in Mental Diseases.
4. PETER BASSOE: Unilateral Hypertrophy, Involving Entire Left Side.

5. WILLIAM A. WHITE and FRANCIS M. BARNES, JR.: Plan for Indexing Cases in Hospitals for Insane.
6. CHARLES W. TRINK: Biography of Patient with Paranoid Delusional Ideas.
7. EDMUND M. PLASE: Hallucinations in Manic Depressive Psychoses.
8. FRIEDRICH C. EISENMAN and A. J. R. SANDER: Association in Feeble-Minded and Delinquent Children.
9. MORRIS J. KARPAS: Clinical Interpretation of Serological Content of Blood and Cerebrospinal Fluid, Cytology and Chemistry of Lateral Meningeal Lesions.
10. J. A. E. PRATER: Introductory Histopathological Study of Paraplegias in the Psychoses.
11. J. W. BABCOCK: How Long Has Pellagra Existed in South Carolina?

1. **Sociological Aspect of Insanity and Allied Defects.**—Work looks upon the increase of the percentage of mental defectives as one of the gravest dangers to civilization. Imbecility, insanity, pauperism, and crime are on the increase, owing largely to the unrestricted propagation of defectives. That segregation has failed is proved by the fact that it has been attempted for a hundred years, and recent statistics show that while the whole population has increased eleven per cent., insanity has increased twenty-five per cent. The alternative, the sterilization of defectives, seems to offer the most practical solution of the problem.

3. **Problems in the Study of Heredity in Mental Diseases.**—Cotton describes in detail, and with the aid of many charts, the principles of heredity as formulated by Mendel, in 1866. Mendel's work has received recognition only since its rediscovery in 1900. Since then many investigators have been occupied with the problems of heredity in plant and animal, also, to less extent, with human life. In relation to insanity, heredity, although recognized as an important factor, has received but little systematic study. The New Jersey State Hospital at Trenton has recently organized a permanent department of field work, with a special appropriation to carry on the work, in connection with after care, and has now two trained field workers. By this means information concerning the inmates of the hospital is collected from every available source. This plan has already led to very interesting and valuable results, and promises much for the future.

5. **Plan for Indexing Cases in Hospitals for the Insane.**—White and Barnes outline the plan of cataloguing cases which has been worked out at the Government Hospital for the Insane with the object of rendering more easily accessible the clinical records for subsequent research. After the patient's hospital career is ended the records are classified in three sections, viz., first, the mental diagnosis made clinically; second, the clinical diagnosis; and, third, the pathological findings. Primary consideration is given to the mental diagnosis. An extensive classification of mental diseases is presented, not as a scientific grouping, but for utilitarian and practical purposes.

11. **How Long has Pellagra Existed in South Carolina?**—Babcock has investigated the hospital records and other sources for evidence of the existence of pellagra prior to its recognition for the first time in 1907. He has unearthed many interesting cases which in all probability must have been pellagra. From his searches he is convinced that this disease has been present in the South Carolina State Hospital since its opening in 1828, and is therefore by no means a new disease there.

AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

September, 1912.

1. ANGETTE PARRY: Relation of Athletics to Reproductive Life of Women.
2. O. P. HUMPHSTONE: Pituitary Extract in Inertia uteri.
3. G. H. RYDER: Primary Uterine Inertia.
4. H. N. VINBERG: Streptococcemia Due to Streptococcal Infection of Subcutaneous Fibroid.
5. J. WESLEY LOWE: Statistics in Radical Operations for Cancer of Cervix uteri.
6. A. STURMDORF: Perineorrhaphy in Principle and in Practice.
7. D. S. D. JESSUP: Hodgkin's Disease Involving Uterus.
8. F. BIERHOFF: Paragraph 79 of the Page Law; Method of Administration in This City.
9. W. C. CALROCK COURSE: Prognosis and Treatment of Endocarditis in Children.
10. A. E. SCHMITZ: Some Physical Conditions Underlying Backwardness from Standpoint of General Practitioner.

2. **Pituitary Extract in Inertia uteri.**—Humphstone points out that the factor in labor over which we have the least control to-day is the power of the contractions of the uterus. As a result of animal experimentation with animal extracts a valuable aid has been found in the form of an extract of the infundibular end of the pituitary body. Humphstone also reviews the early work and then takes up the form of preparation used, the dose, and the effects in the different stages of labor.

3. **Some Observations on Primary Uterine Inertia.**—Ryder reports eighteen cases of primary inertia and concludes that there is great need of a drug which will stimulate regular uterine contractions. Strychnine takes too long to act, quinine is of little use, alcohol is only occasionally efficacious, while ergot is dangerous and should not be used till after labor. Pituitary extract, he believes, offers hope.

5. **Radical Operation for Cancer of the Cervix.**—Bovee reports that while his experience is small, he is greatly influenced by it and believes that the saving of twenty-two per cent. of his cases for an average of more than ten years is strong supporting argument for his method. He is less an advocate of removing the pelvic lymph nodes than formerly, thinking that it markedly increases the primary mortality from shock. The time of the operation should come within the hour and will do so if not too much time is used in dissecting out nodes.

6. **Perineorrhaphy in Principle and Practice.**—Sturmdorf calls attention to the innumerable methods that have been employed in the repair of the perineum, and points out that the majority have no anatomical basis. His article is richly illustrated, showing the anatomical relations and then step by step his technique. This latter emphasizes the significance of the levator ani in perineal support and the essentials of its repair in perineal injury.

7. **Hodgkin's Disease, Involving the Uterus.**—Jessup reports an interesting case in which the uterus was invaded throughout by Hodgkin's disease, in addition to the general enlargement of the lymphatic nodes.

8. **The Page Law of New York and Prostitution.**—Bierhoff quotes certain paragraphs from the Page Law, particularly No. 79. This provides for the medical examination of women who have been convicted of soliciting. If she were found to be suffering from a venereal disease, a woman would be sent to a city hospital till such disease was cured. When this law went into effect, a storm of protest arose which was directed exclusively against

the medical examinations of the convicted prostitutes. Most of these originated in the various women's rights organizations; but the Society for Sanitary and Moral Prophylaxis also took a stand in opposition to the law, as well as the County Medical Society through its committee on legislation. As a result of the opposition the law was carried to the higher courts and declared unconstitutional. In the opinion of the chairman of the Committee of Fourteen, the reasonable enforcement of the law would have cleared the streets of women who loiter and solicit and, granting proper hospital facilities, would have resulted in vastly better conditions than at present. Meanwhile, as Bierhoff says, the poison is allowed to spread unchecked.

CLEVELAND MEDICAL JOURNAL.

September, 1912.

1. H. O. RUH: Histological Changes in Organs in Patient Dying after Salvarsan.
2. J. PHILLIPS: Hypertonic Contraction or Intermittent Closing of Cerebral Arteries.
3. HELEN HEMPSTEAD: Care of Newborn Infant.
4. E. F. FREEDMAN: Anterior Poliomyelitis.
5. O. T. SCHULTZ: Visceral Pathology of Syphilis.

1. Histological Changes After Salvarsan.—

Ruh's patient received 0.5 gramme of salvarsan by vein and after the injection complained of severe abdominal pain. For three days following she voided no urine; on the fourth, however, she passed three ounces of clear urine, which was not examined. From then until death on the following day she passed no more. She died in coma, which came on two hours before death. On autopsy the striking changes were found in the liver and kidneys. In the gross there was little of special note in the liver, but on microscopical examination the parenchyma cells in the central part of the lobules were quite irregular in size and shape and had ragged, indistinct margins. Many contained a bright yellow pigment and all showed vacuoles of varying size. The protoplasm was granular and the nuclei were of different sizes and shapes, some being scarcely distinguishable. Some of the cells contained three or more nuclei, suggesting direct division. In other cells, not necessarily confined to this zone, there were cells which showed mitotic figures in various stages. In the kidneys the most marked change was found to be a proliferation of the tubular epithelium. This was present in all parts of the convoluted tubules. Polynuclear cells were common. Occasionally syncytial, budlike masses of protoplasm were found pushing the tubular basement membrane outward. There was an excessive amount of desquamation of the epithelial cells of the tubules. There were no evidences of a severe vascular injury, such as is so common after arsenical poisoning.

JOURNAL OF INFECTIOUS DISEASES.

September, 1912.

1. W. T. SEDGWICK, G. R. TAYLOR, and J. S. MACNUTT: Is Typhoid Fever a Rural Disease?
2. G. F. RUEDIGER: Sporotrichosis in United States.
3. J. P. SIMONDS and A. I. KENDALL: Simple Method for Isolating Anaerobes in Pure Culture.
4. E. C. ROSENOW: Experimental Infectious Endocarditis.
5. F. B. GURD: Variations in Complement Content of Serum and Plasma.
6. E. C. ROSENOW: Nature of Toxic Substance from Pneumococci.
7. LELLA JACKSON: Experimental "Rheumatic Myocarditis."
8. M. E. MORSE: Study of Diphtheria Group of Organisms by Biometrical Method.
9. E. C. ROSENOW: Toxicity of Broth, of Pneumococcus Broth Culture Filtrates, and Nature of Proteolytic Enzyme Obtainable from Pneumococci.

1. **Is Typhoid Fever a Rural Disease?**—Sedgwick, Taylor, and MacNutt's investigations were undertaken to determine whether, in proportion to the population, typhoid fever is more prevalent over rural or over urban areas. To settle the question the authors made a study of the mortality statistics of Massachusetts as a State having trustworthy records. The first and most important conclusion reached by their investigations is, that if there is taken as long a period as eighteen years previous to 1908, typhoid fever cannot be said to be in any real and true sense of the word distinctly a rural disease; that is to say, preeminently a disease of small communities composed of isolated or scattered dwellings distributed over country districts. Before that period, typhoid fever deaths were more prevalent in proportion to the population in the country than in the city districts. Since then typhoid fever appears to be an urban rather than a rural disease. It has also been noted that typhoid fever is quite as often spread from town to country as from rural to urban districts. A striking example of this is given by the epidemic of 1908 at Mankato, Minn.

JOURNAL OF NERVOUS AND MENTAL DISEASE

September, 1912.

1. LOUIS CASAMAJOR and MORRIS J. KARPAS: Alexia and Hemianopsia: Localization of Such Lesions.
2. WILLIAM G. SEILLER: Syphilis as Possible Cause of Degeneration of Motor Tract.
3. S. LEOPOLD: Progressive Muscular Atrophy, Probably Syphilitic in Origin, with Necropsy.

1. **A Case of Alexia and Hemianopsia.**—Casamajor and Karpas record a case of almost pure alexia associated with right homonymous hemianopsia, occurring suddenly in a woman of advanced years. Use is made of Liepmann's chart, and the most probable location of the lesion is placed deep in the white matter of the left occipital lobe where it involves the optic radiations, and also the commissural fibres from the right visual cortex to the left angular gyrus. The nature of the lesion was not determined.

2. **Syphilis as a Possible Cause of Degeneration of the Motor Tract.**—Spiller is inclined to subscribe to the comparatively new idea that syphilis is often an etiological factor in chronic degenerations of the motor tracts and cells of the anterior horn of the spinal cord, and that these diseases cannot be regarded as always abiotrophic, even though they may be so in certain cases. In support of this view he discusses the pathological findings in several cases of tabes and cerebrospinal syphilis with muscular atrophies, progressive spinal muscular atrophy, probably of syphilitic origin, and degeneration of the motor tracts. Altogether thirteen cases of these different types are considered, in all of which more or less extensive lymphocytic infiltrations of the pia and thickenings of the vessels were found, similar to the findings in other parasyphilitic diseases of the nervous system. Numerous cases are also cited from the literature which bear evidence in support of this view.

3. **A Case of Progressive Muscular Atrophy, Probably Syphilitic in Origin, with Necropsy.**—Leopold reports a case which presented, clinically, the picture of progressive spinal muscular atrophy occurring in a male of fifty years, and running its course to a fatal termination in four years. Patho-

logically the case showed extensive involvement of the anterior horn cells of the spinal cord, moderate degeneration of the motor tracts, and some sclerosis of the vessels of the spinal pia and lymphocytic circumvascular infiltration; these latter changes are considered as being probably indicative of syphilis.

MEDICAL REVIEW OF REVIEWS.

September, 1912.

1. ISA S. WILE: School Lunches and Medical Inspection.
2. MAXIMILIAN SCHULMAN: Advanced Pulmonary Tuberculosis in Tenements of New York.
3. ISRAEL BRAM: Olive Oil in General Practice.
4. JEROME WAGNER: Side Light on the Nurse Anesthetist Problem.
5. WILLIAM L. HOIT: Why Physicians Should Be Socialists.
6. JAMES J. WALSH: Why Physicians Should Not Be Socialists.
7. GEORGE W. HOPKINS: Can Modern Life Insurance Survive?
8. SAMUEL A. TANNENBAUM: Some Objections to Psychoanalysis.
9. J. VICTOR HABERMAN: Reply to Foregoing.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

September, 1912.

1. JOHN M. SWAN: Summary of Literature on Etiology of Beriberi.
2. CRIGHTON WELLMAN, C. C. BASS, and A. C. EUSTIS: Investigation of Louisiana Rice, with Reference to Etiology of Beriberi.
3. R. H. CREEL: Public Health Aspect of Beriberi.
4. W. H. WEAVER: Sodium Citrate in Treatment of Pneumonia.
5. F. T. BROWN: Congenital Syphilis.

1, 2, and 3. **Etiology of Beriberi.**—Swan defines beriberi as a disease of metabolism, characterized, pathologically, by a neuritis, and clinically by an acute stage resembling an acute infection, by a stage in which marked edema occurs, and by a stage of polyneuritis and paralysis, and due to a diet chiefly made up of uncured or white rice.—Wellman has conducted a series of experiments in which hens were fed on unpolished, and others exclusively on polished rice, plenty of water being given to all. Another set were fed upon cane sugar alone, and a fourth series upon polished rice with a small amount of cane sugar. Marked nerve symptoms appeared in from seventeen to twenty-three days in fowls fed exclusively upon polished rice. The same rice unpolished does not produce the disease and with a general diet promptly cures the disease. Pure cane sugar acts similarly and more rapidly than polished rice, while pure corn starch will produce the condition, but more slowly than polished rice.—Creel proposes a rice law fixing a standard of 0.4 per cent. phosphorus pentoxide, inspecting all cargoes and the output of all rice mills, with penalties.

4. **Sodium Citrate in the Treatment of Pneumonia.**—Weaver observes that most cases of pneumonia are seen during the first three days of the disease, and contends that full doses of sodium citrate, from thirty to forty grains every two hours for an adult, proportionate doses for children, according to age, if given immediately, will cause immediate and rapid lysis. A pulse and temperature remaining stationary for twelve to twenty-four hours, suggest progressive increase in the dose of sodium citrate until a falling pulse and temperature occur, when the dose may be considered right for that patient. These doses are continued, night and day, until the lung clears up. If any improvement follows, a more or less rapid lysis may be expected on the third day. The writer avers that bronchopneumonia, as well as lobar pneumonia, is amenable to this treatment. If symptoms indicate their use, other means, strapping for pleurisy, and baths for high temperature should not be neglected.

OPHTHALMIC RECORD.

September, 1912.

1. EDWARD JACKSON: Supervised and Systematic Study of Ophthalmology.
2. HARRY S. GRADLE: Tonometry: Description of a Tonometer.
3. WILLIAM EVANS BRUNER: Hemianopsia of Luctic Origin, with Partial Recovery.
4. A. EDWARD DAVIS and HARRY VAUGHAN: Phlyctenular (Eczematous) Conjunctivitis and Keratitis with Special Reference to Etiology and Value of Tuberculin as Diagnostic Agent; Report of Forty Cases.

PENNSYLVANIA MEDICAL JOURNAL

September, 1912.

1. B. KOHN: Liberal Feeding in Typhoid Fever.
2. S. E. TRACY: Recurrent Anuria Due to Ball Valve Calculus in Ureter of Single Functioning Kidney.
3. J. O. ARNOLD: Eclampsia in Primipara Aged Forty-five Years.
4. L. W. KOHN: Practical Experience with Spinal Anesthesia.
5. E. W. BEACH: Anesthetics.
6. S. G. DIXON: Medical Inspection of School Children.
7. C. C. LAFFER: Examination of the School Children of Meadville.
8. C. W. COULTER: Red Bank Physicians' Protective Association.
9. H. SKINNER: Life History of American Insects that Carry Disease.
10. C. M. COON: Placenta prævia from Standpoint of Country Practitioner.
11. J. H. DONALDSON: Three Abdominal Cases.
12. N. S. WEINBERGER: Relation of Refractive Errors and Nasal Abnormalities to Headache.

2. **Recurrent Anuria.**—Tracy records an extremely interesting case of this condition which was dependent upon obstruction of the ureter of the only functioning kidney by a stone acting as a ball valve. The anuria was often relieved by ureteral catheterization, and repeated radiographs failed to reveal the presence of the stone. Perhaps the most striking feature is the fact that the ureteral catheter was left *in situ* for a period of eleven days at one time. Further, it is instructive to learn how very many times (fifteen) the ureter may be catheterized without the production of an infection. In the course of the operation the ureter was torn partially through, but was sutured with a perfect result. In spite of the frequent recurrence of a palpable renal tumor during the attacks of anuria, there was no hydro-nephrosis.

Proceedings of Societies.

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, Montreal, Canada, May 29, 30, and 31, 1912.

The President, DR. ARPAD F. GERSTER, of New York, in the Chair.

Bloodless Surgery of the Liver.—Dr. JOHN R. McDILL, of Manila, Philippine Islands, said that in his method an enterostomy clamp armed with rubber tubing was passed through a one inch incision just below the ribs in the mid axillary line into the abdomen; one blade was introduced into the foramen of Winslow about two inches; when the clamp was closed the circulation in the liver could be turned on or off completely or partially as desired. For the support of the parts after resections of large wedges of liver tissue, a Martin gum bandage passed entirely around the liver was proposed. The experiments on dogs showed that from twenty to thirty minutes' complete interruption of circulation was not followed by bad results, and it was thought that in clinical work the circulation could be completely interrupted with safety for from eight to ten minutes. More experimental work, however, would be required to determine the limits of this procedure.

Doctor McDill's conclusions were: 1. Extensive liver resection for disease was limited to primary, single, or closely grouped, accessible, conditions; size might be no contraindication, unless too near the portal vein or hepatic arteries. In all primary growths Tuffier's caution should be carefully observed to determine glandular involvement along the vessels at the base of the liver. 2. All procedures could probably with safety be made entirely bloodless for at least eight or ten minutes; by opening and closing the forceps the circulation could be turned partially or entirely on or off to avoid the danger of a too prolonged interruption. 3. Great congestion of the gastrointestinal branches of the portal system, blueness of the intestines, and subperitoneal ecchymoses while using the clamp indicated a dangerous degree of back pressure. The shorter the time of complete temporary arrest of circulation, the better. 4. The variability of the liver tissue and of degrees of portal pressure should be remembered; a marked chronic portal congestion should contraindicate extensive operations. 5. Traumatic rupture of the liver frequently occurred without any external evidence. 6. In favorable cases liver tissue could be removed to the physiological limit under practically bloodless conditions. 7. Chloroform was always contraindicated in liver operations on account of the danger of sudden fatty degeneration and of necrosis and hemorrhage, due to the elimination of fibrinogen by the chloroform and inefficient coagulation; because fibrinogen was either formed wholly in the liver, or was wholly dependent upon liver activity for its production. 8. The clamp could be left *in situ*, open, to control a possible secondary hemorrhage. 9. The instruments required for any liver surgery were in the usual hospital armamentarium.

Dr. LEONARD FREEMAN, of Denver, said that he had found one of the most reliable and simple methods of preventing hemorrhage in resection of the liver to be the use of strips of gauze, made from the ordinary small folded tapes of gauze found in every operating room. A pair of narrow forceps of sufficient length to reach through the liver substance was plunged through the substance of the liver at the margin of the portion to be removed; two pieces of gauze were then seized and dragged through the hole in the liver; this procedure was repeated until the portion of liver to be removed was completely surrounded by gauze loops. The portion of each loop which lay beneath the liver substance had been cut in two and united with catgut in order to facilitate its removal. When these loops were tied down, not too tightly, the hemorrhage was completely controlled, and the portion of liver could be cut away like a piece of cheese. Another method employed in resecting large portions of the liver for multiple tumors was by the use of two wires forming a wire clamp; this method was particularly applicable to where a more or less detached portion of liver was to be removed. The wires should be stiff, and long enough when placed on each side of the tongue of tissue that their edges might project from the abdominal wound, and they could be bent in a gradual curve if necessary. In employing this method three or more catgut loops were dragged through the liver by means of a small

pair of alligator forceps, which seized the loops so that the free ends were all on one side; then one of the wires was inserted through the loops upon one side and the ends of the loop were tied over another wire on the other side, the wires then being brought firmly together, clamping the liver substance. At the end of a number of days the wires might be withdrawn, leaving the catgut loops in place to dissolve at will. This wire clamp had an advantage over the forceps clamp in that it did not crush the liver substance, the wires could be bent to conform to any sort of case, and the wire clamp could not slip from the liver substance as the loops passing through the liver held it firmly in place.

Acute Pancreatitis with Very Extensive Fat Necrosis.—Dr. LUCIUS W. HOTCHKISS, of New York, reported a case which had some extraordinary features which served to emphasize the great difficulties of diagnosis and treatment in this condition. He described briefly the results of animal experimentation by Frugoni and Stradiotti, in Florence, to determine the exact chemistry of fat necrosis, as well as the mechanism of its origin and spread. The case which formed the basis of the paper was that of a man of twenty-eight years who was brought to Bellevue Hospital about twelve hours after an acute sudden seizure of intense abdominal pain and vomiting, but without any notable shock, and in which the diagnosis was very obscure for several days, by reason of the development of certain pulmonary conditions. On the fifth day a tentative diagnosis of acute pancreatitis was suggested, when a definite, rounded, tender mass developed in the epigastrium. He was transferred to the surgical ward and operation at once performed, opening anteriorly through the lesser omentum, which was the seat of extensive fat necrosis into the lesser sac, and liberating much bloody fluid under pressure. Eighteen days later, as the patient was failing, a second operation was done, opening the lesser sac through a left lumbar incision and setting free large pieces of necrotic fat and pancreas. This opening, together with the reopened anterior incision, established free, through drainage, and although the patient was extremely weak, emaciated, and anemic, he improved steadily and the posterior opening closed. A third operation, which had to be undertaken nearly a month later for a perforation of the stomach which suddenly developed and threatened to cause starvation of the already enfeebled patient, consisted in the rapid suture of a small perforation in the posterior stomach wall just above the greater curvature. After this, convalescence proceeded uninterruptedly, and the patient reported well and fat several months later.

Dr. MAURICE H. RICHARDSON, of Boston, said that he had never had any success in operating in cases of acute pancreatitis, that all his recoveries had occurred in cases which had been left to Nature. He believed that operative interference in a suppurative condition involving the entire pancreas was almost certain to bring about a fatal result.

Dr. JOHN B. DEEVER, of Philadelphia, stated that physicians frequently confounded a condition of pancreatitis with effusion with that of pleuritic effusion,

but in his opinion acute pancreatitis should always be considered when there was a history of sudden illness accompanied by acute epigastric tenderness and rigidity.

Dr. CHARLES A. PORTER, of Boston, referred to two cases of acute pancreatitis. In one a diagnosis of acute intestinal obstruction had been made, but a condition of acute hemorrhagic pancreatitis found. In this case an incision was made along the pancreas, a large amount of the viscus sloughed, but the patient eventually recovered. Because of persistent right sided pain, however, a second operation was performed, when a puttylike accumulation was removed from the head of the pancreas; diabetes later developed in the patient; he had been under observation for about five years. In the other case the condition of acute pancreatitis developed four days after a forceps delivery under ether; when the abdomen was opened an acute fat necrosis was found, and the woman died two days later.

Dr. HENRY B. DELATOUR, of Brooklyn, reported a case very similar to that of the author, in a patient of thirty-two years, whom he saw on the fifth day after onset of symptoms; there was a decided bulging, just above and to the left of the umbilicus; a median incision was made, and there being evidence of fatty necrosis, on examination the cavity was found to extend back to the stomach. The anterior wound was lightly packed and a posterior left lumbar incision made, permitting the evacuation of about a quart of thin, purulent material. This wound was packed with zinc oxide gauze and a rubber drainage tube inserted. On the fifth day following operation there was a discharge of the contents of the stomach through the drainage tube, anterior drainage having been removed at the end of the fourth day. The patient recovered.

Dr. GEORGE WOOLSEY, of New York, considered the essential feature in the treatment of these cases to be the drainage, saying that he never touched the pancreas and had had no trouble in any of his cases in obtaining a good result. He simply instituted drainage.

Dr. ARPAD G. GERSTER, of New York, considered drainage the only salvation in cases of acute pancreatitis, and particularly recommended posterior drainage as being more in conformity with the law of gravity than was anterior drainage.

Hemorrhage into the Peritoneal Cavity Caused by Accidental Rupture of the Ovary.—

Dr. ALEXANDER PRIMROSE, of Toronto, Canada, pointed out that, as the result of a severe strain, a blood cyst of the ovary might rupture and cause serious and even fatal hemorrhage into the peritoneal cavity. He submitted that such an accident was not only possible, but that it was probably of much more common occurrence than we imagined. The most common cause of intraperitoneal hemorrhage in women was dependent upon an extra-uterine gestation, and this fact had probably caused many authors to overlook other etiological factors in the production of such hemorrhages. The two cases now recorded were not connected with pregnancy. In both instances what appeared to be a normal Graafian follicle had ruptured as the result of an accidental strain. In one instance the patient lifted a heavy weight and the rupture immediately

occurred. In the other case the patient had a violent attack of vomiting in the early stage of an acute appendicitis, and this brought about a similar result. In both instances serious hemorrhage occurred into the peritoneal cavity and almost proved fatal in one of the patients. The sequence of events in the latter case was quite obvious. The patient had an attack of acute appendicitis two days before her monthly period was due, and a violent attack of vomiting had brought about rupture of a Graafian follicle. The hemorrhage into the peritoneal cavity had been slow and had shown no symptoms, but was discovered only when the abdomen was opened for the removal of the appendix, twelve hours afterward. Had the patient been left until morning she not only would have run considerable risk from an attack of acute suppurative appendicitis, but she might have lost her life from hemorrhage.

Doctor Primrose pointed out that very little attention was given to the rupture of blood cysts of the ovary in the absence of pregnancy in our textbooks. The possibility of such an occurrence was pointed out by Nelaton as long ago as 1851, and from time to time quite a number of cases had been reported in the literature. In some cases recently observed an error in diagnosis had been made, because the conditions present simulated acute appendicitis. It had also been mistaken for perforated gastric or duodenal ulcer, and undoubtedly confusion had occurred in diagnosing between ectopic gestation and the rupture of a Graafian follicle in the absence of pregnancy. As far as he was aware, the second case recorded was the only one in the literature where an acute septic appendicitis was complicated by a serious intraperitoneal hemorrhage from the accidental rupture of a Graafian follicle.

Surgical Diseases of the Abdomen and Uterus Complicating Pregnancy.—Dr. MAURICE H. RICHARDSON, of Boston, said that two things in the course of modern surgery had made this subject of especial importance to the medical profession; the first was the great multiplication of abdominal operations by which conditions resulted, interfering with pregnancy; and the second was the perfection of operative technique, by which operations within the abdomen, even upon the uterus itself, might be performed without interrupting the course of pregnancy. The surgical treatment of pathological conditions complicating pregnancy should be influenced, first by our knowledge of the great tolerance of the pregnant uterus to general anesthesia and to operative manipulation, sometimes of great extent. In the author's experience, pregnancy had never been interrupted in such operations as those for chronic appendicitis, acute cholecystitis, the removal of ovarian tumors, or that of uterine fibroids so large as to prevent the successful delivery of a viable child. Moreover, success had followed the freeing of a gravid uterus from a ventral fixation at four months.

Another group of cases was that of abdominal tumors not interfering directly with the uterus itself, but taking up abdominal space that could not be spared by the full term uterus. Such operations as the removal of large ovarian cysts or other tumors had been followed by no interferences with the course of pregnancy. Not that these operations

should be performed during pregnancy unless there was good reason for their performance, but in case of absolute necessity the surgeon in the great majority of cases need not fear an interruption to the pregnancy. To show the tolerance of the uterus, as well as the difficulty at times of recognizing a pregnancy, unsuspected until its demonstration by laparotomy, instances were given in which it had been found impossible to say, with the uterus in the surgeon's hands, whether it was pregnant or enlarged by a new growth.

An important consideration was that of being always prepared, in a woman of childbearing age, for an unexpected pregnancy. Pregnancy might be wholly unexpected, but it should never be unsuspected. Many of the gravest emergencies and most difficult problems of decision were suddenly presented in the treatment of demonstrated but unexpected pregnancy. This fact should always be borne in mind in the diagnosis and prognosis of pelvic tumors in women of childbearing age.

The most important consideration was the diagnosis, prognosis, and treatment of tumors of the gravid uterus itself. The guiding idea was the wonderful tolerance of the gravid uterus and its power of self extrication from mechanical difficulties apparently unsurmountable. Evidence had been advanced in support of the proposition that when in doubt a gravid uterus presenting tumors that would apparently prevent parturition should be watched knife in hand. In several cases success followed the removal of a fibroid from the uterine body or cervix apparently hopelessly obstructing the parturient canal. Full term healthy children were delivered normally. In other cases fibroid tumors, situated at or near the fundus, did not interfere at all.

The writer's conclusions were as follows: A pregnancy threatened by surgical conditions within the uterus should not be interrupted unless, 1, it is clear that pregnancy could not possibly go on; 2, for pregnancy to be allowed to continue it must appear that the life of the child was practically safe while the danger to the mother was slight; 3, to allow the pregnancy to continue uninterruptedly it must appear that at the last moment through intervention both mother and child might be saved by a Caesarean section, or by an operation no more dangerous to the mother than would have been an early operation destructive to the child and saving to the mother; 4, to allow pregnancy to continue it must appear that the child could live without jeopardizing by delay the success upon the mother of a radical operation for malignant or other disease, as in cancer of the cervix, the breast, or elsewhere; acute appendicitis, acute cholecystitis, pyelitis, etc.; 5, pregnancy, complicated by abnormal surgical conditions that seemed to demand its forcible interruption, should be carefully watched, as it were, knife in hand, but never interfered with unless the need for interruption was plain.

Dr. JOSEPH C. BLOODGOOD, of Baltimore, said that some years ago he reported two cases of clinically acute appendicitis, in one of which was found free blood in the peritoneal cavity coming from the right ovary: hemorrhage was not excessive, nothing was

done to the appendix, and the patient recovered. In the second case the hemorrhage was found coming from the fimbriated end of the Fallopian tube, the operation taking place during menstruation. In neither case was there any clinical suggestion of hemorrhage. Following this experience he went over the histories of a number of cases and found that, in the case of men, he had never seen, or never recorded, hemorrhage in the peritoneal exudate. Up to the present time he had records of six cases of early appendicitis in women, some during the menstrual period, some in the interval, with considerable hemorrhage in the peritoneal cavity, but never to the degree reported by Doctor Primrose. In many cases the hemorrhage was but slight and there was no indication for the removal of ovary or tube.

Dr. HOWARD LILIENTHAL, of New York, reported a case of a patient, a woman of thirty-two years, married two months, who had menstruated for the last time six weeks before he saw her, and then after an indiscretion in diet she vomited and became very faint. In a few hours another attack of faintness came on, followed by others at short intervals; she had all the symptoms of hemorrhage. Incision revealed a fibroid as large as a cocoanut attached to a gravid uterus, and the peritoneal cavity full of blood. The fibroid was removed and the uterus sutured; the site from which the hemorrhage came could not be discovered. The patient made a good recovery, and there had been no miscarriage at the time of this report, three weeks after operation.

Dr. JOHN B. DEEVER, of Philadelphia, stated that he considered acute appendicitis more important in the female than in the male, and that he believed salpingitis often resulted from the condition of the appendix. It was his experience to see more cases of tubal abortion than of tubal rupture. In acute appendicitis, during pregnancy, he advocated immediate removal of the appendix.

Dr. A. VANDER VEER, of Albany, reported a case in connection with Doctor Primrose's paper, in which a diagnosis of intraperitoneal hemorrhage was made but operation not performed. The patient recovered slowly but completely, having an icebag applied and being kept in a condition of complete rest. He also referred, in connection with Doctor Richardson's paper, to a paper of his own on the subject of pregnancy complicated with inoperable cancer of the cervix, and said that it was his custom under such circumstances to advocate the emptying of the uterus.

Dr. ARPAD G. GERSTER, of New York, stated that he had twice seen a gravid uterus removed, once supposedly for an ovarian tumor, and once for a fibroid growth, and deprecated the making of such diagnoses, which seemed impossible in the late months of pregnancy. He added to conditions requiring operation that of a twisted ovarian tumor on the right giving the symptoms of an acute appendicitis.

Acute Diverticulitis of the Sigmoid Flexure of the Colon.—Dr. CHARLES A. POWERS, of Denver, reported in detail a typical case of gangrenous diverticulitis occurring in a very obese man of forty-nine years. The symptoms were those of an

acute left sided appendicitis. Operation was done at an early hour, a gangrenous diverticulum the size of an olive being removed from the middle of the convex border of the sigmoid flexure, together with a considerable amount of adjacent gangrenous epiploic fat. Careful closure of the wound in the intestine was done with stab wound drainage through the left flank. A stormy period of two days was followed by a smooth course. On the seventh day the temperature and pulse had been normal for some days and the patient was apparently making an excellent recovery, when he suddenly succumbed to pulmonary embolism, death taking place one hour after the first thoracic symptom. Post mortem examination revealed a clean abdomen without peritonitis, the suture of the sigmoid being intact, and the intestine showing no appreciable narrowing at the seat of the affection.

(To be concluded.)

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Kidney Diseases. By W. P. HERRINGHAM, M.D., F.R.C.P., Physician to St. Bartholomew's Hospital, etc. With Chapters on Renal Diseases in Pregnancy, by HERBERT WILLIAMSON, M.D., F.R.C.P., Assistant Physician Accoucheur to St. Bartholomew's Hospital, etc. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1912. Pp. xvi-378. (Price, \$5.50.)

This compact, well printed book is mainly interesting because a physician has written of both medical and surgical diseases of the kidney. It is to be regretted that the author does not preface his book by saying that surgical diseases of the kidney are considered from the physician's standpoint. For instance, in the chapter on renal function the author says: "One method (to obtain the urine of each kidney separately) of doing this is by a Luys separator. . . . Of late years, however, the catheterization of the ureters has taken the place of separation in the bladder; and, though it occasionally gives rise to unpleasant symptoms, its results are so much more certain that it will certainly supplant the other method." This very inadequately expresses the modern urologist's point of view. We can find no reference to the phenolsulphone-phthalein test of the functional activity of the kidneys which has in America practically supplanted all other tests. The inaccuracy in diagnosis, prognosis, and treatment, when surgical diseases of the kidney are considered, obtains throughout the entire book. We find on page 326: "The urine (in a case of hydronephroses) of the two kidneys was segregated in several, and the secretion from the affected kidney found to be less in quantity than that of the other. In two cases, on the other hand, in which the secretion was equal, the tumor disappeared." Again on page 72: "I remember two cases in which, after severe exertion in walking, man for a time passed blood. Both occurred in Switzerland, and from the symptoms it seemed that the bladder was the part affected. I must add, however, that the urine could not be examined by the microscope. Both these men many years later suffered with enlarged prostate." On page 340: "Cases of tuberculous infection of the kidney from some old focus elsewhere in the body are usually but a part of military tuberculosis affecting many organs. In such cases the kidney is not the most important part involved." Such a viewpoint as this would lead us to give a hopeless prognosis in most cases of kidney tuberculosis. In the chapter on polycystic disease of the kidneys, on page 233, the writer says: "The treatment resolves itself into that of chronic nephritis. A

cystic kidney should never be operated on unless by its bulk it is endangering life." In his kidney tumor nomenclature the author prefers to use the word sarcoma rather than hydronephroma. As a rule the author's language is terse, and in some instances picturesque. Sometimes his meaning is somewhat veiled, as on page 238: "A pyonephrosis is a collection of pus within the pelvis, which is sufficient to produce a tumor that has lasted a considerable time." We find in the chapters on nephritis no reference to Van Orden's monumental work which has revolutionized the treatment of this disease. The form of the book is excellent, the author including in the subject matter many case reports.

Manual of Surgery. By ALEXIS THOMSON, F.R.C.S. Ed., Professor of Surgery, University of Edinburgh; Surgeon to the Royal Infirmary, and ALEXANDER MILES, F.R.C.S. Ed., Surgeon Emeritus to the Royal Infirmary. Volume II. Regional Surgery. Fourth Edition, Revised and Enlarged, with 274 Illustrations. Edinburgh, Glasgow and London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1912. Pp. xv-924. (Price, \$3.50.)

The revised second volume of this manual deals with regional surgery, beginning with affections of the scalp and ending with those of the fingers and toes. It ignores the division into specialities and takes up gynecology, orthopedics, and genitourinary surgery. To cover such a large field in a small volume requires very brief treatment of each subject, and the reader has the impression of being hurried through one subject to get to the next. The result is that one does not get a very comprehensive idea of any one topic. It is too compact even for use as a textbook for students except in preparation for an examination. In this particular it is in very strong contrast to the German textbooks, which discuss each subject most thoroughly and not merely with a view of its practical aspects. The present volume is really a compendium where one who is in haste may get the salient features of a topic. It would thus be of service to a general practitioner or to a general surgeon who wished to brush up on symptoms and treatment. It is not a book for the specialist in any department of surgery, as details of symptoms and treatment are lacking. Some of the illustrations are interesting, a few are poorly executed, and many are missed where they would be helpful in elucidating the text. The author gives some good points based on evident practical experience, but has not furnished enough "fundamentals" to make the book of great value to the student or the general practitioner. One has the feeling that, had the author given more time to the preparation of the work, a better result could have been achieved.

Quain's Elements of Anatomy. Eleventh Edition. Editors: EDWARD ALBERT SCHÄFER, LL.D., Sc.D., M.D., F.R.S., Professor of Physiology and Histology in the University of Edinburgh; JOHNSON SYMINGTON, M.D., F.R.S., Professor of Anatomy in the Queen's University of Belfast; THOMAS HASTIE BRYCE, M.A., M.D., Professor of Anatomy in the University of Glasgow. In Four Volumes. Volume II, Part I. Microscopic Anatomy, by E. A. SCHÄFER. With 1,001 Engravings, and 21 Colored Plates. London, New York, Bombay, and Calcutta: Longmans, Green, & Co., 1912. Pp. xi-739. (Price, \$7.50.)

This latest edition by Professor Schäfer serves but to enhance the reputation of this great work. In wealth of illustration, in clearness of descriptive text, in its evidence of research, it commands a high place. Its bibliographical references alone make of it a library for the student, teacher, and research worker.

The Theory of Schizophrenic Negativism. By Professor Dr. E. BLEULER, Professor of Psychiatry, University of Zurich, and Director of Burghölzli Asylum. Translated by WILLIAM A. WHITE, M.D., Superintendent of the Government Hospital for the Insane, Washington, D. C. Nervous and Mental Disease Monograph Series No. 11. New York: The Journal of Nervous and Mental Disease Publishing Company, 1912. Pp. 36. (Price, 60 cents.)

This pamphlet renders available to readers of English an analytic study of the manifestations of negatives written

by one of the ablest German alienists. The author has been able to localize the motor phenomena of negativism only in ideas, in contrast to the views of some writers who assume that peripheral disturbances, antagonistic action of muscles, etc., are important factors. It is made clear that negativism is not a unitary symptom, but manifests itself in many forms and complexes. The ordinary external negativism is caused to a large extent by "the withdrawing of the patient into his phantasies, which make every influence acting from without comparatively an intolerable interruption." Inner negativism, on the other hand, is largely accounted for by ambidexterity and ambivalency "which in view of the inner splitting of the thought render intelligible a slight preference for the negativistic reaction."

Polycythämie und Plethora. Von Dr. HANS HIRSCHFELD, Berlin. Mit 3 Abbildungen auf einer Tafel. Halle a. S.: Carl Marhold, 1912. Pp. 54.

In the introduction the author calls attention to the confusion that exists concerning nomenclature. The term employed by him to indicate an increase in the number of red corpuscles is polycythemia or erythrocytosis, this being comparable to the term leucocytosis when the condition is a secondary one. If the condition is idiopathic and accompanied by changes in the erythroblastic tissues, Türk's term of erythremia is used, akin to leuchemia. Secondary erythrocytosis is dismissed in a few pages, it being subdivided into physiological, toxic, and pathological.

Under the heading of erythremia, twenty-four pages are devoted to erythremia megalosplenica. The symptomatology is given in detail, particularly the changes occurring in the spleen and the blood. In the chapter on pathogenesis the histological changes of the various organs are given, and the opinions of many authors concerning the causation of the disease are discussed. A couple of pages are devoted to a form of erythremia unaccompanied by splenic enlargement, referred to as Geisböck's disease. Some three pages are given over to the therapy. Then follows a bibliography giving 151 references to articles dealing with the subject.

The monograph is particularly valuable on account of the presentation of the views of many investigators and can be well recommended.

A Textbook of Gynecology. By WILLIAM SISSON GARDNER, M.D., Professor of Gynecology, College of Physicians and Surgeons, Baltimore. With One Hundred and Thirty-eight Illustrations in Text. New York and London: D. Appleton & Co., 1912. Pp. xiv+286.

This volume fulfills very well the purpose for which it was intended, viz., a textbook for the overcrowded medical student, with the facts covering the subject, briefly but clearly stated. Commendable features of the book are that subjects belonging more properly to general surgery, have been omitted, and the rare diseases receive but limited space, while the more common diseases with which it is essential that the student should be familiar, are given more in detail. The contents are divided into twenty-two chapters, beginning with the examination into the patient's menstruation, diseases of the vulva, vagina, urinary system, the uterus and annexa, and new growths. The closing chapters are on technique, postoperative complications, and postoperative treatment. The work is gracefully written and very well illustrated.

A Dermal Treatment of Locomotor Ataxia. By L. N. DENSLOW, M.D., Late Physician, Diseases of the Skin (Out Patients), Bellevue Hospital, New York; Late Professor of Genitourinary Surgery and Venereal Diseases, St. Paul Medical College, Minnesota. London: Baillière, Tindall & Cox, 1912. Pp. ix+118.

In the experience of the author of this little volume all subjects of tabes present an abnormal condition of the urethra, and treatment directed to the correction of that condition alleviates or cures the tabetic symptoms. So much we can follow and accept in a measure, but when, on the basis of his experience as a genitourinary surgeon, he propounds a new theory of the etiology of tabes, that degenerations of the posterior spinal roots and tracts, lymphocytosis of the spinal fluid, not to mention other pathological manifestations of tabes, are the result of long continued though unconscious sensory impulses emanating

from a diseased urethra, we are entertained, but scarcely convinced. The reason for the preponderance of cases in the male over the female is stated to be the greater extent of the urethral surface in the male. Notwithstanding the fact that the etiology of tabes is not established on a basis satisfactory to all, it is doubtful if this new theory will receive wide acceptance.

Lawyers, Doctors, and Preachers. A Satirical Survey of the Three Learned Professions. By GEORGE H. BRUCE, A.M., LL.B., of the New York, New Jersey, and Nebraska Bars. New York: The Irvington Publishing Company, 1912. Pp. 107. (Price, \$1.)

This is a satirical presentation of the author's attitude toward members of the learned professions, parts of which will be read with amusement by every professional man, i.e., the parts which refer to the professions not his own. Anecdotes abound, many of which have justified their existence by centuries of postprandial and other use; in fact, original matter, except in the retelling of these stories, is scant. Such a work will naturally find its way into the libraries of all professional men.

BOOK AND MAGAZINE NOTES.

We have received *Augustus Charles Bernays*, a memoir by Thekla Bernays (St. Louis: C. V. Mosby Company, 1912. Pp. 309. Price, \$2). The friends and admirers of the late physician will find it an interesting and entertaining work, written with the sympathy and skill to be expected of a talented sister. It begins with the ancestry of Doctor Bernays and is minute in its detail of those influences on his childhood and youth which bore fruit later in his successful practice. It is to Doctor Bernays apparently that we owe the common mercury bichloride and citric acid antiseptic tablet, the *Golden Rules of Surgery*, and many ingenious surgical methods. Those who disagreed with Doctor Bernays will read this book probably without sympathy, but it is nevertheless very impartial and does not blink the subject's faults. It is a loyal tribute and a very readable one.

In his admirable *Mark Twain, A Biography*, Albert Bigelow Paine, probably following a mistake on the part of his hero, falls into the curious error of confounding a simple dislocation of the inferior maxilla with lockjaw. Young Clemens, his sisters and brothers, were taught to beware of the latter as a possible penalty of their barefoot existence, but they understood the disease to be what a neighboring negro slave periodically experienced. Uncle Dan'l, when he opened his mouth to its utmost capacity, sometimes felt the joints slip, and his mouth remained a fixed abyss until "the doctor came and restored it to a natural position by an exertion of muscular power that would have well nigh lifted an ox."

The Penny Piper of Saranac, by Stephen Chalmers, in the *Outlook* for October 12th, smoked cigarettes and left the butts on the furniture; much was forgiven him, however, for he was no less a personage than Robert Louis Stevenson. The relations between the poet author and Doctor Trudeau are described with a sympathetic pen. Quotations are also given from letters of another poet, Thomas Bailey Aldrich, who visited Saranac, not on his own account, but on that of his son; these quotations refer to the fact that in their time, Stillman and Emerson also had been visitors to the Adirondacks. *Balantrae* was written under the inspiration of the "clear, cold, and sweet" air, which Stevenson breathed greatly to his benefit.

Recent issues in the Practical Medicine Series of the Chicago Year Book Publishers, are *General Medicine*, by Frank Billings, M.S., M.D., and J. H. Salisbury, A.M., M.D.; *General Surgery*, by John B. Murphy, A.M., M.D., LL.D.; *Eye, Ear, Nose and Throat*, by Casey A. Wood, C.M., M.D., D.C.L.; Albert H. Andrews, M.D., and Gustavus P. Head, M.D.; and *Gynecology*, by Emilius C. Dudley, A.M., M.D., and C. von Bachele, M.S., M.D. Under the general supervision of the editors, Dr. Gustavus P. Head and Dr. Charles L. Mix, this series maintains its reputation as presenting indispensable summaries of recent past work in a convenient, well edited, and well printed form.

Meetings of Local Medical Societies.

MONDAY, October 28th—Medical Society of the County of New York.

FRIDAY, November 1st—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Gynecological Society, Brooklyn; Manhattan Dermatological Society; Practitioners' Society of New York; Corning, N. Y., Medical Association; Saratoga Springs Medical Society.

Official News.

Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending October 16, 1912:

Brown, B. W., Surgeon. Relieved from duty at Hong-kong, China, and directed to proceed to Yokohama, Japan, and assume command of the service at that port. **Carter, P. I.**, Acting Assistant Surgeon. Relieved from duty on the revenue cutter *McCulloch* and directed to rejoin his station at Port Townsend, Wash. **De Valin, Hugh**, Passed Assistant Surgeon. Relieved from temporary charge at the Marine Hospital, Port Townsend, Wash., and directed to proceed to San Francisco, Cal., and report to the medical officer in command of the Marine Hospital for temporary duty. **Geddings, H. D.**, Surgeon. Granted two months' leave of absence, from October 7, 1912. **Goldberger, Joseph**, Assistant Surgeon General. Detailed to represent the service at the annual meeting of the Kentucky State Medical Association, to be held in Louisville on October 28 to 31, 1912. **Irwin, Fairfax**, Surgeon. Relieved from duty at Yokohama, Japan, upon arrival of Surgeon B. W. Brown, and directed to proceed to Boston (Chelsea), Mass., and assume command of the service at that port. **Ross, H. B.**, Acting Assistant Surgeon. Granted thirty days' leave of absence, without pay, from October 5, 1912. **Tarbell, B. C.**, Acting Assistant Surgeon. Granted thirty days' leave of absence, from October 1, 1912.

Boards Convened.

Board of medical officers convened to meet at the Marine Hospital, Port Townsend, Wash., Monday, October 28, 1912, at 11 o'clock a. m., for the physical examination of officers of the revenue cutter service to determine their fitness for promotion. Detail for the board: Passed Assistant Surgeon Baylis H. Earle, chairman; Passed Assistant Surgeon Hugh de Valin, recorder.

Births, Marriages, and Deaths.

Married.

Baker—Wilhelm.—In Oklahoma City, on Tuesday, October 1st, Dr. Louis G. Baker and Miss Angelina A. Wilhelm. **Bruner—Eves.**—In Philadelphia, on Wednesday, October 9th, Dr. John W. Bruner, of Bloomsburg, and Miss Margaret Eves. **Cowell—Sherk.**—In Camden, N. J., on Wednesday, October 9th, Dr. Selden Sylvester Cowell, of Hunsdale, Pa., and Dr. Katherine Rebecca Sherk, daughter of Dr. and Mrs. Henry H. Sherk. **Dwyer—Kelly.**—In Corning, N. Y., on Wednesday, October 9th, Dr. John F. Dwyer and Miss Anna M. Kelly. **Enderle—Van Winken.**—In Chicago, on Tuesday, September 24th, Dr. Adolph G. Enderle, of St. Louis, Mo., and Miss Madeline Van Winken. **Ford—Pickering.**—In Del Monte, Cal., on Monday, October 7th, Lieutenant Harry G. Ford, Medical Corps, United States Army, and Miss Mary Edith Pickering. **Goddard—Waddell.**—In Wilkes-Barre, Pa., on Wednesday, October 16th, Dr. Herbert Markell Goddard and Miss Janet Wallace Waddell. **Logan—Witham.**—In Gloucester, Mass., on Wednesday, October 9th, Dr. Frank Parker Tays Logan and Miss Eleanor Merriam Witham. **McElvain—**

Coulter.—In Joplin, Mo., on Thursday, October 10th, Dr. Robert Childers McElvain, of St. Louis, and Miss Florence Thelma Coulter. **Miller—Horst.**—In Myerstown, Pa., on Saturday, October 12th, Dr. Harvey D. Miller and Miss Mary E. Horst. **Noblin—Kelly.**—In Roanoke, Va., on Saturday, October 12th, Dr. Joseph Alexander Noblin, of East Radford, and Miss Josephine May Kelly. **Owen—Broome.**—In New Bedford, Mass., on Saturday, October 12th, Dr. James W. Owen and Mrs. Lavinia Broome. **Pettit—Jones.**—In Millville, N. J., on Wednesday, October 9th, Dr. Herschel Pettit, of Ocean City, and Miss Virginia Jones. **Queen—Wholey.**—In Staunton, Va., on Tuesday, October 15th, Dr. William Gwynn Queen, of Baltimore, Md., and Miss Loretta Agnes Wholey. **Reasor—Swilkey.**—In Philadelphia, on Saturday, October 12th, Dr. Jameson Budd Reasor and Miss Dorothy O. Swilkey. **Rogers—Houghton.**—In Trenton, N. J., on Tuesday, October 8th, Dr. William Rogers and Mrs. Mary P. Houghton. **Roy—Myer.**—In Richmond, Va., on Tuesday, October 8th, Dr. James Philip Roy and Miss Beulah B. Myer. **Sneed—Wade.**—In Richmond, Va., on Wednesday, October 9th, Dr. Albert M. Sneed, son of Dr. and Mrs. Edgar Morris Sneed, of Amherst, Va., and Miss Lucy Harrison Wade. **Sparrow—Bowen.**—In Mettapaosett, Mass., on Saturday, October 19th, Dr. Charles Atsatt Sparrow, of Worcester, and Miss Marguerite Elizabeth Bowen. **Zahn—Harrison.**—In Ardmore, Pa., on Wednesday, October 16th, Dr. Samuel F. Zahn, of Philadelphia, and Miss Jennie M. Harrison.

Died.

Adamson.—In Maysville, Ky., on Wednesday, October 9th, Dr. H. K. Adamson, aged fifty-eight years. **Birdsall.**—In Susquehanna, Pa., on Saturday, October 12th, Dr. Samuel S. Birdsall. **Buchtel.**—In Denver, Colo., on Monday, October 15th, Dr. William Harmon Buchtel. **Burg.**—In Denver, Colo., on Thursday, October 10th, Dr. W. F. Burg, aged fifty-three years. **Chase.**—In Cleveland, Ohio, on Saturday, October 5th, Dr. Francis E. Chase, aged forty-nine years. **Chavanne.**—In Salem, N. J., on Wednesday, October 16th, Dr. Henry Chavanne. **Clarke.**—In Oakmont, Pa., on Tuesday, October 8th, Dr. Samuel D. Clarke, aged sixty-eight years. **Dillon.**—In Boston, Mass., on Wednesday, October 16th, Dr. Thomas Joseph Bennett Dillon, aged forty years. **Garman.**—In Berlin, Pa., on Wednesday, October 2d, Dr. John S. Garman, aged fifty-two years. **Garman.**—In Berlin, Pa., on Sunday, October 6th, Dr. William A. Garman, aged eighty-three years. **Gorse.**—In Meadowbrook, on Thursday, October 10th, Dr. Charles Asbury Gorse. **Gossett.**—In Monticello, N. Y., on Sunday, October 6th, Dr. Abraham Joseph Gossett, of New York. **Lansing.**—In Detroit, Mich., on Friday, October 11th, Dr. Richard Ray Lansing, aged sixty-three years. **Leedom.**—In Plymouth Meeting, Pa., on Monday, October 14th, Dr. Oscar Leedom, aged sixty years. **Lenneker.**—In Chicago, on Tuesday, October 15th, Dr. William Lenneker, aged sixty-three years. **Link.**—In Terre Haute, Ind., on Sunday, October 13th, Dr. John E. Link, aged seventy-three years. **Loney.**—In Norwalk, Ohio, on Monday, October 7th, Dr. Daniel W. Loney, aged fifty-two years. **Maben.**—In Kings-ton, N. Y., on Tuesday, October 15th, Dr. Hamblin B. Maben. **Packer.**—In Lowell, Mass., on Thursday, October 10th, Dr. Edmund H. Packer, aged sixty-eight years. **Palmer.**—In Pittsburgh, Pa., on Tuesday, October 8th, Dr. Gist Palmer, of Wellsburg, W. Va., aged forty-three years. **Ricketson.**—In New Bedford, Mass., on Monday, October 14th, Dr. Arthur Ricketson, aged seventy-seven years. **Sproule.**—In Lexington, Ky., on Thursday, October 10th, Dr. Lafayette Sproule. **Stewart.**—In Hopkinsville, Ky., on Sunday, October 6th, Dr. Charles H. Stewart, aged seventy-two years. **Symonds.**—In Salem, Mass., on Tuesday, October 15th, Dr. Benjamin Ropes Symonds, aged fifty-six years. **Wilson.**—In New London, Iowa, on Wednesday, October 9th, Dr. Frank R. Wilson, aged fifty-eight years. **Wilson.**—In Charlottesville, Va., on Wednesday, October 9th, Dr. Robert Emmett Wilson, aged twenty-four years. **Wilson.**—In New Castle, Pa., on Tuesday, October 8th, Dr. William G. Wilson, aged sixty-two years. **Yielding.**—In Meshoppen, Pa., on Friday, October 11th, Dr. Bradley W. Yielding, aged forty-three years.

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Original Communications.

THE (EDIPUS COMPLEX.*

Its Relation to the Psychoneuroses, Psychoses, and Psychosexual Impotence.

By A. A. BRILL, PH. B., M. D.,
New York.

Clinical Assistant, Psychiatry and Neurology, Columbia University;
Visiting Neurologist, Bronx Hospital and Dispensary.

Perhaps one of the most interesting and most valuable discoveries of Freud is the true relationship between parents and children. In our psychoanalytical work with patients we find that parents play the leading part in their infantile psychology. This fact is so universal and important that we may say that unless it is thoroughly elaborated and discussed with the patient no analysis is complete or effective. That our parents should play a leading part in our lives is so obvious that it hardly needs further dilatation. The strange part of it, however, is the fact that these relations are not as amicable or peaceful as seems on first sight. What I mean to say is, that contrary to general belief there is usually not much love lost between parents and children, and that especially little children do not always love their parents in a manner generally accepted; on the contrary, they often show a marked dislike, particularly for one of their parents. This statement may sound very bold and unfounded, but if you stop to think for a moment you will soon feel that it contains a familiar note. Observation teaches that our love for parents is not innate and spontaneous, and that it follows the same laws as that among strangers. Although Freud gave us the true psychological explanation of this conception the principle of it must have been known from time immemorial. History and everyday life demonstrate it. We all know the fifth commandment: Honor thy father and thy mother, that thy days may be long in the land which the Lord thy God giveth thee. Here we have a direct order to honor our parents, and judging by the other commandments and by our modern laws, it must be concluded that to neglect parents was just as natural in biblical times as were these impulses against which commandments beginning with "Thou shalt not" had to be imposed. For it is a fact that there is no necessity of commanding the individual to follow out his impulses; left to himself he would constantly strive to realize them, and civilization,

so called, simply consists of inhibitions imposed upon the individual by religion and society. The more one can inhibit primitive impulses the more cultured one is, and savages and children must be taught inhibition to fit them for society. To cite Freud,¹ "A progressive renouncement of constitutional impulses, the activity of which affords the ego primary pleasure, seems to be one of the basic principles of human culture."

If we enter into the deeper mechanism of our patients, which, we may say in passing, is only an exaggeration of the normal, we usually find that the little boy is more attached to his mother, and the little girl to her father. In other words, the first woman a boy loves is his mother. The little boy finds his father in the way; he is his rival. When the father is not home the little son has no one with whom to share his mother's affection. He is therefore angry and jealous of his father and often wishes him death. This helps to make up the fateful sum of material furnished by the psychic impulses which are formed during the infantile period and which are of great importance for the symptoms appearing in the later neurosis. I could distinctly trace the symptoms of the cases that I have analyzed to such mechanisms. In normal people we find the traces of this early love in the dreams of the death of near relatives, such as the father.²

The sexual feeling for the mother and jealousy of the father is called by Freud the (Edipus complex, because antiquity has furnished us with legendary material to confirm this fact; to put it in his words: "The deep and universal effectiveness of these legends can be explained only by granting a similar universal applicability to the above mentioned assumption in infantile psychology."³

The legend referred to is the drama *Edipus Tyrannus*, by Sophocles. Laius, the King of Thebes, married Jocasta. After years of childless marriage Laius visited the Delphian Apollo and prayed for a child. The answer of the god was as follows: "Your prayer has been heard, and a son will be given you, but you will die at his hand, for Zeus has decided to fulfil the curse of Pelops whose son you once kidnapped." In spite of the warning the son was born, but soon thereafter the child's feet were pierced and tied, and he was delivered to a faithful servant to be exposed in the desert. But the servant gave the child to a

¹Sammlung kleine Schriften zur Neurosenlehre Zweite Folge

²Freud, *The Interpretation of Dreams*, translated by A. A. Brill, New York: The Macmillan Co.

³Freud, *loc. citato*, p. 22.

*Read before the New York Psychoanalytical Society, February 27, 1912.

Corinthian shepherd, who took it to his master. King Polybos, being childless, adopted it and called him Oedipus, meaning swollen feet. When the boy grew up into manhood he became uncertain of his own origin, and, consulting the oracle, received the following answer: "Beware that thou shouldst not murder thy father and marry thy mother." In order to avoid the fulfillment of this oracle, Oedipus at once left Corinth and accidentally wandered toward Thebes. On the way he met King Laius and struck him dead in a sudden quarrel. He then came to the gates of Thebes, where he solved the riddle of the Sphinx who barred his way. As a reward for this he was elected king and presented with the hand of Jocasta. He reigned in peace for many years and begot two sons and two daughters upon his unknown mother, until a plague broke out which caused the Thebans to consult the oracle, when the messengers returned with the advice that the plague would stop as soon as the murderer of Laius was driven from the country. Sophocles then develops the play in a psychoanalytical manner until the true relations are discovered, namely, that Oedipus killed his father and married his mother. The drama ends by Oedipus blinding himself and wandering away into voluntary exile.

In his characteristic penetrating way Freud draws the following analytic conclusions: *Oedipus Tyrannus* is a tragedy of fate; its tragic effect is said to be found in the opposition between the powerful will of the gods and the futile resistance of the human being who is threatened with destruction. The tragedy teaches resignation to the will of God and confession of one's own helplessness. As you know, Max Reinhardt has lately revived this drama, and after a long and successful run in Berlin it is now being produced in London. From what I have read and heard, it moves modern men no less than it moved the contemporary Greeks. This goes to show that the explanation of this fact cannot lie merely in the assumption that the effect of the Greek tragedy is based upon the opposition between fate and human will, but is to be sought in the peculiar nature of the material by which the opposition is shown. There must be something within us which is prepared to recognize the compelling power of fate in Oedipus, while we justly condemn the situations occurring in other tragedies of later date as arbitrary inventions. Witness, e. g., the storm that has lately been produced by Synge's Irish play, *The Playboy of the Western World*, which is a veiled Oedipus play. Freud states that there must be a factor corresponding to this inner voice in the story of Oedipus. "His fate moves us only for the reason that it might have been ours, for the oracle has put the same curse upon us before our birth as upon him. Perhaps we are all destined to direct our first sexual impulses toward our mothers, and our first hatred and violent wishes toward our fathers; our dreams convince us of it. King Oedipus, who killed his father and married his mother, is nothing but the realized wish of our childhood. But more fortunate than he, we have since succeeded, unless we have become psychoneurotics, in withdrawing our sexual impulses from our mothers and in forgetting our jealousy of our fathers. We recoil from the per-

son for whom this primitive wish has been fulfilled with all the force of the repression which these wishes have suffered within us. By his analysis, showing us the guilt of Oedipus, the poet urges us to recognize our own inner self, in which these impulses, even if suppressed, are still present."

That the Oedipus legend originated in an extremely old dream material which consists of the painful disturbance of the relation toward one's own parents by means of the first impulses of sexuality, is unmistakably shown in the very text of Sophocles. Jocasta, comforting Oedipus, mentions to him the dream which is dreamed by so many people, "For it hath already been the lot of many men in dreams to think themselves partners of their mothers' bed. But he passes most easily through life to whom those circumstances are trifles." The dream of having sexual intercourse with one's mother occurred at that time, as it does to-day to many people who tell it with indignation and astonishment. As may be understood, it is the key to the tragedy and the complement to the dream of the death of the father. The story of Oedipus is the reaction of the imagination to these two typical dreams, and just as the dream, when occurring to an adult, is experienced with feelings of resistance, so the legend must contain terror and self chastisement. An uncomprehending secondary elaboration tries to make it serve theological purposes.

From my own experience, I can fully corroborate Freud's assertions. Thus I have on record thirty-eight dreams of sexual relations with one's own mother given to me by twenty-one male patients. These dreams were quite plain and there was very little distortion to them. About half of the dreamers reported these dreams before they ever heard of any Oedipus complex, while the other half told about them after I had explained the Oedipus complex. They all assured me that they were perfectly aware of these dreams, and to my question why they had not told them to me before, they invariably answered that it was too terrible and revolting a thing to tell, and that the only reason why they told me now, was because they were happy to know that they were not alone in having such dreams. I can say the same of nineteen women who dreamed that they had sexual intercourse with their fathers. I analyzed Oedipus dreams in which only the father or mother is masked. Thus one of my female homosexuals told me that the only erotic dreams in which a man played any part was one of having had sexual intercourse with one of our governors, but on associating to the dream she told me that she was accustomed to refer to her father as "the governor." As you know, the President, governor, and mayor in dreams usually mean the father.⁴

Most of the Oedipus dreams, however, usually show a symbolization of the sexual act, while the parents may be quite plain. One of my patients dreamed that he climbed up a high water tower on a revolving staircase. On reaching midway he met his mother, who accompanied him to the top. The climbing became more and more difficult. He had to hold on very tightly to her because he feared they would both fall. They finally reached the top in a very exhausted state, where they lay down to-

⁴Freud, *loc. citato*, p. 246.

gether in bed for a long rest. This patient slept with his mother until he was eighteen years old, and from his own admission, although he entertained no conscious sexual feelings toward her, he wished on at least a few occasions that he could marry her. To those acquainted with dream analysis this dream needs no further elucidation.⁵

A man of thirty-five years reported to me the following dream: "*I dreamt I was in bed with my mother and, as she was talking loud, I told her to be quiet, as I was afraid my father, who was in the next room, would hear us.*" This patient was treated for psychosexual impotence, and this dream came after unsuccessfully attempting heterosexual intercourse. He was his mother's favorite, and owing to the fact that his father was a psychopathic individual, who abused and terrified his family, he hated him and was much attached to his mother. Whenever his father went on a rampage his mother used to lock herself in a room with him, and they often lived through in reality the experience described in the dream. This was also the reason for his sleeping with his mother up to the age of ten years. Disappointed in her husband, she lavished all her affection on her son, who supplied her with the love she craved. The patient stated that for years he was subject to nightmares showing almost the same content as the above given dream.

To understand the full significance of this dream it will be necessary to review a few psychological facts. As already stated, we are all destined to direct our first sexual impulses to our mothers.⁶ The first woman loved is one's mother. It is the mother who impresses on the mind the woman image, which remains as a permanent standard for the feminine ideal. Normally a repression takes place, and the boy gradually projects his love to strangers. Investigation shows that the love life of an individual begins at a very early age, and as this progresses the love for one's mother gradually fades from consciousness. In the unconscious it remains forever and acts as a constant guide in the future selection of the woman.⁷ Every woman is compared to the mother image, and *ceteris paribus*, the closer the resemblance the stronger a woman attracts us. This may shade from the normal to the abnormal. As examples I can cite the following cases: A very cultured man was attracted only by very stout servants; no other type of woman appealed to him. Analysis showed that his first sexual impulses were aroused by a servant girl of that type who took the place of his mother. A refined married woman of twenty-four years, suffered from psychosexual frigidity, but was sexually excited whenever she saw a lame man. This was due to an identification with her mother, who had an illicit love affair with a man when she was three or four years old. Like a great many grownups her mother, a French woman, considered her little girl an unthinking being and took no pains to conceal anything from her, and when her paramour sustained a fracture of his leg and she found it necessary to make frequent calls on him, she took her little daughter with her so as

to avoid gossip. Although what she witnessed apparently made no impression on her at the time, it nevertheless acted as a sexual trauma, and formed an association between sex and lameness.⁸ This was also determined by the fact that at this age this lame man took the place of her own father.

A young married woman who is dominated by a veritable prostitution complex, carried on illicit relations with men while she lived with her husband. Psychoanalysis showed that she was an only daughter and, although her father's pet, she saw very little of him during her early childhood, as his affairs took him away from home. As far as her memory goes she recalls witnessing unholy loves between her mother and "strange men." She herself married a man who not only belongs to the same type as her father, but even follows her father's vocation. She thus identifies herself with her mother in every respect.

I could quote many more cases,⁹ but these will suffice to show the unconscious parental influence. Such influences are found in every person, and although usually quite harmless, they sometimes act perniciously. This is particularly true of only, or favorite children, who are overburdened with love. They are not allowed to follow the different stages of the psychosexual evolution, and their libido remains fixed on their mother.¹⁰ The result of such a process may be psychosexual impotence. By preventing the boy from projecting his love to strangers, there results an unconscious incestuous fixation on the mother, which then acts as an inhibition to sexual relations with other women.¹¹

Let us return to the above mentioned dream. From what we know of dreams we may say that dreams accompanied by fear are of a sexual nature.¹² The fear is the converted libido and takes the place of the distortion usually found in other dreams. In other words, the dream represents a repressed wish to sleep with the mother, and the converted libido is masked behind the fear for the father. His father was furious whenever he found him sleeping with his mother, and our patient often dreamed lest he should be detected by his father. The dream repeats the same state of mind, and thus gives us the key to his neurosis. By sleeping with his mother to so late an age the incestuous feelings were kept alive and fixed on her, but as he grew older he energetically defended himself against them, and finally succeeded in repressing them from consciousness. As a reaction to these unconscious desires he became extremely moral and religious and avoided everything sexual. At the age of twenty-eight years he attempted coitus for the first time and failed, and this failure was repeated at every subsequent attempt. He could not accomplish the sexual act because of the incestuous fixation on his mother. Every woman unconsciously recalled his mother, which, on account of the marked repression, nat-

⁵For the mechanism of such traumas see Freud, *Selected Papers on Hysteria and Other Psychoneuroses*, page 159, foot note; translated by A. A. Brill, *Journal of Nervous and Mental Disease Monographs*.

⁶Most of the cases described by Mantegazza as idiomatists probably belong to this category, *Zeitschrift für Sexualwissenschaft*, p. 223.

⁷Brill, *loc. citato*.

⁸Freud, *loc. citato*. On *Stairway Dreams*, p. 246.

⁹The word sexual is used in the broadest sense. See Freud, *Three Contributions to the Sexual Theory*, translated by A. A. Brill.

¹⁰Brill: *Psychoanalysis, Its Theories and Practical Application*, Chapter X, 1912

¹¹Ferenczi, *Analytische Deutung und Behandlung der psychosexuellen Impotenz beim Manne*, *Psychiatrisch-neurologische Wochenschrift*, xxxv, 1908. See also works of Stekel and Steiner.

¹²Freud, *loc. citato*.

urally made coitus impossible. This was also constellated by his unconscious fear of his father. The patient was cured of his impotence as soon as these mechanisms were laid bare and explained to him.

Conscious incestuous feelings and experiences in adult life are not as rare as one would imagine. This subject has been discussed by Kraft-Ebing, Bloch, Havelock Ellis, and others. My own observations in this regard taught me that sexual feelings and fancies about one's parents, sisters, and brothers are not only extremely common in early life, but that they also exist later. Nor must it be imagined that whenever it is found we deal with defective persons; the individual circumstances must always be considered. Havelock Ellis¹³ explains the abhorrence of incest on the basis of familiarity. He states that "the normal failure of the pairing instinct to manifest itself in the case of brothers and sisters, or of boys and girls brought up together from infancy, is a merely negative phenomenon due to the inevitable absence under those circumstances of the conditions which evoke the pairing impulse" (p. 205). "Passion between brothers and sisters is, indeed, by no means so rare as is sometimes supposed, and it may be very strong, but it is usually aroused by the aid of those conditions which are normally required for the appearance of passion, more especially by the unfamiliarity caused by a long separation" (p. 206). I agree with Havelock Ellis as far as he goes, but it seems to me that unfamiliarity plays only a subordinate part in the promotion of incestuous feelings between sisters and brothers. Unfamiliarity does not necessarily cause attraction between strangers of opposite sex, but long separation, especially when occurring since early life, is sure to produce strong fascination between brothers and sisters. This is due to the repressed Oedipus complex. As was said above, every woman that later comes into the individual's life is unconsciously compared to the mother image. It is quite obvious that the sister fits into this image much better than any other woman. Who resembles the mother more than the daughter? Besides, the daughter has the advantage over the mother of youth and beauty. In this connection I would like to give the following incident related to me by a colleague.

He came to this country from Germany at the age of fourteen years, having left at home a sister one year and a half his junior. Years later he visited some exhibition in the Grand Central Palace in New York city, and was strongly fascinated by a young lady whom he saw there. The attraction was so strong that he lost interest in the exhibits and followed her around until she left the place. Nor did this fascination end here. He told me that for months he acted like a man in love, and for years he measured every woman by the "Grand Central girl." He returned to his native city after having been eighteen years in America, and as soon as he saw his younger sister the thought flashed through his mind, "Here is the 'Grand Central girl.'" There was indeed a remarkable resemblance between his sister and the unknown young woman with whom he fell in love in America. His sister was the picture of his mother.

Moreover, in real life daughters often take the place of their mothers. I know a few cases where men first loved the mothers and then switched over to the daughters. The daily press sometimes reports such cases.¹⁴

It is in the psychoses, however, that one sees the marked influence of the Oedipus complex. Here the complex generally comes to the surface in the form of symptoms, usually hallucinations and delusions, and the analysis can frequently trace those automatisms to early repressed feelings and experiences. The following cases will serve as paradigms.

CASE I. V., twenty-nine years old, suffered from the paranoid form of dementia praecox. He heard voices accusing him of having had sexual relations with his mother. Analysis showed that as a boy he entertained sexual fancies about his mother. He often looked through the key-hole when she took her bath.

CASE II. Mrs. F., a married woman of twenty-eight years, was a paranoid praecox. For over a year she had been laughing and talking to herself, uttering words like "clean, never, respectable, not at all, none." When questioned she stated that she heard voices which accused her of having been "too intimate with her father and brother," and the words she uttered were only answers to her imaginary accusers. They read as follows: "I am clean, I never did such terrible things; I am respectable; it is not at all true that I had sexual relations with my father and brother."

CASE III. With Dr. H. Valentine Wildman I had recently committed a young man to the River Crest Sanatorium. This patient was paranoid and his main delusions, which were fairly well systematized, were directed against his mother. He called her vile names, and accused her of having made sexual advances to him. The following remarks pointing to a retrospective falsification contain the nucleus of his delusions: "I remember when I was a kid she (mother) looked at my eyes, and then paced the floor as if to say, 'you are for me,' and since then she wanted to make me her lover." The history of the case showed the typical mechanism of paranoia, that is, there was fixation in narcissism and mother love (he was his mother's favorite), defense against homosexual wish phantasies, then failure of repression as manifested in some homosexual experiences and delusions of persecution.¹⁵

Now it may be asked whether children show by their behavior any indication of the Oedipus complex, and whether fathers realize consciously that their sons are their rivals. Anamneses taken from normal and abnormal persons answer these questions in the affirmative. Also the works of Freud, Bleuler, Jung, Putnam, Ferenczi, Stekel, Abraham, and Jones,¹⁶ and others show beyond any doubt that this is the case. To quote Bleuler, "After our attention has been called to it we found this Oedipus complex more and more frequently. It is also an important factor in the selection of lovers among normal and abnormal persons."¹⁷ I have collected many, many facts, some I have personally observed and some were given to me by reliable colleagues and friends, showing beyond any doubt that small children often wish to replace the parent of their own sex. A brilliant little boy of three years, hearing that he would sleep with his mother because his

¹³Those who are interested in the problem may read an excellent paper on the subject by Freud, *Die Inzesttheorie der wilden Imago*, Heft 1.

¹⁴For full particulars of these mechanisms see my papers: *The Psychological Mechanism of Paranoia*, NEW YORK MEDICAL JOURNAL, December, 1911; *A Case of Schizophrenia*, *American Journal of Insanity*, lxxv, 1, July, 1909.

¹⁵See especially The Oedipus complex as an Explanation of Hamlet's Mystery, *American Journal of Psychology*, January, 1910.

¹⁷*Dementia Praecox oder Gruppe der Schizophrenen*, p. 344. Leipzig and Wien, Deuticke, 1911.

father was going to stay away for the night, expressed his great pleasure to his mother, and ended: "Let us play we are married. I'll call you Mary and you call me John" (names of his parents); and later when he entered his mother's sleeping room, he said, "Here comes your husband." A little girl of three and a half years, on being punished by her mother, exclaimed in her childish way, "Go away to Susie (her dead sister), I can be papa's mamma" (meaning his wife, as her father calls her mother "Mama"). Another little girl of about four years kissed her father and kept on repeating, "I love you so much, papa; let's go Bronx and never come home to mamma." And on being questioned she admitted that she did not love her mother.

It is not so uncommon for a parent to be jealous of the love shown by the other parent for the child. A glaring example of this kind was reported to me by Doctor Coriat, of Boston. Her husband was a very prominent business man, but somewhat psychopathic. She was very much attached to her only son, and the more she loved him the more he was hated by his father. The latter openly expressed his jealousy and hatred for his son and treated him most cruelly whenever he could do so. This feeling continued for over thirty years until the father died, and was the cause of much unhappiness.

I could cite many more illustrations as further demonstrations of the existence of this strange mechanism, but I feel that no amount of material will convince those who are not interested in the subject. The others will find ample corroborations in the literature,¹⁸ but they will be most convinced by personal study and observation.

55 CENTRAL PARK WEST.

THE ECCHYMOTIC SKIN REACTION OR ACQUIRED PSEUDOHEMAPHILIA; SICARD'S SYNDROME.*

BY WILFRED M. BARTON, M. D.,
Washington, D. C.,

Professor of Therapeutics and Assistant Professor of Medicine,
Medical Department, Georgetown University.

During the past few years a few cases have come under my observation in which comparatively slight digital or other pressure has produced a local ecchymotic cutaneous reaction. Two cases of which I have notes have occurred in women during or after the menopause. In a recent article Sicard and Gutman¹ report two cases of a similar kind, one in a female and one in a male, in both of which there occurred cutaneous ecchymoses as a result of slight digital compression. In their article the authors present important humoral data obtained by an examination of the blood in their cases. In bringing this brief report to your attention I will begin by giving a résumé of the two cases reported by Sicard and Gutman, and follow this with a report of two personal cases, concluding with a few

observations upon the pathology of this interesting, and up to the present time quite neglected subject.

CASE I. (Sicard and Gutman.) Female, forty years old, without children and always healthy. For over ten years she had observed that her arms and legs presented bruised marks (ecchymoses), sometimes of considerable size, even after trivial injury. If she pricked her finger it would bleed freely, but stopped easily enough. Sometimes but not always she would have rather free and prolonged menstruation. She had never had epistaxis, stomatorrhagia, melena, hematuria, or petechia. The hemorrhagic manifestations under the skin always appeared as ecchymoses of varying size, averaging an inch in diameter, especially about the elbow, forearm, knee, and leg. On one occasion she had a voluminous hemarthrosis of the left elbow. At another time, after working rather strenuously, she awoke one morning with a large hematoma on the anterior surface of the right arm. Simultaneously the elbow became swollen, due to a posterior hemarthrosis. The blood was absorbed in a month. On examination it was found that pressure with the finger on the arm or thigh produced ecchymoses appearing the same day. On pricking the finger hemorrhage was not excessive.

Examination of the blood, through a finger prick, showed coagulation in three to four minutes; a normally retractile clot. As to globular fragility, the test made with deplasmatised corpuscles, showed abnormal fragility. There was no auto or isoly sine, that is, her serum did not hemolyze her own or other erythrocytes.

Ehrlich test: The finger with a ligature around the base, placed on ice for five minutes then pricked, gave blood which coagulated normally, but with rose laked serum. Donath-Laudsteiner test: The serum was placed in contact with deplasmatised corpuscles. The mixture was put on ice a half hour then in incubator at 37° C. for an hour. The serum became laked. The Wassermann reaction was negative. Urine was negative. No albumin, sugar, nor blood. The blood count showed: Reds, 3,746,000; hemoglobin Malassez, 10; whites, 16,400; polynuclears, 542; few myelocytes; large mononuclears, 30; small mononuclears, 11.

The treatment consisted in intramuscular injections of sodium nucleinate, dose 0.15. Five injections were given in a month. Following the reaction the cutaneous ecchymotic reaction disappeared.

CASE II. (Sicard and Gutman.) Male, fifty years old, negative pathological history. For about fifteen years he had noticed that following slight pricking or cutting of the skin or extraction of teeth he would have abundant and sometimes alarming bleeding. Once he had a very rebellious epistaxis. Never had petechia. On his extremities he noticed that ecchymoses followed the slightest trauma and sometimes appeared apparently spontaneously. An examination of his blood made two years after the commencement of the condition showed retarded coagulation. He was given injections of gelatin and sodium nucleinate. The clinical and experimental manifestations disappeared in a month and the patient vanished from observation, until recently when he was again examined. He had had in the interval but a few slight manifestations of a hemorrhagic diathesis. Examination of blood at the time showed normal coagulation, normal erythrocytic fragility, negative Donath and Wassermann; but, notwithstanding the absence of these signs of normal coagulability of the blood, the cutaneous ecchymotic reaction to digital pressure was found to exist as unequivocally as before.

PERSONAL OBSERVATIONS.

CASE III. Mrs. G., white, widow, aged sixty years at the time she came under my observation, in 1897. Family history, negative. Previous history: Had always enjoyed good health and had never been confined to bed, except in childbirth, for forty years. Had had two healthy children. Had ceased to menstruate about fifteen years previous at the age of forty-five years. Present illness consisted of varicose veins in the right leg. These varicosities had existed in a mild degree since the time of her last confinement many years previously, but had in no way discommoded her until a few years before she consulted me, when as a result of standing and more strenuous occupations they became much more dilated and painful. At

¹⁸See especially the recent work of Otto Rank, *Das Inzest-Motiv in Dichtung und Sage*, Vienna, 1912.

*Read before Clinical Society of the District of Columbia, May 13, 1912.

¹Bulletin et mémoires de la Société de médecine des hôpitaux de Paris, 3 S., 5, p. 171, 1912.

the time of my examination I found the veins on the inner surface of the right leg from above the malleolus up to the knee, dilated, tortuous, and tender. The internal saphenous vein on the thigh was also slightly enlarged. I proposed an operation for the relief of the condition. Examination of the heart, lungs, and kidneys was negative. While conducting a physical examination I noticed a bruised spot or ecchymosis about the size of a half dollar on the anterointernal surface of the right thigh, about three inches above the internal condyle. On questioning her as to its origin she informed me that it had appeared several days before. She had noticed it on arising in the morning. She did not remember to have suffered any trauma, not even the slightest, in the neighborhood of the spot. It had appeared, as it were, spontaneously and she had attributed it to some slight pressure exerted by the other limb while asleep in bed. She then informed me that the appearance of such spots or bruises was of extreme frequency and had been so for over ten years, that is since she had ceased to menstruate. This extreme frequency, however, had long since ceased to trouble her because of the uniform triviality of accompanying phenomena and their ephemeral character. Furthermore, they only rarely appeared on the visible portions of her person and consequently her woman's vanity was in no way injured by them. I became suspicious that perhaps she might be a hemophilic and that consequently a surgical operation upon the varicose veins might be contraindicated, but further inquiry developed the fact that she had never suffered from epistaxis, stomatorrhagia, hematuria, melena, petechia, hemoptysis, nor hematemesis, and that no excessive hemorrhage had ever followed upon tooth extractions of which she had had several, nor upon pricking or cutting the skin, accidents which she had experienced upon numerous occasions, nor had she ever in the past suffered from profuse or prolonged menstruation. No technical hematological examinations were made, but in order to determine for myself whether there really existed an increased susceptibility to ecchymosis, I made upon several occasions firm and somewhat painful digital compression of the skin of the thigh, calf, arm, and forearm, and in every case ecchymoses were visible the next day, varying in size from a ten cent piece to an area five or six times that size.

I performed an operation for the relief of the varicose veins which was entirely successful and not attended by simultaneous or secondary hemorrhage. The patient was under my observation for over ten years or until a few years ago, when she moved to Baltimore.

CASE IV. Mrs. F., aged fifty years in 1909; housewife; married; two healthy children. Family history excellent. Previous history: Had always enjoyed perfect health up to two years before when her menstruation became profuse. Climacteric symptoms developed such as hot flushes, dyspnea, nervousness, and insomnia. Began to take laudanum and various hypnotics for the insomnia. About the time the symptoms had commenced, that is two years previously (1907), she noticed that the slightest pressure upon her skin, especially of the extremities, left a "black and blue spot." She had never had any excessive hemorrhage in her life up to the time of the commencement of the menopause with its attendant menorrhagia. She had frequently received mild pricks or cuts upon the skin, and had had tooth extractions, but these had never been attended by excessive hemorrhages. She never had had a severe nose bleed. The metrorrhagia became gradually worse, and she consulted me in the spring of 1900.

The physical examination showed that the patient was a well formed woman with delicate skin and iron gray hair. Heart, lungs, and kidneys were normal. Complexion was somewhat pasty and bowels were obstinately constipated. She was of highly nervous temperament. On bimanual palpation the uterus was found enlarged and retroverted, but no tumor was palpable. Annexa were normal. At the time of the examination the patient was experiencing an alarming uterine hemorrhage, which had kept up all night. A large amount of blood had been lost, which clotted freely. In order to stop the hemorrhage, after ergot had failed, the uterus was packed. The packing was removed the next day and the bleeding recommenced. Packing was again inserted, the gauze being soaked with

adrenalin solution (one to 1,000), which controlled the hemorrhage. It was on this occasion that she informed me that bruises appeared upon her skin following trivial injury, and she showed me an ecchymosis upon the external surface of the left arm, about the size of a quarter, which had appeared four or five days previously and was fading. Her next period was equally severe and on the second day a hemarthrosis developed of the right elbow. I tested the cutaneous reaction to pressure at this time, and found that comparatively slight pressure upon the skin of the extremities infallibly produced in some hours ecchymoses of varying forms and dimensions. The observation of these ecchymoses, which the patient believed to have arisen many times spontaneously, had become a matter of such frequency, and this evolution had been attended by such trivial manifestations, that the patient had ceased to pay much attention to them. But it appeared to me that perhaps the pathological conditions which underlay the metrorrhagia might also be the same as those which produced the ecchymoses. There was, however, unfortunately no effort made at this time to conduct any complete hematological examination. Later, however, this has been done. I have been able to examine the patient's blood in nearly the same way as was done by Sicard and Gutman in their cases. However, at the time of the blood examination which was recently made the patient had recovered from the metrorrhagia and had not menstruated for a year. The cutaneous reaction was, however, still present, though to an undoubtedly less degree.

Pricking the finger showed coagulation in six to seven minutes. Clot retracted normally. Globular fragility: The classical test of Widal and Chauffard with deplasmatised corpuscles was not done. With total blood, however, added to salt solutions of different strength, there did not appear any departure from the norm of globular fragility compared with controls of known normal blood. Ehrlich's test: The finger, slightly ligatured at the base, was placed on a piece of ice for five minutes, then pricked. The blood coagulated normally. Donath-Laudsteiner and Wassermann tests were not performed. Wassermann reaction was regarded as entirely unnecessary. Urine was negative as to albumin, sugar, and blood. This had been the case in previous examinations.

The blood count was: Reds, 4,000,000; hemoglobin (Tallquist), 70; whites, 6,000; polynuclears, 65; mononuclears, 35. There were no nucleated reds.

The foregoing two personal observations I have reported are not the only instances in which I have noted the ecchymotic skin reaction, but I have kept no records of others. Personal confrères have in several instances informed me of seeing similar cases both in males and females. The question to be decided is, whether or not these cases are really manifestations of hemophilia. Sicard and Gutman, in their article, have reported their cases as being really acquired hemophilic states. This seems to me to be somewhat doubtful, and my own personal observations do not appear to me to have been of cases of true hemophilia at all. For this reason I have chosen to entitle my contribution to the subject "acquired pseudohemophilia," and have taken the liberty of naming it the Sicard syndrome.

The question of the pathology of hemophilia is much discussed and is quite obscure. Hemophilia has been generally regarded as an hereditary disease, occurring in certain families and manifesting itself usually in early life; but later investigations, particularly by French authors, have justified the acceptance of a true acquired or sporadic form of the disease, coming on in adult life and usually less grave in type than the hereditary form. Hemophilia is usually characterized by clinical and biological symptoms. Clinically the hemophilic shows a tendency to incoercible hemorrhage and a tendency to the production of ecchymoses of the skin after slight injury. Biologically, the blood in

hemophilics shows retarded coagulability, sedimentation, lessened contractibility of the clot, and plasmatic coagulation. But cases of hemophilia are found in which the blood clots normally.

Now, are cases similar to those reported by Sicard and Gutman, and these by myself, to be regarded as true acquired hemophilia? If any defect of coagulability of the blood is to be taken as a criterion, the answer is, No. In none of the four cases here reported was there any delay in coagulation time. In one case (personal observation, Case III) no examination was made to determine this point, but the patient had never in her life had a hemorrhage of any severity. It would appear more reasonable to suppose that cases in which the ecchymotic skin reaction is observed, spontaneously or upon slight pressure, are not cases of true hemophilia. It would be interesting to examine the condition of the vascular walls in these cases. In some cases of true hemophilia changes have been observed in the smaller vessels; but in others no pathological alterations have been found.

Perhaps the condition of acute ecchymotic skin reaction may be found associated with, and dependent upon an abnormal fragility of the capillary wall and this upon a generalized capillosclerosis..

1730 CONNECTICUT AVENUE.

THE SCIENTIFIC TREATMENT OF THE INSANE—A NATIONAL PROBLEM.*

By THOMAS W. SALMON, M. D.,

New York,

Passed Assistant Surgeon, United States Public Health Service;
In Charge of Special Studies for the National Committee for Mental Hygiene.

It seems strange at the present time, when institutional care of the insane is so very largely in the hands of public relief officials, that the first steps in the care of the insane in this country were made possible by private philanthropy. For a number of years the public authorities gladly availed themselves of the accommodations which they could secure in such institutions, and it was not until the end of the eighteenth century that it was proposed to care for the insane poor in institutions erected wholly at public expense.

It is also interesting to know that the conditions under which care was first provided for the insane in the United States would, in one respect, meet some of the highest ideals of the present time. The insane departments of the Pennsylvania Hospital and of the New York Hospital (now Bloomingdale), were in very close relation to the departments of those hospitals in which other classes of the sick were treated. Thus, in those early days, there was realization of the most important principle that the insane are sick people and their care is a matter for doctors and nurses. How different might have been the story of the insane in this country had this conception continued to govern the care of the insane poor! The long, dark period of neglect which has continued into our own time might never have begun.

There are some who assert that our grotesque laws relating to the commitment of the insane, which are very largely responsible for the fact that nearly a third of all the insane admitted to public institutions have had their mental disease for more than eleven months before securing treatment, are the outgrowth of early struggles for human liberty, and are a precious legacy from the past. If this were true it might be an excuse, if not a reason, for their continuance into an age of enlightenment, but it happens that it is not even true. When institution care for the insane was first provided in this country, commitment had hardly more formality than the admission of patients ill with other diseases. Very few of the defenders of our present laws relating to commitment are aware of this, or know that in many States these laws have been actually worded by insane persons who, upon their release or escape from institutions, so worked upon the feelings of legislators that they obtained statutes such as that providing a jury trial for all persons suspected of insanity before their commitment to an institution.

Unfortunately for the welfare of the insane, in the growth of the colonies, continued provisions for their care were not based upon the most excellent conception of the earliest period, and soon there began a period of neglect. Only a small portion of the insane secured treatment. Jails, prisons, and almshouses sheltered most of them, while many wandered the streets, often a source of danger to the others and more often the victims of abuse on the part of ignorant or thoughtless members of their communities.

This period in the care of the insane in this country continued until the opening of the Utica State Hospital, in 1843. The new era was that of curative treatment. It was urged at that time that treatment in special institutions would result in the cure of an enormous number of cases, and that a small initial expense would save the subsequent cost of caring for thousands of cases of acute and chronic mental disease. In a memorial presented to the Governor of New York at about that time, it was stated that treatment in such institutions would undoubtedly result in the recovery of *nine in ten of the patients admitted*. Under the spur of such unwarranted hopes, provision was made in State hospitals for many insane in several of the States. Mistaken though the idea was that mental disease under any conditions could have so large a percentage of cures, it was fortunate that the movement took place, for the lot of the insane was immensely improved. The unfortunate feature was that the distinction between "curable" and "incurable" insane was made. This distinction became deeply established in our laws and popular conceptions, and in many States it still influences the treatment afforded the mentally diseased. As it was soon apparent that most recoveries occurred in cases which had been of short duration, institution care was restricted to acute cases, and the chronically insane remained in almshouses in conditions of almost inconceivable degradation and misery.

The next important era in the care of the insane was that which dawned when the Willard State Hospital was opened for the chronic insane, in

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1869. A great institution in a beautiful farming country, where occupation could be provided for those able to work and a healthful and comfortable home for all, was the ideal which led to the erection of the Willard State Hospital. It was projected upon purely humanitarian grounds, and for the first time since the earliest days of institution care in this country, the governing motive was the good which the insane might derive, and not the good of the community. Those still living who saw the first arrivals at Willard from the almshouses where they had been kept, say that they will never forget their marks of misery and neglect. It is forty-three years since the Willard State Hospital was opened, but visitors still come from other States and other countries to see the institution established for such a beneficent purpose.

The Willard State Hospital made it inevitable that complete State care must soon be provided in New York, for it was not possible for the conditions which prevailed in the almshouses to survive comparison with the conditions under which the same types of patients were cared for in that institution. The extension of State care was a slow and halting progress, but finally, in 1890, the complete redemption of the insane from the miseries of the almshouses was effected.

The period of twenty-one years from the opening of the Willard State Hospital to the departure of the last insane patient from the almshouses of New York, was a time of great advances in medicine and in the care of the sick generally. The discoveries of Pasteur and Koch changed our ideas as to the nature of transmissible disease; the researches of Lister made possible surgical intervention in directions which had been closed to human hands before that time; the prevention of disease became a promising field and to the most far seeing the extermination of certain diseases came within the range of possibility. So the close of this period, in which the States were taking up the burden which they had shirked so long, saw very different standards for the care of the sick than had existed at its commencement. In 1869, few would have predicted that a State would assume even the custodial care of all its insane, without reference to their curability, but, in 1890, it was realized that custodial care was not sufficient, and that asylums must be transformed into hospitals. In the latter years of this period the treatment of the insane underwent many changes. The rise of the new profession of nursing, which in the outer world was robbing illness of much of its suffering and determining the outcome in many of the recoverable diseases, was not without its influence upon the care of the insane. The keeper gave place to the trained attendant, and the trained attendant began to give place to the nurse. There was a very remarkable growth of interest in medicinal treatment for the insane, reflecting the striking advances in general medicine which were filling physicians with new hopes, some of them unfortunately not to be fulfilled. The matter of occupation for the insane began to arouse attention. Previously occupation had been encouraged largely in the hopes of making institutions self sustaining, but now its remedial uses began to be recognized.

During this period a feeling began to spread that

restraint might be dispensed with in a large number of cases in which it had been thought to be necessary. As early as 1885, experienced physicians in institutions for the insane were asserting that mechanical restraint could soon be abolished, but they based this belief partly upon their confidence in very effective hypnotic drugs which had recently come into use.

One significant feature of this period was the large increase in the number of insane persons under treatment. The federal census of 1890 showed an increase of eighty per cent. in ten years. Such statistics were taken very generally to mean a large increase in the prevalence of insanity. During this period commitment became much more complicated, and many laws were passed which had for their sole basis the fear that sane persons might be incarcerated. These laws resulted in great detriment to the insane and effectually prevented early treatment.

Before considering present problems and the status of the care of the insane in this country at the present time, it seems desirable to summarize some of the advances of the last twenty years. Perhaps the most striking feature of that period has been the growth of the hospital idea. It is likely that the welfare of the insane has been promoted more by this trend than by any other single factor. The higher standards required by the extension of the hospital idea have necessitated better classification of cases. Separate provision has been made for the aged and infirm, for the disturbed, for the tuberculous, and for the quiet, demented class, with much advantage to all concerned. The very special needs of those recently admitted and the necessity of studying these new and recent cases thoroughly and affording them the best treatment, have led to the provision of reception wards, and in many cases separate reception hospitals in institutions for the insane. The abolition of restraint has gone on very rapidly, and the use of hydrotherapy, which is vastly more effective, has replaced the dangerous use of sedatives and hypnotics. It is not possible, in the short time at my disposal, to touch upon those advances in the study of psychiatry in this period which have so profoundly influenced the care of the insane, but it must be stated that more careful study of mental diseases generally, and of cases individually, has disclosed the existence of a number of preventable causes. This has opened the way for the extension into the field of psychiatry of the new science of preventive medicine.

Improvement in the standards of care in institutions has been followed, slowly perhaps, but none the less certainly, by much greater confidence in institutions for the insane on the part of the public. The sphere of influence of the hospitals has immensely widened, and the establishment of new relations with the communities in which the patients have lived before becoming insane has rendered it possible to consider the welfare of the insane before their commitment. Formerly the insane person was officially the subject of interest on the part of the State only *after* the proper legal authorities had passed upon his mental conditions. Now it is recognized that he is in the most urgent need of care, in the early, trying days of his disease before his commitment has been arranged or in some cases

even considered. The outgrowth of this extension of interest in the care of the insane has been provision for voluntary commitment and for emergency commitment, in which most of the legal steps are taken after the patient has been received in a suitable hospital. Inquiries into the kind of care received by patients while their commitment is pending disclosed the prevalence of neglect and abuse and, in New York, responsibility for the care of the insane in this period has been transferred from the policeman to the health officer.

Concern in the welfare of patients has extended also to the period following their discharge from the hospitals. It is realized that, whether full recovery takes place, or another breakdown occurs, often depends very largely upon the surroundings of the patient in the home, the kind of work taken up, and the cooperation of other members of the family. This is the problem of "after care," and it is a fruitful field for the social service worker.

Another of the advances in the care of the insane has been the provision in six States of separate hospitals for the criminal insane. It is, for many reasons, undesirable that convicts who become insane, and persons who commit grave crimes should be cared for in the same hospitals with other classes of the insane. Open wards, the parole system, and the maximum of liberty, so desirable in most hospitals, cannot be employed so freely with the criminal insane.

One of the most important tendencies in recent years has been that of establishing psychopathic wards or pavilions in connection with general hospitals. In such wards delirious cases and acute curable cases of other types can be cared for, and in many cases they end in recovery without the necessity of commitment to a hospital for the insane. Such wards are the most powerful factor in securing early commitment, and, while they should be under official supervision, it seems very desirable that their character should resemble, as nearly as possible, that of the general hospitals to which they are attached. Above all, access to such wards should be easy.

A development of recent years has been the institution of careful statistical studies into special phases of mental diseases; their causes, the prevalence of various types, their manifold relations to social and economic factors, etc. In this connection it may be said that the true significance of the apparent increase in the prevalence of insanity has been better understood lately than in former years. The influence of better standards of care in increasing public confidence in hospitals for the insane, the erection of new hospitals, making access easier for senile and very acute cases, and the effect of better commitment methods—all tend to a larger proportion of all insane cases receiving institution treatment. Recently the enormous influence of immigration in producing high ratios of insanity in this country, has begun to be appreciated.

Another important advance in recent years has been the increased use of occupation and diversion in the treatment of the insane. These measures have been employed primarily as therapeutic agents, and the resulting advantages have been very great. Paid leaders of occupation classes are supplanting volunteers with greatly increased efficiency.

Dispensaries for mental cases have been established in a few cities and they have proved of much service. "Borderland" cases, early cases, relatives seeking advice, recovered patients, fearing a return of their disease, patients on parole, and many others come to such dispensaries who would not go to an hospital for the insane for advice.

It can be safely predicted that progress during the next few years will consist very largely in developing the existing tendencies which have been outlined. The hospital for tuberculosis has become the centre for preventive work in the community, and it can be predicted that the hospital for the insane will become the centre from which popularization of knowledge regarding the diseases of the mind and mental hygiene will flow. Such important new social duties of the hospital as after care, preventive work, the conduction of dispensaries, and cooperation with local authorities in securing better care pending commitment, bring it into a new relation with the public. It is difficult to see how anything but benefit can result. The insane have suffered in all the ages from friendlessness. Their disease in some way has alienated them from their friends and their families, even in temporary attacks, and the hospitals have shared this isolation. One of the best of present tendencies is to bring back the relations with the communities which must have existed in Colonial days, when the insane were cared for in departments of general hospitals.

I have tried to sketch, in a hasty and necessarily very incomplete way, the advances which have been made in this country in the care of the insane. The impression given is that there has been a general and uniform advance to a standard which now justifies self gratulation. Some future trends have been outlined, and it would seem a fair assumption that the chief work of those interested in the welfare of the insane is now only to aid in the accomplishment of these very well defined purposes, and thus raise present standards to higher levels. Such an impression is, however, a very erroneous one. The care of the insane in a few enlightened States is a matter of just pride, but there is not a single condition which existed in the early period of neglect and abuse which does not exist to-day in some American community. It is a fact that every stage in the long and painful history of the care of the insane, from 1537, when the first institution for the insane in England was provided, to the present time, could be actually witnessed in some American community this afternoon. Care in county almshouses, which was abolished forever in New York in 1890, exists in some form in fourteen States to-day. Conditions of wretchedness and degradation, quite as bad as those which awakened the public conscience and led to the establishment of the Willard State Hospital, are tolerated in States at the present time in which no movement for betterment is under way. In a number of States there is provided a complete system of State care for all classes of the insane, with reference, not to their curability, but to their needs, but in some of our greatest States it is expressly provided by law that State hospitals shall not be used for the care of "cases of chronic unsoundness of mind."

In some States, when mental disease suddenly

complicates the course of an acute, infectious disease, or attacks the mother who has recently borne a child, an ambulance can be summoned and the patient carried swiftly to a suitable hospital where treatment can be begun which will restore her to health—all her “rights” (including the right to be humanely cared for) being entirely safeguarded by the provisions of the emergency commitment. In another State, separated from the first by only an imaginary line, a similar patient would have to have the charge of insanity preferred against her by her husband, be haled into court (personal appearance not being waived on account of her critical condition), and there tried and convicted by a jury of her peers before she could receive institution care. In one State it is a crime to keep insane persons in a jail or prison. In another it has not even been proposed to take them out.

Suppose similar conditions prevailed in the legal status of other sick persons. Suppose the treatment of diphtheria were determined by State lines: it being legal to use antitoxine in one, while in another this remedy was prohibited by law. Suppose that in one State tuberculosis were treated by life in the open air, rest, and good food, while the “policy” of another State made such treatment impossible. Suppose that typhoid fever was a disease in one State and a felony in another. Suppose that surgical operations were performed in one State with anesthesia and aseptic precautions, while in another operations were performed in accordance with the usages of 1712. These suppositions are, obviously, ridiculous, but they are scarcely more absurd than actual differences in the care of the insane.

It is the task of this generation to see that advances in the care of the insane shall be uniform. It is a sad reflection upon our National unity that in one State the insane are cared for in conformity to standards of 1820, in another those of 1850, and in a third those of 1912. Standards which are established in one State must be reached in others. Mistakes must not be made in one State because of entire unfamiliarity with what has been attempted and has failed in another.

Fortunately we have some agencies which can be employed for these purposes. In reviewing the advances which have been made in the care of the insane, it was shown that the beginning of several new eras was marked by events in New York. It can be said that at least as much has been done in that State for advancement in the care of the insane as in any other, and it is worth while to seek for the causes. One has been that the insane have been fortunate in their friends in that State. To Dorothy Dix, Miss Louisa Lee Schuyler, and Doctor Willard the insane poor of that State have owed much. But unorganized efforts could not have done what these devoted friends of the insane accomplished with the aid of the State Medical Society and the State Charities' Aid Association. It is such societies as these that will continue in all the States the work which has progressed so far in a few.

The Connecticut Society for Mental Hygiene, the first of the kind in this country, was organized four years ago. This society maintains a department for social service work in mental hygiene. Already the Connecticut society has accomplished a great

deal. Much of its work, particularly after care, is done in cooperation with hospital authorities, but it is interesting to know that the means of contact with eighty per cent. of the cases aided last year were independent of hospitals.

The Illinois Society for Mental Hygiene was organized in July, 1910. This society has eased the lot of many insane by shielding them from the harsh methods of commitment which have existed in Illinois, especially in Chicago.

In New York the State Charities' Aid Association which has done so much for the welfare of the insane poor of New York, and has taken the lead in securing epoch making reforms in their care, has a Committee on Mental Hygiene which is doing work similar to that done in Illinois and Chicago, and is conducting an active educational campaign in the work of prevention.

But the care of the insane is a problem which passes far beyond the boundaries of any State, and there is a rich field of work for the National Committee for Mental Hygiene. The organization of this committee was the idea of Mr. Clifford W. Beers, whose book, *A Mind that Found Itself*, created a new popular interest in the welfare of the insane. The organization suggested by Mr. Beers was perfected by the cooperation of many physicians, philanthropists, social workers, and others who recognized the need of effective work upon a National basis in behalf of these unfortunates. A plan of work for the National Committee for Mental Hygiene has been most carefully prepared, and a recent gift of \$50,000 has made it possible to put this plan into execution.

The first work of the National Committee for Mental Hygiene is to be “the collection of accurate information regarding the present status of the care of the insane in the United States, the laws relating to their commitment and discharge, the extent and character of institutional care, the conditions under which those outside of special institutions are cared for, the various means of State control or supervision, the extent of the various systems of care such as “State care,” “county care,” etc., the factors which tend to promote or to obstruct early treatment, and the provisions existing for the care of insane persons prior to their commitment.”

The inadequate means of caring for the insane to-day in many localities, and the needless hardships which some present methods of commitment entail, make an insistent appeal to one's sympathies, and it is difficult to resist embarking immediately upon the work of amelioration now that an organization and funds are available. It seems absolutely necessary, however, that such novel and important work should not be undertaken without preparation. We must realize that we are but partially informed. There has been no National survey of the situation, and careful studies made in different States have been very few in number and have usually had for their object some very specific purpose.

Many useful movements for the betterment of the sick have failed, because active work has been commenced with an insufficient equipment of facts. It has been resolved that this is not to be the case with the work of the National Committee for Mental Hygiene, and so a period of study and preparation is to come first.

Considerable progress has already been made. A careful plan for the systematic study of this country's institutions has been prepared, an estimate of the cost of such a study has been made, and the actual work of collecting information has been begun. After a preparatory study of reports of institutions and State boards, and of general statistics, it is planned to visit a large number of institutions, also to observe the actual operation of all the steps in the transfer of an insane person from his home to the hospital in a number of different kinds of communities.

It is realized that the insanity laws of the various States constitute the groundwork for the care of the insane and the commitment of insane persons. A compilation of the laws of all the States has been prepared by Mr. John Koren, who has conducted for a number of years the studies of the insane and defective classes made by the United States Census Bureau. This compilation, which has involved a vast amount of work, and which could not have been carried to its completion without expert knowledge in this particular field, has just been published by our organization.

It is believed that in less than a year this carefully planned study of the situation will place the National Committee for Mental Hygiene in possession of much accurate information. It is planned that much of this work will be continuous and permanent, for one of the functions of the National Committee for Mental Hygiene will be to supply for the use of workers in local fields, absolutely reliable information upon many of the various phases of the care of the insane in the United States. It is not, however, primarily for such a purpose that this general view of the situation is being obtained. The chief aim is to secure the equipment needed for a vigorous, sustained, and successful effort to improve the lot of the insane in this country.

It is planned to carry on remedial work through State societies or committees for mental hygiene, similar to those in Connecticut, Illinois, and New York. Similar societies will soon be organized in three or four other States. Each such society will constitute a centre for useful activity, and it is believed that through such agencies the National Committee for Mental Hygiene can best perform its mission.

50 UNION SQUARE.

THE RÔLE OF DISINFECTION, AND THE INFLUENCE OF INFECTED ROOMS AND FOMITES IN THE TRANS- MISSION OF INFECTIOUS DISEASES.*

By ALVAH H. DOTY, M. D.,
New York.

In order that this subject may be scientifically and properly considered, it is necessary that we should be familiar with the means by which infectious diseases are transmitted, for without this

knowledge disinfection and other methods of protection cannot be intelligently carried out.

No theory has been more generally accepted, both by the medical profession and the public at large, than that infectious diseases are commonly transmitted by clothing, baggage, money, rags, and innumerable other articles which are supposed to convey pathogenic organisms in their active state from one person to another. These alleged agents of infection are known as fomites. Even a superficial investigation reveals the fact that the origin of this theory antedates the period of bacteriological or other scientific research, for even as early as the fourteenth century we find that clothing and cargoes of vessels were frequently exposed to the air and sun for an indefinite period for so called purification, and vessels departing from presumably infected ports were sunk by official order to prevent infection through the medium of their contents. These extreme and unjustifiable methods have not by any means been confined to the past, for in recent years, and even at the present time, sanitary regulations are enforced, particularly in regard to disinfection, which are worthless and unnecessary. It was not so very long ago that iron rails were disinfected in the south to prevent the transmission of yellow fever. Since the discoveries of Pasteur and Koch, which gave to the world indisputable evidence of the germ origin of infectious diseases, and particularly during the past fifteen or twenty years, practical sanitarians have been slowly but surely accumulating conclusive evidence of the fallacy of the fomites theory, and although exceedingly valuable pioneer work has been done in this direction, the results have been reluctantly accepted, chiefly on account of the popularity of this belief, which was born in ignorance and has had little to support it beyond the fact that it offers a ready and plausible explanation for the transmission of infectious diseases in instances where the true medium of infection is unknown. Than this no theory ever entertained has been so pernicious, or has militated so seriously against the successful treatment of outbreaks of infectious diseases, for it has discouraged the employment of active, energetic, and exhaustive measures to detect the true cause of infection. Those in charge of the public health, while they have been conscious of its shortcomings, have been disinclined to abandon it, for it has dominated all health regulations, the object of which is to prevent infectious diseases. However, in recent years, events have occurred which fortunately have abruptly and positively demonstrated the unsoundness of this theory, and have extended valuable aid in bringing about a more active and a more serious consideration of this important subject, for we have learned that the ideas we formerly entertained regarding the means by which the various infectious diseases are transmitted, are wrong, and it seems to me there can be no better time than the present to condemn the fomites theory and accept the results regarding the transmission of infectious diseases which have been obtained by careful and painstaking scientific investigation.

Not long ago malaria was attributed to the presence of miasmata or poisonous vapors emanating from swamps; now we know that this disease is caused only by the mosquito. We also know that

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yellow fever, formerly supposed to be commonly transmitted by fomites, is also contracted only through the medium of this insect. The medical history of the south is rich in statistics which presume to offer conclusive proof that the clothing of those who have been exposed to yellow fever was responsible at various times for outbreaks of this disease.

Satisfactory evidence has been given us that plague, which was believed to be caused by almost anything in the way of fomites, is conveyed from one person to another by the rat through the medium of the fleas which infest it. Some years ago I visited Russia during an outbreak of this disease, and found many theories regarding the media of infection. Instances were cited where it was transmitted by caravans going from one section of the east to another, through the medium of rugs, clothing, etc. In the light of our present knowledge, these theories are unworthy of consideration.

Many have maintained in the face of the warning which has been given in regard to this belief that typhus fever must surely be caused by fomites and refer to the rapidity of its extension and other details connected with its transmission. It would be difficult to find a textbook which does not in positive terms state that typhus fever is transmitted by clothing, baggage, and other articles, yet careful investigation, particularly that which has recently been carried on in Mexico under the direction of Doctor Goldberger and Doctor Anderson, seems to furnish satisfactory proof that typhus fever is not transmitted by fomites, but by the body louse.¹ I originally accepted the general belief regarding the medium of infection in this disease, but my experience during two epidemics has made it quite clear to me that fomites, to say the least, do not constitute the ordinary means of infection. During the outbreak of typhus fever in New York city in 1892-3, of the 700 or more cases which occurred I remember but two which appeared among persons in the better walks of life, almost all being among the lodging or tenement house population. These people ride in public conveyances with those of other classes, and if clothing constituted a medium of infection, there would be no such record as I refer to. On the other hand those affected are just the ones we should expect to be the hosts of these insects.

Of the specific organisms involved in smallpox, chickenpox, measles, and scarlet fever we know practically nothing, except probably the information given us by Councilman regarding his investigation of smallpox. There is no doubt that the vesicle or pustule of smallpox contains infectious matter; of this we have definite proof. It is asserted by some that infection is also present in the vesicle of chickenpox, although we have no evidence of it. In measles and scarlet fever the skin eruption is of a different character, and in neither disease passes beyond the papular stage, and there is nothing to justify the belief that it contains infection. The desquamation which follows the eruption of these diseases has been regarded as an important medium of infection; this also is without satisfactory evidence. Desquamation in itself has no special significance other than to indicate some circulatory dis-

turbance of the skin or some other interference with its function. Filth causes it. It occurs in sunburn and sometimes in typhus fever and other infectious and noninfectious diseases.

I believe that desquamation is a negligible factor in the transmission of measles and scarlet fever and that these diseases are conveyed from one person to another by the infected discharges of the mucous membrane involved. We have so concentrated our minds on the presumed potency of desquamation as a medium of infection that it has obscured the real danger of the infected discharges which are always present in these diseases. I am aware that instances are cited where it would appear that desquamation is the only logical means of infection in secondary cases. Before this can be accepted as scientific or practical evidence, the presence of infected discharges must be excluded. I do not believe this can be done, nor do I believe this is usually considered. I know of many who regard the discharges from the affected membrane in scarlet fever and measles as of secondary importance to desquamation in the transmission of these diseases. Proof is presented that measles and scarlet fever are both transmitted before and after desquamation, besides it is far more in accord with modern scientific research to believe that the seat of infection is in the mucous membrane involved rather than desquamating scales.

We probably do not fully consider to what extent the fomites and desquamation theories depend upon statements made by the laity. There is hardly a family, particularly where there are children, that cannot cite instances to prove, to its own satisfaction at least, the transmission of these diseases through the means just referred to, and it will often present evidence that it has occurred through the medium of clothing which has been laid away for months or even years. Equally positive statements are made regarding the transmission of disease by desquamation. I do not mean that all evidence of this character is presented by laymen. I have investigated much of this evidence and have yet to see the first case where satisfactory proof of these statements was available, or a condition which could not be explained without the aid of the fomites or desquamation theory; still, under these uncertain conditions we have gone ahead in the investigation of disinfectants and disinfection; we have indicated in detail how the apartments of the sick must be treated and what agents should be employed; it does not seem proper that we should do this until every means is exhausted to ascertain the true media of infection. We construct a foundation before we build the house, and for the same reason we should so far as possible know the manner in which infectious diseases are transmitted, in order that we may have a proper knowledge of the methods by which we can best prevent them.

It is only within recent years that we have appreciated the importance and danger of mild, ambulant, or irregular cases of infectious diseases and the frequency with which they occur. I regard them as one of the most common and dangerous factors in the transmission of infection, because they often pass unrecognized and are responsible for outbreaks of disease which are attributed usually to fomites. More recently we have learned of "carriers" or per-

¹See editorial article, NEW YORK MEDICAL JOURNAL for September 28, 1912, page 647.

sons who, although they present no evidence of disease themselves, bear specific organisms and may transmit them to others. With a proper knowledge of the means of infection before us, it is not necessary to depend upon either the fomites, desquamation, or the aerial theory to aid us in determining the manner by which infectious diseases are conveyed. I mean by the aerial theory, the belief that infection is carried for long distances through the air. It is frequently asserted that this may occur, even to the extent of half a mile or more. I do not believe in this theory or that there is any substantial or reasonable proof of it.

Until within a few years it has been generally believed that the marked increase in the number of cases of scarlet fever, measles, and diphtheria which occur at the opening of the school season is due largely to the transmission of these diseases by the clothing of the children in whose home infectious diseases exist, or who have been exposed to these conditions outside of their home. This belief has been shattered by the work recently carried on in the schools of the larger cities. Here the careful inspection by medical officers, known as the School Corps, has shown to what a remarkable extent mild, ambulant, irregular, or unrecognized cases exist. Children with a slight sore throat, which has not materially interfered with their play or school duty, or the presence of a nasal or ear discharge, has frequently been found to be due to a mild case of scarlet fever or diphtheria, or "a cold in the head" has proved to be due to measles. Before the existence of this exceedingly valuable inspection these cases were overlooked, and secondary ones were attributed largely to the presence of infected clothing. Conclusive evidence of the great frequency of "carriers" has also been presented, and I am sure we shall be surprised to learn to what extent they occur and the number of diseases which are involved.

Money has long been regarded as a medium of infection; so have rags, although of this there is no satisfactory evidence. It is the superficial consideration of this part of the subject that has misled us. If an employee of a bank contracts infectious disease it is very apt to be attributed to infected money. If a man who works in a paper manufactory contracts smallpox, the rags with which he deals are usually held accountable for it unless there is positive evidence of some other means of infection. It is important to ascertain at this point if those who work among rags, or those who are constantly handling money, contract infectious disease oftener than others. If not, the evidence does not support the fomites theory, for we must remember that those who are in close contact with these articles are subject to the same general exposure as others, and therefore may contract disease in the ordinary way. During a careful investigation of this part of the subject, which has covered a number of years, I have yet to find an instance which reasonably proves that either money or rags constitute a medium of infection. At the treasury department in Washington, where an enormous amount of old and filthy paper money is being constantly handled and rehandled by many employees, no evidence could be secured that money transmits disease. This same result was also obtained in connection

with the employees of banks and other institutions where money is being constantly dealt with. Similar results occurred in connection with the investigation of rags, second hand clothing, etc., for no proof was disclosed to show that diseases are transmitted in this way. My investigation in connection with rags was carried on both in this country and in Egypt, for the reason that Egyptian rags have been used largely in the United States for the manufacture of paper. They usually consist of the cast off garments of the natives, which as a rule are worn next to the skin; when unfit for further service, they are sold to the rag man or exchanged for pottery for domestic purposes, and are taken to Alexandria and there picked over by women and children. Although infectious diseases are constantly found throughout Egypt, I was unable to detect any evidence in the carefully prepared statistics of the English sanitary officers in charge that rags constitute a medium of infection.

We are frequently confronted with statements that money contains a large number of bacteria; this is true; they also exist on our hands and faces, on our linen, car straps, balustrades of stairways, and in innumerable other places, but they are not the kind of organisms that transmit infectious disease. From a bacteriological standpoint a very interesting series of experiments in connection with this part of the subject was made by Mr. Warren Hilditch, of Sheffield Institute, which demonstrated the fallacy of this theory.

Physicians are frequently concerned regarding the possibility of transmitting disease from one patient to another through the medium of their own clothing. Instinctively they know that this does not happen or at least only in rare instances. Gowns are frequently used in the sick room to protect against this possible danger. I am quite sure my readers will agree with me that it would be exceedingly difficult to arrange a practical system by which a physician could always have a gown at the proper time in dealing with the various forms of infectious disease which he meets in his daily practice.

In making applications or otherwise dealing directly with the infected membrane where sudden expulsion of mucus frequently occurs, it is proper that the physician should be protected by some form of covering. In these instances a sheet may be so deftly used as to answer all the purposes of a gown and should afterward be treated with heat in the same manner as are other articles directly connected with the patient.

No one who is practically familiar with this subject doubts that in some rare instances clothing, money, rags, or other articles may act as a medium of infection; while this should be given proper consideration we must devote our time, in public sanitary work, rather to the usual or common means of infection.

If our former theories regarding the means by which infectious diseases are transmitted, are wrong, what are the real means of infection?

The knowledge we now possess on this subject proves that infectious diseases are transmitted by persons rather than things; by contact with others; by certain discharges of those who are infected; and by insects and vermin.

We are familiar with the fact that in typhoid fever

and cholera it is the intestinal discharge, and in diphtheria the discharge from the nose and throat, that we must deal with in the protection of the public health, and we know that when this condition is properly looked after, the most effective and satisfactory results follow. However, in measles and scarlet fever we have dealt rather indefinitely with the subject of infection, for this bugaboo of desquamation has weakened our lines of defense against the real danger—that is, the infected discharges. As the specific organism of these diseases has not yet been identified, it is obviously difficult or impossible to determine when the discharges cease to act as a medium of inspection; still, the problem will be much sooner solved if we direct our attention to the real danger instead of the theoretical ones.

In hospitals, where measles and scarlet fever as well as other infectious diseases are treated under the same roof, and the wards containing these various diseases are separated only by low or dwarf partitions which leave the upper part of the wards continuous with each other, there is practically no transfer of infection from one ward to another, neither is room disinfection carried out as a part of the routine work. These results certainly do not favor the desquamation or aerial theory of infection, and it would seem that, when careful attention is given to the disinfection or destruction of the discharges from the nose, mouth, and ears and above all where general cleanliness is strictly observed, which I believe ranks higher than disinfection, we have done all that modern sanitation calls for in the treatment of this condition.

Measles and scarlet fever, as well as other infectious diseases, are commonly conveyed from one person to another through the medium of infected hands. Dipping the hands for a moment in a disinfecting solution does not disinfect them, for it takes some time to penetrate the infected material. It is the proper preliminary cleansing of the hands with soap and water upon which protection in this direction really depends.

So far as the transmission of infectious diseases by insects is concerned, it may be said that the investigation of this subject, although yet in its infancy, has already yielded results which have been of great benefit to mankind, and it is fair to assume that there are many other diseases and other insects concerned in this manner of infection, of which as yet we have no knowledge. I believe this calls for every effort on our part to eliminate the mosquito by destroying its breeding place, and that the same action should be taken in regard to the fly or other insects which we suspect as agents of infection. But little will be gained in the way of eliminating them by efforts to destroy the winged insects. It is the destruction of their breeding places that must receive our careful attention.

I have dwelt at some length upon these details, because we cannot properly protect against infectious diseases unless we are familiar with the means by which they are transmitted. With this knowledge it is comparatively easy to deal with almost any condition which may exist; besides, the work of protection is much more simple and more easily carried out.

Probably no sanitary measure has been so vari-

ously dealt with as disinfection. The methods employed are frequently unnecessary and not in accordance with the dictates of modern sanitation. Agents are used which have little or no value, material in households or on shipboard is uselessly injured or destroyed, and when disinfection is actually required it is frequently imperfectly carried out. I may take for instance the treatment of the discharges of typhoid fever. The method usually employed consists in placing a disinfectant in the bed pan before or after the discharge, the mixture being allowed to remain for some time before the receptacle is emptied. This method cannot be depended upon for thorough disinfection; besides, not infrequently in handling or manipulating the receptacle the nurse or attendant is infected, for she has faith that this treatment answers all requirements. Some time ago I made a series of experiments in regard to this detail. They consisted in the treatment of fecal matter with the various disinfecting solutions which are commonly recommended for this purpose, and in the manner in which they are usually employed. It was found at the end of twenty hours that but one eighth of an inch of the mass was disinfected. These experiments were subsequently repeated by others with practically the same results, and I believe they prove that this method of treating the discharge does not disinfect, and it is not improbable that when the fecal matter is thrown in the water closet or privy vault and disintegrated, it may later infect something which is taken into the mouth.

It is true that the discharges of cholera become rapidly fluid and also more quickly succumb to disinfecting agents, still these conditions are sometimes uncertain, and we should make no exception when we have means at our command to secure full protection. Furthermore, it is exceedingly important that the receptacle itself should be disinfected at the same time the discharge is treated, although the attendant does not fully appreciate this and sometimes does not realize the necessity of cleaning the hands. I believe there is but one way to deal with infected discharges of this kind if it can be made use of, and that is by heat, either boiling water or steam. Some simple means of performing this may be improvised wherever a metal receptacle of sufficient capacity and a fire can be secured, or a simple and inexpensive apparatus may be made as follows: A sheet copper receptacle, sufficiently large to hold a full size bed pan may be easily constructed, having metal supports to raise it above the ground high enough to allow room for a lamp or gas apparatus to secure the necessary heat. The cover should, if possible, be made sufficiently heavy to offset a slight pressure of steam. This, however, is still further provided for by a spout which it attached to the portion of the top not involved in the cover, and for the same purpose that a spout is used on a tea kettle, to allow the escape of steam. The upper end of this should be connected with a flexible tube which may be carried out of the window in order that the steam does not escape into the apartment itself. When not used the temperature of the water may be kept short of the boiling point. The addition of a small amount of potassium permanganate will usually prevent any unpleasant odor. The value of this method lies in the fact that when the bed pan is brought

from the patient, placed in the bath, and exposed to boiling water for twenty minutes, we may be certain that both the pan and the discharge are disinfected, and it makes little difference what is done with them afterward. This apparatus is only a suggestion of the principle, which may be carried out on a larger scale. In the hospitals which have been under my direction, large apparatus were constructed along these lines, capable of holding eight bed pans at one time. Steam may be used instead of boiling water. This method of disinfection is valuable in any form of infectious disease, for the treatment of discharges or textile fabrics or other articles which may have been directly contaminated.

I am aware that it is possible to disinfect with carbolic acid and other agents, and in some instances it is not practical to use boiling water or steam, but when it can be employed it should take precedence over all other agents. It offers full penetration, its action is certain and prompt, it does not involve danger or expense, and apparatus for its use can almost always be improvised; besides, it is the natural disinfectant and will sooner or later be so considered.

A careful study of the means by which infectious diseases are transmitted will teach us that the necessity for disinfection is confined chiefly to infected discharges and articles about the patient that may be directly contaminated; that room disinfection is an unimportant factor in the prevention of infection, that it is employed largely in connection with the fomites theory, and is supposed to represent a final clearing up at the termination of the case. The truth is, we should deal constantly with the infection which is present in order that there may be no terminal disinfection necessary. It is the dependence that is placed upon this which favors carelessness on the part of the nurse or attendant, for the great importance of continued surveillance is not so fully appreciated.

There are instances where extreme carelessness has occurred in the treatment of infectious diseases, which may justify the disinfection of the apartment. In smallpox we have proof that the vesicles contain infectious matter, and it is the general practice to disinfect the apartment after the patient is removed, although there has been strong evidence presented to show that after the removal of the patient, the room ceases to be a medium of infection. I am willing to say that I am not unfavorable to this opinion, and I believe that the statements which have been handed down to us, describing the infection which is constantly lurking about the apartment where infectious disease exists in the form of organisms in their active state, is largely a creature of the imagination. We believe this largely by inference. I have no desire or intention to overlook any proper or reasonable means of protection, but I believe room disinfection goes hand in hand with the fomites theory, and that both in various ways encourage carelessness; they are discredited and should be replaced by modern methods which, I feel certain, offer far greater value.

It may be said that the gases which are used for room disinfection—sulphur dioxide and formaldehyde—have very little power of penetration and can be depended upon only for the most superficial form of disinfection. Furthermore, the sprinkling or

spraying of rugs or carpets which may have been contaminated with discharges, is not a safe or practical method of disinfection. If these articles are contaminated they should be subjected to heat, either boiling water or steam.

I believe that nothing is more unreasonable than an attempt to disinfect an entire house, and I can imagine no condition that would call for it, unless it is to cater to the wishes of the family.

It is impossible in the limited space given this paper satisfactorily to consider the many details connected with this important subject. I believe the essential ones are that we now have conclusive proof that many of our former theories regarding the means by which infectious diseases are transmitted are wrong, and that in the prevention of these diseases we should in the future carry out such means as are dictated by our present knowledge of this subject, and that theories and measures which are not supported by scientific evidence and practical experience should be discarded.

If this course is followed, we may as a rule expect to detect the origin of outbreaks of infectious disease, which constitutes the most important and valuable means of dealing successfully with this danger. Further means of protection include the prompt and careful isolation of the patient and the constant disinfection or destruction of infected discharges and articles which may be directly contaminated. The most careful attention must be given to cleanliness. Than this nothing is more important, not only for its great value in the prevention of infection, but for its educational value also.

When the character of the disease calls for it, exhaustive effort should be made to destroy infected insects and to extend general aid in destroying their breeding places.

The treatment of those who have been exposed to infection consists in at least a daily examination early to detect the invasion of the disease. This is not complete without the use of the thermometer. The practice of quarantining well persons in whose homes infectious disease exists should disappear with the fomites theory. The danger of these people is that they may contract disease and transmit it by personal contact, and not that they may transmit it to others by their clothing; besides, it is best that they should be out of the house; furthermore, these people are often the bread winners of the family, and their enforced idleness is a matter of considerable concern.

THE USE OF MIXED INFECTION VACCINES IN SKIN INFECTIONS.*

BY JOHN G. BURKE, M. D.,
Pittsburgh,

Dermatologist to South Side Hospital.

To determine the exact value of a remedy in any disease, where it is possible to do so, it is advisable to confine the treatment to the remedy the efficacy of which you are investigating, so that there will be no doubt as to what the result was due, as there might be if other remedies were used at the same

*Read at the meeting of the College of Physicians, Pittsburgh, April 25, 1912.

time. While, therefore, I have used the vaccine in a much larger number of cases than I am reporting, in those I report no other remedy was used, so that the result, whether favorable or not, must be attributed to the vaccine.

I will first take up the use of the vaccines in acne vulgaris. Last September, in looking over my records of cases of acne vulgaris, to form some conclusion as to the value of the vaccines in this disease, I found I had used all the stock vaccines on the market at that time, *Staphylococcus albus* vaccine in some, mixed staphylococci vaccine in others, and combined staphylococci and acne bacilli in the remainder. In comparing the results in cases in which the vaccine had been used with those in which it had not been used, I could not see that it had been of any benefit, in fact I had to admit that the stock vaccines had been a disappointment. During the same period of time I had six cases in which an autogenous vaccine had been used, two cases of my own, and four cases in which other physicians had had it used. The results in these cases had been no better than in the cases in which the stock vaccine had been used, so I was discouraged as to the value of vaccines in acne, and from the success of the vaccines in other conditions I concluded that the failure was not because of the method, but was because we had not succeeded in getting the right vaccine.

About this time my attention was called to the Schafer product, which was made in a different manner. Instead of being a sterilized emulsion of dead bacteria, it is made from cultures from almost all bacteria growths, which are mixed, and then filtered so that the finished product consists really of the toxins of the different bacteria. It is neither a bacterial vaccine, nor a serum as ordinarily understood, as it contains no germ bodies and is not made with the aid of animals. I refer to it as a vaccine, because I do not know of any word in use at the present time which expresses the meaning better.

I used Schafer mixed infection vaccine in four or five cases, and was convinced that it had a marked effect on the pustules, which it would clear up, but I could not see that it had any effect on blackheads. As the mixed infection vaccine was a polyvalent vaccine, composed of streptococci, staphylococci, pneumococci, etc., but did not contain any acne bacilli, I suggested to the representative of the house that made it, that they make a vaccine from the acne bacilli, as it is considered by the best authorities that the comedo is due to the activity of the acne bacilli, and a vaccine to be of any value in acne would have to be prepared from that organism, and not from bacteria that were secondary to it. He referred the matter to the home office and they finally furnished me with two vaccines, one made from the acne bacilli, and the other a combination of equal parts of the acne bacilli vaccine and the mixed infection vaccine, the first to be used in those cases where there was a relaxed, flabby skin, with a hypersecretion of sebaceous matter and blackheads, the mixed vaccine being used where there were these same symptoms with the addition of pustules, which showed involvement by the secondary bacteria.

To give this product a trial I selected two cases of acne from my dispensary service, and discontinued all other treatment, either local or internal, so there would be no question as to what the results were due.

CASE I. C. H., male, aged twenty-six years, waiter by occupation, came to the Pittsburgh Free Dispensary in October, 1910. He had lost his position on account of his appearance; his face was covered with blackheads, the skin being thick and very greasy, and scattered over the face were about twenty pustules, varying in size from a pea to a quarter dollar, where several pustules had run together to form a large one. He presented a typical case of acne indurata. By opening the pustules and extracting the pus, and removing the blackheads with a comedo extractor, he was made fairly presentable, and with the application of a modified shale paste his skin was improved considerably, but the blackheads would recur and if he neglected treatment he would soon show more pustules. In April, 1911, he received four injections of acne staphylococci vaccine without showing any improvement in his condition. September 14, 1911, he still had numerous blackheads, and the pustules were small but quite numerous. From this date until October 21, 1911, he received seven injections of Schafer, mixed infection vaccine. I could not see that there was any change in the blackheads, but the pustules all cleared up and it was this fact that led me to suggest that a vaccine be made containing the acne bacilli. I received some of the acne bacilli vaccine in February, and when he presented himself, February 16, 1912, his face was still covered with numerous blackheads, but contained only a few pustules. Between February 16, 1912, and March 19, 1912, he received seven injections of Schafer acne bacilli vaccine. I did not notice any change until after the fourth injection, when the blackheads began to disappear, so that when he received the last injection the face was free of blackheads and pustules, and was only slightly greasy, causing a marked improvement in his appearance.

You will note that this patient first received the acne staphylococci vaccine without any result, then the Schafer mixed infection vaccine, which improved the pustular condition, and last he was given Schafer's acne bacilli vaccine, which caused the comedones to shrivel up and disappear.

CASE II. Wm. M., aged eighteen years, had been coming to the dispensary for a year; had acne vulgaris, mostly blackheads. As he had only a few pustules, vigorous treatment with the modified shale paste or the lotio alba would keep his face in a fair condition, but as soon as he discontinued treatment, it would recur. He was selected for the vaccine as a control to Case I, and, from February 21 to March 13, 1912, he received seven injections of Schafer acne bacilli vaccine, as in the other case. After the fourth injection the blackheads began to clear up, and when he received the last injection his face was clear.

CASE III. Dr. C., from one of the surrounding towns, consulted me for a pustular acne rosacea, involving his nose. On examining him I found he also had a pustular acne vulgaris confined to his back. I gave him an application to use on the nose and gave him some Schafer combined acne and mixed infection vaccine to have his brother, who is also a physician, inject, and told him not to use any local application on the back. I saw him, April 24th, after he had had three injections, at weekly intervals; his nose was markedly improved and the pustules on the back were almost gone. The credit for the improvement to the nose will have to be divided between the local application and the vaccine, but the improvement of the acne on the back will have to be given to the vaccine, as the back did not receive any local treatment.

These three cases have convinced me that the Schafer acne bacilli vaccine will reach the blackheads, and it seems to confirm the opinion held by some that the blackhead is either a growth of acne bacilli, or caused by the action of the bacilli in the sebaceous gland. While I admit that three cases are a small number on which to base any therapeutic

results, yet the action was so marked in all these cases that it left no doubt in my mind that the result was due to the vaccine.

I wish to report here a case of acne vulgaris in which a cholecystitis, which the patient was also troubled with, improved while taking the vaccine. This was in a girl thirty-one years old, who had had a cholecystitis for four years. She had been to Carlsbad, and had had all the different diets and drugs advocated for this condition. At this time she was under the care of Dr. C. R. Jones, who referred her to me for an x ray dermatitis, which had followed the application of the x ray in treatment of an acne vulgaris by another physician. The patient was afraid the acne would return after the dermatitis subsided and wanted something done to prevent a recurrence, so I suggested the vaccine, and mentioned the fact, that as the vaccine we proposed to use was composed of a number of different bacterial growths, it might have some effect on the gallbladder infection. During the course of the injections she noticed an improvement, and when she had received the last one the pain and distress over the gallbladder was much better, and the stools, instead of being clay colored, were of a more normal color, and there was no recurrence of the acne after the dermatitis subsided.

A case of lupus erythematosus in the service of a prominent physician of New York, was reported as cured by an intravenous injection of Schafer's vaccine, and having two cases in my dispensary service, I used the vaccine on both of them, each patient receiving seven injections subcutaneously, as I was advised not to use the intravenous method. Neither patient showed any noticeable effect on the eruption; whether the difference in the effect between the intravenous and the subcutaneous injection would account for the difference in the result I am unable to say.

One patient has since showed marked improvement from the use of carbon dioxide snow, and the other one is improving under Hollander's treatment, which consists of large doses of quinine internally and the application of iodine externally.

I had one case in which I had a rather untoward result that I think had better be reported. This was in a man who, about a year before, I had cured of recurrent furuncles by injecting a staphylococci mixed vaccine. He presented himself with a small boil on the side of his nose. The centre of the boil was yellow and I was able to remove the top scale with a needle; wiping away the pus, I touched the cavity with Lugol's solution, and to prevent any more developing I gave him an injection in the lumbar region of Schafer's mixed infection vaccine. The site of the injection became swollen and very painful; he complained of fever and chills, severe headache, and pains all over the body; as he expressed it, he felt as if he had been beaten with a club. The site of the furuncle showed a marked reaction; it became swollen and of a dusky red color extending for an inch around the furuncle. The eyelids became so edematous that he could not open them. Everything subsided by the second day. Just what caused these marked constitutional symptoms and the intense reaction at the site of the furuncle I am unable to say. I considered another infection

entering at the furuncle opening, the vaccine, and an idiosyncrasy on the part of the patient. The last, I am inclined to believe, was the cause.

I found that the pain following the injection of Schafer's vaccine was much more severe than that of the other vaccines, so I have been adding a tablet of urea hydrochloride and quinine to each injection. While it did not make the injection painless it mitigated the pain considerably.

8122 JENKINS ARCADE.

MANUAL TREATMENT OF THE ABDOMINAL SYMPATHETIC.

The Invention of the Swedish School of Mechanotherapy, not of the Osteopaths.

By EDGAR F. CYRIAX, M. D.,

AND ANNJUTA KELLGREN-CYRIAX, L. R. C. P.,
London.

During the year 1910, in the number of this JOURNAL for July 23rd, there was published an original communication of which we were the authors, entitled *The Manual Treatment of the Abdominal Sympathetic*. In this communication we explained briefly the technique, indications, etc., of the method specified, and it was pointed out that the abdominal sympathetic could be influenced, either directly by means of nerve frictions and vibrations applied to the posterior anterior divisions of the spinal nerve, or directly by means of manipulations through the abdominal wall. In addition, it was clearly pointed out that the manual nerve treatment entered into the original system of P. H. Ling (1776-1839), was elaborated by his successor, L. G. Branting (1799-1882), and that the treatment of the abdominal sympathetic, as we described it, is due to the further development and initiative faculties of Henrik Kellgren, especially as regard the technique now adopted as the standard.

These facts being entirely beyond controversy, it was more than surprising to find certain statements made by Dr. R. K. Smith, in an article entitled *Research Work in Mechanical Therapeutics* that appeared recently in the *Lancet-Clinic* (1911), and in which he refers to our contribution to the *New York Medical Journal*. The statements he makes are as follows:

I cannot refrain from stating from a sense of fairness that a careful perusal of this article . . . fails to disclose anything beyond a paraphrasing of the technique as taught in the osteopathic colleges for the last twenty years. It is interesting, however, to see osteopathic technique exploited in prominent medical journals, even when it is offered as new by practitioners of the older school.

We were certainly quite unaware that the treatment, such as we described it, could be regarded as identical with the osteopathic manipulations corresponding to it. Indeed, we had always been under the impression that the osteopaths asserted their treatment to be quite different from any other methods, including the Swedish. Hazzard, for example (*Principles of Osteopathy*, p. 292), states that "though there are similarities between the two, there are radical differences." Other works on osteopathy that we have consulted seem continually

to be trying to prove that osteopathy is a treatment resembling none other, and that no borrowing has been done by them, in spite of the great amount of obvious evidence that this has been the case.

This raises a fundamental issue: Either Hazard and his brethren are in the right, and the methods are not the same, in which case most certainly no "exploiting" can be imputed to us; or else they are mistaken, and they resemble one another so closely that they can justifiably be regarded as identical. And here we must point out that in the latter case the osteopaths can have no possible claim to priority of invention, inasmuch as the Swedish method in its earlier form dates back nearly a hundred years, and in its present improved form nearly forty years, whereas osteopathy was "invented" by A. T. Still, June 22, 1874 (see his *Autobiography*, p. 85, 1908). So, in any case, the osteopathic abdominal sympathetic treatment cannot be made out to date back earlier than this auspicious occasion; in fact it was probably "invented" at a much later date. We shall be much obliged if Dr. R. K. Smith, or any one else, can oblige us with the earliest record of it.

In order to substantiate beyond cavil our claims as to the priority of the Swedish school, we have systematically examined the literature of the Swedish system of medical gymnastics,¹ in order to discover what has been written upon the subject of the manual treatment of the abdominal sympathetic, either directly or indirectly through the spinal nerves, and we herewith present a brief synopsis of the evidence bearing on the point at issue.

Branting employed a large number of pressures on both the abdominal sympathetic directly and upon cerebrospinal nerves in order to affect the former. Abundant evidence of this can be found by examining the gymnastic prescriptions of cases treated under his supervision at the Royal Central Gymnastic Institute during the years 1840, 1851, 1859, 1861. (These have been published in his posthumous works issued in 1882 under the title of *Efterlemnade Skrifter*.) Among the manipulations frequently employed were suprapubic pressure, infracostal pressure, and infrascapular pressure. These were specially directed toward the nerves of that region (*Efterlemnade Skrifter*, pp. 178, 179, 1882). They were employed for a very large number of both thoracic and abdominal complaints. In his address to the graduates, April 1; 1846 (quoted Georgii, *Kinésithérapie*, p. 96, 1847), he states that he had employed bilateral pressure on the sacral plexus of the sympathetic and had thereby benefited spasmodic and painful conditions of the pelvic organs.

Rothstein (*Die Heilgymnastik*, p. 68, 1847) refers to the above mentioned infracostal pressure. He also mentions epigastric pressure for hysteria and hypochondriasis, and sacral pressure for pelvic and abdominal disease. The effects of such pressures are obtained both through the circulatory and the nervous system (p. 70).

In a case of dyspepsia and general debility treated by Georgii, in 1848, left infracostal vibration was applied (quoted by Chapman, *Ling's Educa-*

tional and Curative Exercises, p. 51, 1875). Richter (*Organ der physiologischen Therapie*, p. 213, 1850) cites vibropressures in the epigastric region for hysteria and hypochondriasis. Georgii (*A Few Words on Kinesipathy*, p. 40, 1850) states that pressure or friction may be applied to the abdominal organs, stomach, or its nerves, liver and spleen nerves of the bladder and rectum. Blundell (*Medicina mechanica*, 1852) enumerates a number of manipulations, such as pressure, friction, and percussion, along the spine, vibration on or near the solar plexus, the hepatic plexus, etc. These manipulations were employed for a large number of diseases of both thoracic and abdominal organs (see pp. 242, 257, 259, 261, 268, 271, 277, 281, 288, 291).

Neumann (*Die Heilgymnastik*, 1852) gives many interesting details as to the direct treatment of the abdominal sympathetic. He describes the technique of pressure on the solar plexus (p. 216), and on the sacral and inferior hypogastric plexuses (p. 217), and states that the latter are employed in bladder conditions, especially the paralytic ones, impotence in the male, sterility in the female, and irregularity of menstruation. In his *Lehrbuch der Leibesübungen*, 1856, part II, he again describes the technique of pressure on nerves (pp. 266, 267); he devotes nearly two pages (275-277) to the consideration of treatment of the solar plexus, and three quarters of a page to the sacral and inferior hypogastric plexuses (pp. 277, 278). He also refers to pressure on the sacral nerves (pp. 278, 283), general abdominal nerve pressing (p. 282), and nerve pressures down the side of the spine (p. 283).

Roth (*Handbook of the Movement Cure*, pp. 180, 181, 1856), also describes pressure on the solar and sacral plexuses. Eulenburg likewise gives directions for the treatment of these two plexuses (*Die Heilung der chronischen Unterleibsbeschwerden*, pp. 42, 43, 1856).

Ulrich (*Jahresbericht*, p. 31, 1859) refers to pressure on the solar plexus in a case of catalepsy. Steudel (*Praktik der Heilgymnastik*, p. 27, 1860) employed pressure on the sacral plexus in cases of weakness of the bladder and sexual impotence. G. H. and C. F. Taylor were two medical men who for many years had a Swedish medical gymnastic practice in New York. The former (*Exposition of the Swedish Movement Cure*, p. 224, 1860) refers to infracostal pressure and states that it "excites muscular and nervous actions in the organs and in certain cases relieves pain." Confeld (*Die medicinische Gymnastik*, p. 54, 1861) refers to pressure on the celiac and hypogastric plexuses for constipation.

Hartelius (*Om Sjukgymnastiken vid Gymnastiska Central Institutet under ar*, p. 51, 1863) mentions pressure on the celiac ganglion or celiac plexus as benefiting digestive disorders. In his *Lärobok i Sjukgymnastik*, 1870, he describes pressure down the side of the spine (p. 80), suprapubic pressure which is applied for cystitis, menstrual disorders, leucorrhea, hysteria, and prolapsus ani (p. 90), and pressure over the solar plexus, which is applied for cardialgia and chronic gastritis (p. 90).

Some of the gymnastic prescriptions of patients treated by Henrik Kellgren, in 1869 and 1870.

¹A bibliography has been published by one of the authors under the title of *Bibliographia Gymnastica Medica*, in Worishofen in Bavaria, in 1909.

which we have had the pleasure of examining, prove to us that during these years he was employing nerve manipulations for the abdominal sympathetic to a considerable extent. In 1875, Glatzer (*Wiener medizinische Presse*, xvi, 1875) refers to these new developments of the treatment of nerves and ganglia as introduced by Kellgren, among others his spinal nerve treatment. He quotes Benedikt as suggesting the theory that the result may, in some cases, be due to an influence on the spine and even on the vasomotor nerves (*Ibidem*, p. 240).

All the foregoing evidence is taken from a period previous to the "invention" of osteopathy. During the further period up to 1892, which marks the beginning of the era of twenty years, referred to by Doctor Smith, a large number of authors have written upon the subject of the treatment of the abdominal sympathetic, for example, Arvid Kellgren, whose *Vorträge über Massage* was published in 1889, and *Technique of Ling's System of Manual Treatment* in 1890. The latter was reprinted in Wood's *Medical and Surgical Monographs*, in New York, in 1891 (x, 569-712).

In view of the foregoing, one fact is evident: As regards this method of treatment of the abdominal sympathetic, if any exploiting or borrowing without recognition is to be laid to the charge of any one, it is obviously to the osteopaths.

4 CRAVEN HILL, WEST.

IMPLANTATION OF FAT INTO TENON'S CAPSULE AFTER ENUCLEATION.*

BY WALTER BAER WEIDLER, M. D.,
New York.

It should be the first thought and aim of every surgeon, in such operations as the removal of the eye or the amputation of the leg, to secure a good, healthy, and useful stump, in order that the deformity and defect shall be as slight as possible, and also that the after results shall be such that the patient does not feel embarrassed or inconvenienced through the loss of the member.

With these thoughts in mind, and with the progress that has been made in surgery, the ophthalmic surgeon has for the past twenty-five years tried many forms of enucleation and implantation into Tenon's capsule and the orbital tissues, of different materials, with the hope of securing a more freely movable stump for a glass eye. So far these efforts have been successful to a moderate degree only. Before this time it was thought sufficient if the ophthalmic surgeon removed the diseased or disfiguring eye without giving any special thought to the after appearances or the movements of the artificial eye.

It was de Wecker who first suggested a simple procedure as an improvement upon the mere removal of the eye. He sutured the conjunctiva, the capsule of Tenon, and the tendons of the muscles together with a purse string suture and after the eye was enucleated, this suture was tightened and all of the tissues were brought together to form a

stump. Since his first efforts to improve the orbital stump, many different operations have been devised. A great many of these operations have been tried, but have failed for one reason or another. Perhaps the most serious objection that can be raised against this form of surgery is the liability to increase the danger of sympathetic ophthalmia. This has followed some of these modified operations for enucleation and must be remembered. The one operation that has been followed by sympathetic ophthalmia more often than all the rest is the one devised by Mules. It consists in the amputation of the cornea, the removal of the contents of the eyeball, and the implantation in the sclera of a glass ball. Since this operation of evisceration has been in vogue there have been thirty-six cases of sympathetic ophthalmia reported. Thus we see that this is a dangerous procedure, and one which exposes our patient to the loss of his sight, when there is no danger of such an accident if enucleation is performed.

A modification of this operation was suggested by Frost and Lang to remove the danger of sympathetic ophthalmia. They remove the eyeball and then implant the glass ball in the capsule of Tenon, conjunctiva, and the cone of ocular muscles. The one drawback to this operation is the frequency of extrusion of the glass ball from the socket.

I will mention only some of the many things that have been tried from time to time to secure a more movable stump for the glass eye. Mules used the glass ball and Fox suggested the gold ball; others have tried celluloid, sponge, peat, bone, fresh and decalcified; agaragar, petrolatum, rubber, wire, silk and catgut, rabbit's eyes, and fat from the gluteal region. It is to the latter, the use of fat as an implant, that I would like to especially call your attention. This is not a new operation, as it was first tried by Barrequier, some fifteen years ago, and has been done by many ophthalmic surgeons with varying degrees of success. The operation is comparatively simple and not attended with any danger to the patient.

The enucleation is performed in the usual manner, with the exception that just before each muscle is severed from the globe, a catgut suture is attached to it, and this suture is held by a hemostat. After the eyeball has been removed, we place in the capsule of Tenon a mass of fat tissues that has just been dissected from the gluteal region of the patient. The quantity of fat tissue used should be governed by the size of the eyeball. If we find a normal sized eye, the quantity of the fat tissue used will be greater than in these cases after removal of a shrunken or tuberculous bulb.

The external and internal recti muscles are brought together and tied with catgut sutures, and then the superior and inferior recti in the same manner; after this the conjunctiva and Tenon's capsule are brought together with a purse string suture of silk thread. Bandage is applied, and the patient is put to bed for two days. There is usually slight or no reaction after the operation. In case of severe swelling, ice pads should be applied constantly.

I have performed this operation three times so far and it is my desire to do it at least thirty or forty times before I should feel justified in drawing

*Presented at a meeting of the Triprofessional Society at Hotel Astor, May 21, 1912.

any definite conclusions. This brief report is offered as a preliminary statement of the work.

CASE REPORTS.

CASE I. T. P., aged twenty-eight years, Italian, enucleation for old iridocyclitis, the eye being of normal size. Fat implant about the same size as the globe, 25 x 25 mm. No reaction, discharge slight, some tendency to formation of granulations on stump, which were removed with applications of silver nitrate. Very good motion of the eye obtained. Considerable shrinking of the fat tissue, leaving an elevation in the socket about one half the size of the implant.

CASE II. H. H., aged fifty-eight years, German, enucleation of a tuberculous bulb, and fat implanted same size as globe, or perhaps a little larger. Considerable reaction and discharge. Microscopic examination of the discharge showed mucous cells and shreds of mucus, but no bacteria. The constant use of ice compresses and protargol reduced the inflammation in a few days. One month later, the implant had shrunk to one third of its former size.

CASE III. R. P., aged thirty-eight years, Italian, enucleation of a supposed microphthalmic globe and fat implanted. Some reaction and discharge, which was treated with ice compresses and protargol. Microscopical examination of discharge negative. Six weeks later, the stump was reduced to one half its size.

In Cases II and III the reaction, i. e., swelling and discharge, was quite free, and this may have been due to the fact that the implants were too large for the size of Tenon's capsule. I used these large implantations purposely in these cases, as I had in mind the one fault of this operation, namely, the great tendency to necrosis or shrinking and absorption of the fat implant. Necrosis and absorption of the implants have followed this method of operation so often that this is the one reason that it has not been done more generally by ophthalmic surgeons. There have been some cases of infection reported, but with no more serious consequences than the loss of the stump by suppurative. This operation does prolong the patients' stay in the hospital and keeps them from their work for a longer time, and this might be considered a disadvantage in the case of wage earners.

The advantages asserted for this operation are:

I. There is nothing that can be broken at any future time, as in the case of a glass ball stump.

II. The fat being removed from the patient's own body, overcomes the objections that have been raised against the implanting of a foreign body in the orbit.

III. There is no danger of sympathetic ophthalmia.

IV. The fat is easily inserted and moulded, and is soon held in its place by the adhesions and ingrowths of connective tissue.

V. It is nonirritating and therefore is not extruded.

62 WEST FIFTY-EIGHTH STREET.

LOCAL TREATMENT OF TWO PISTOLSHOT CASES USING HOT WATER APPLICATIONS.

By F. GRIFFITH, M. D.,
New York.

Often as the writer passes along in this city he is reminded of Paris, wherefore it requires no great coloring of imagination in considering his present

site on the border of the district known in police circles as the "Hell's Kitchen," that it might be termed the negro's "Montmartre!" Here dwells within a confine or six or seven blocks an African population numbering perhaps ten thousand per-

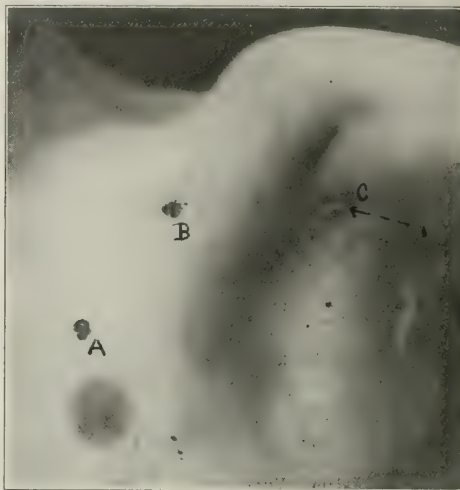


FIG. 1.—Case I; indicating entrance wound, location, and extraction of bullet.

sons, beside not a few whites. Regarding its makeup a precinct detective boastfully informed the writer that he was personally acquainted with as many as eight thousand of the dusky denizens of the quarter, with which statement, however, *prego con sale*.

CASE I. F., Austrian, aged twenty years, whom the writer was called to see February 19, 1912, and found lying semiconscious on a bed alone in his room fully

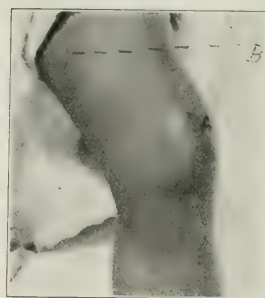


FIG. 2.—Case II; showing entrance wound and incision through which bullet was extracted.

dressed. Laying open his coat a smudgy, discolored, ragged perforation through the shirt bosom seemed to indicate by general characteristics a wound beneath and of firearm nature. Removal of the garments disclosed a punctured, gray edged, puckered, bloodless wound located three fingers' breadth above the left nipple and of a size in which a lead pencil might have fitted. No attempt was made to probe the wound at this time, it appearing to lead directly into the thorax; respirations and pulse rate, with general body condition with lowered temperature, indicated moderate shock.

Treatment at this time consisted in gently washing the site with soap and water solution, and flushing the wound surface with a half and half solution of water and hydrogen peroxide. A strip of iodiform gauze entered the mouth of the wound, and

fluffed gauze and adhesive plaster completed the dressing. The patient was blanketed, hot bricks and bottles laid beside him, calomel, grain one quarter, every half hour, and strychnine sulphate, grain 1/30 every three hours, were ordered. The patient reacted during the subsequent twenty-four hours and without special sign of endothoracic involvement, save for cramping, severe and constant pain over the upper wall of the left chest and axilla. Applications of steaming towels wrung out in water hot as could be borne were applied during a period of thirty minutes night and morning and the wound dressed as at the first visit. By the third day a thin, purulent discharge commenced; the wound was dressed twice daily thereafter during the active stage, extending over a fortnight. The hot fomentations controlled the cramping pains very well and by the fifth or sixth day the patient began to remark the feeling of some foreign body in his left armpit. The writer deferred making any decided finger palpation at this time, for the patient had no distinct or decided idea of reference as to the exact location of the body, and, as the axillary glands were generally enlarged and painful, secure judgment could not be made up. Hot water applications were applied regularly throughout the treatment until all inflammation subsided. The entrance wound closed gradually in the course of two weeks, and at the end of the third week under weak cocaine hydrochloride, 0.1 per cent. solution, the armpit was laid open and the foreign body definitely located and identified as a 32-calibre, smooth leaden bullet, perfect and encapsulated in the tendon of the coracobrachialis muscle and removed. A picture was taken March 15th, and showed a healing wound site of entrance scar and bullet burrow. The patient passed from final notice the thirtieth of the same month, perfectly restored.

CASE II. D., female, colored, aged twenty-two years, first seen March 6, 1912; patient was found seated rigid in a low chair, with left knee extended and marked with a bloodless punctured wound upon the upper and inner aspect of the patella; a foreign body was to be felt beneath the surface at the juncture of the middle and lower thirds inside the left thigh. Pain and stiffness with inability to stand were complained of.

The wound was treated locally like the first case. Hot applications were made regularly. The wound tract was not probed. Under weak cocaine solution an inch and a half incision was made about the tenth day over the site of the foreign body and a scored and battered leaden bullet of 32-calibre, containing an inlay of bone fragment, was removed from beneath the superficial fascia. The left knee joint was swollen four or five days after the third following injury. This patient recovered during the course of the month. She subsequently complained of some stiffness in the part in damp weather. A picture was taken May 4th.

It appears to the writer that septic temperatures, which never gave sign of approach in either one of these cases, were prevented by the active, continued use of the cell stimulating, hot water applications as described above; notwithstanding the acknowledged value from slinging support of the arm in the first case, and high elevation of the limb in the second, which were constantly carried out.

THE FIRST MEDICAL CLINIC OF VIENNA; VON NOORDEN'S DIVISION.

By J. GUTMAN, M. D.,
New York.

For centuries past Vienna has been known to be the centre of continental medical education and research, and justly so. From its medical school some of the greatest leaders in medicine, some of the most untiring investigators of the mysteries of life, and many of the most illustrious teachers have graduated. From this school also many of the great leaders in surgery, pathology, and clinical medicine have received their inspirations.

This wonderful foundation of medical progress was located within the old walls of the *Allgemeine Krankenhaus*, a peculiar assemblage of old, odd looking buildings, erected some one hundred and fifty years ago, with their thick and far extending walls, small windows, narrow winding stairways, long corridors, old fashioned gangways, numberless extensions, resembling an old time armory or prison more than an hospital. It was in these wards where cases were so minutely studied by the foremost men of the medical profession, where symptoms were traced to pathological findings, where methods of diagnosis were discovered for the benefit of every practitioner.

THE OLD HOSPITAL.

It became long ago apparent that these buildings had become inadequate for their purpose; the hospital lacked space, hygienic construction, sanitary provisions; the facilities for teaching became insufficient, and accommodations for the great number of students were meagre.

It did not take long for the government to decide upon building a new institution, but it took several years of preparation before the foundations could be laid upon a plot of land adjoining the old institution, extending over an area of over 200,000 square metres at the cost of some seventeen and a half million kronen. Several institutions and dozens of buildings had to be razed to make way for this structure, and on the twenty-first day of June, 1904, the venerable monarch of Austria, Kaiser Franz Joseph I, in the presence of the most illustrious personages of the country, civil and military, laid the cornerstone of the new buildings for the famous clinics. This date will forever remain conspicuous in the history of the city of Vienna; it marked the beginning of a new era of importance, not only to the country owning the clinics, but to the rest of the world.

The two gynecological divisions of Schauta and Wertheim were built and completed first; two beautiful, enormous institutions, excelled nowhere in the world. The erection of the medical division was to begin next, but here occurred the hitch from financial and administrative causes, and at one time it even seemed as if the whole project might have to be dropped. But when Professor Carl von Noorden came to Vienna, having been called upon to take charge of the chair of medicine, left vacant through the death of the famous Nothnagel he put his whole energy into the project, worked incessantly in a hundred and one directions to remove

all pending difficulties, brought harmony among the warring administrative departments, and soon had everything in such shape that the work could again be resumed. Within a short time, not only his own, the first medical clinic, was completed, but also Pirqué's children's clinic and Chiari's nose and throat division were ready for occupancy and use with the commencement of the winter semester of 1912. It was a great pleasure for the writer to be present at the opening ceremonies of the clinics and to witness the ovation given to the man whose enormous efforts have been crowned with great success, to Professor Carl von Noorden.

THE VON NOORDEN CLINIC.

The new clinics are in the ninth district, opposite the old buildings. The entrance gate, on Laza-

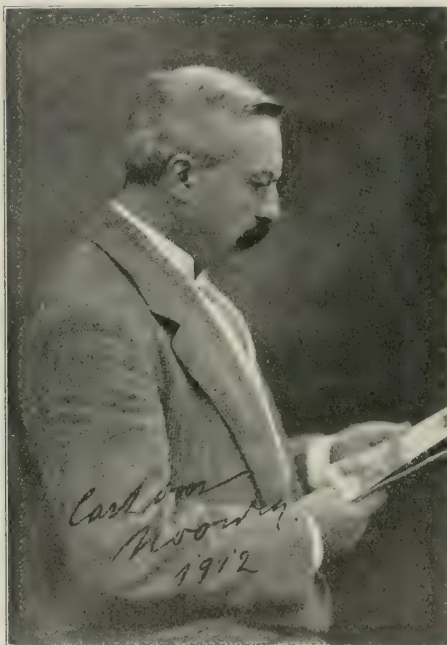


FIG. 1.—Carl von Noorden.

rethgasse, is in itself an imposing structure. It contains the residential rooms of the porter, a rather important employee of all institutions and buildings in Vienna; at the gate all arriving and departing persons are registered, all information is imparted, everything being checked, etc. Thence a broad avenue leads to the clinic Noorden on the one side and the children's and Chiari's clinics on the other. The avenue as well as all the surrounding plots and passages are beautifully lined on both sides with young trees, shrubbery, and flower beds.

The building of the clinic Noorden is of brick and cement coated; it is one hundred and twenty-five meters (about 400 feet) long, runs from north to south, and consists of a main building with three winglike extensions in the rear. Its height is limit-



FIG. 2.—Front view of Clinic Noorden.

ed to four stories, and its roof is sloping except in those parts used as a roof garden for sick patients and convalescing experiment animals. The principal entrance admits one to the broad, long, light corridor running the whole length of the main building and meeting at either end the spacious corridors of the extensions. The elevator transporting the patients on cots from the various stories to the lecture rooms, Röntgen rooms, hydrotherapeutic and other therapeutical departments is placed conveniently in the centre of the building, while the stairways face the three rear extensions.

DISPENSARIES AND WARDS.

Beginning with the second story, on either side of the elevator shaft are situated the special dispensaries of the clinic; on one side for males, the other for females (a practical division), while on the opposite side in the centre is placed the dispensary for nervous diseases. These are the only cases attended here; patients with other ailments than medical or neurological cases not connected with medical disorders are transferred to dispensaries of other appropriate clinics.

Great stress is laid upon these dispensaries by the chief and for several very important reasons: First, because of the considerable number of patients applying to them for relief (about 35,000 during last year); second, because a great proportion of these applicants are sent by their physicians from all parts of the continent for examination and diagno-



FIG. 3.—Rear view of Clinic Noorden.

sis; third, they usually present most complicated chronic cases requiring most systematic examination and a great deal of attention before the proper diagnosis may be made with certainty for their home physicians; fourth, because the most valuable material and the most instructive cases have to be selected for the chief for presentation at his lectures to the graduate and postgraduate students; last and not least, the material for the hospital beds of the clinic, which must be composed of rare, interesting, or difficult cases for scientific investigation, study, and treatment, has also to be mainly recruited from these dispensaries. These departments are there-

as the bedridden patients, and in obscure cases hold consultations to decide upon diagnosis, so that poor patients get the best men to diagnose and treat their ailments free of charge. The material is also partly used for the polyclinic instruction of the advanced students and physicians.

Next to the male dispensary is conveniently situated the dark room (for cystoscopic examinations, ophthalmoscopy, proctoscopy, etc.), while in front of it are the office of the head nurse and the entrance to the small lecture room. The latter has a seating capacity of one hundred, and is equipped for special classes and section teaching in the vari-



FIG. 4.—Main lecture hall.

fore placed in charge of two able professors with a number of physicians and students to assist them, while the neurological division is personally taken charge of by the eminent authority, Professor von Frankel-Hochwart. Each dispensary consists of a spacious waiting room, four or five examining rooms, its own miniature laboratory, a full equipment of the necessary instruments, and has the privilege of using any other department in the general hospital (Röntgen, cystoscopic, electrodiagnostic) or may call upon any dozent to make a diagnosis and, if necessary, upon the chief himself. Certain hours of the day are set apart for this purpose, when otologists, laryngologists, gynecologists, etc., come to the clinic, examine the ambulatory as well

ous branches of internal medicine and metabolism by dozents. Here are also given some of the courses arranged by the American Medical Association of Vienna for American physicians interested in the study of metabolism. Other auxiliary rooms on this floor are two well equipped laboratories for the immediate chemical, microscopical, and bacteriological examinations connected with the ward cases, a day room for nurses, small kitchens, bath rooms, linen rooms, lavatories, and a room reserved for the keeping of moribund or dead patients (in accordance with the laws of the country, the dead must be retained for at least three hours in the place of their death before being removed). In describing the sick rooms, it may generally be

said that great care has been taken to provide the patients with plenty of air, light, comfort, hygienic surroundings, and sanitary appliances. Everything is the most modern and best obtainable, and though simple and devoid of luxury is solid and perfect in every detail. Adjoining each general ward is placed a wash room with a number of wash basins for the use of patients, and next to it a room for the keeping of daily excretions of the patients. The attention given by visiting dozens to this room is only next to that of the ward itself, for the excreta are considered at this clinic of the greatest importance; they are daily collected and carefully examined.

The roomy extensions of the corridors are very beneficial to convalescent and ambulatory patients. They assemble, pass the time, dine here, and thus need not disturb those who are bedridden. From these extensions a door leads to a beautiful veranda, where a number of invalid chairs are placed for patients in need of sunlight, quiet, the fresh air of the surrounding gardens, and other outdoor comforts.

THE THIRD STORY.

The arrangement of the sick rooms on the floor above is very similar, only the special rooms serve different purposes. Here we find reading and study rooms for the use of the staff, which contain all recent literature and books. Adjoining this are two rooms occupied by the chief as office and for consultation after lectures with his staff. Next to it is found the anteroom of the large lecture hall. Here are kept all paraphernalia required for the lectures, numerous maps, specimens, chemicals, charts, reference books, manikins, instruments, etc. Two doors lead from here into the lecture room.

The lecture room is an exceptionally large, very commodious amphitheatre, of a seating capacity of two hundred and fifty, with great windows on both sides, extending from ceiling to floor. The light and acoustics are perfect. Room for assistants, patients, and furniture is ample. The amphitheatre can be momentarily darkened by the lowering of its black, iron shutters, operated electrically, when the presentation of stereopticon illustrations is required.

LIBRARY AND LABORATORY.

On the next and uppermost story are found a number of large, comfortable rooms of the resident house physicians; on the other side are the dormitories of the nurses, the nurses' library, a day room, and pavilion at the extreme end, while the main hospital library is placed in the centre. This library contains several thousand volumes of literature, books, reprints, etc., willed by the former chief of this medical division, the famous Professor Nothnagel, and is being constantly replenished with all the latest prints of the day from a special fund provided for this purpose.

The northern end of the uppermost story is wholly occupied by a laboratory. This is one of the best equipped, most extensive, and most up to date laboratories, not only of the universities of Germany and Austria, but possibly of the world. It consists of a main laboratory and fifteen additional smaller ones, serving special purposes.

Of the fifteen additional rooms, one is used as a weighing room and contains several of the most

delicate balances manufactured; another is for storing a stock of chemicals; a third is a dark room, equipped with various optical instruments, etc. Others contain electromotor apparatus, equipment for bacteriological and serological work, psychological investigations upon gas metabolism, apparatus for all kinds of titration purposes, for washing and cleaning glass, for oxidation and distillation processes, water bath evaporation, and the manufacture of foul gases; for the keeping and observation of animals under immediate experimentation. As may be easily concluded, a great deal of attention seems to have been given by the chief of the clinic to the laboratory part, for all progress of investigation into the processes of life or its deviations from the normal is greatly dependent upon the combined use of clinical methods and chemical, physical, bacteriological, and microscopical examinations.

DIETETIC KITCHEN AND RÖNTGEN DEPARTMENT.

The lowest floor we find equipped exclusively for therapeutical purposes. In its southern extension is the famous and only dietetic kitchen in Vienna. While most of the patients as well as the attending staff are supplied from the general kitchen of the hospital, the dietetic kitchen prepares recipes upon special prescription only. It occupies several rooms and is supervised by an experienced matron. The unique part of the kitchen is its dietetic school. Here courses are given by Professor Solomon in the art of gastronomy, preparation of recipes, cooking, baking, etc., and is the only school of its kind in Europe.

Next to the kitchen are the quarters for hydrotherapy, with all facilities for mud, sulphur, salt, and carbonic acid baths, also douches, tubs, swimming pools, etc. Next to this is located the inhalation chamber, where radium, thorium, and other emanation treatments are administered to suitable patients. This department is in charge of Dozent Falta, who has discovered a great many uses for the inhalation treatment. Beyond this we come to the two rooms supplied with a number of Zander apparatus for medical gymnastics, where cases of chronic rheumatism, paralysis, contractions, lung and heart disturbances are treated. On the opposite side we find a very important branch of the clinic, the Röntgen department. This is the latest and best equipped x ray institution of Vienna and is in charge of one of the ablest radiographers, Dozent Gottwald Schwartz, whose works have added a great deal to the knowledge of the abdominal organs. The rooms next to the x ray chambers contain the electrocardiograph outfit, in charge of Dozent Hecht. It is specially placed on the ground floor, in the farthest corner, to keep it free from any vibration during operation.

The rest of this floor space is occupied by the parts necessary for the operation of a modern hospital, dynamos, heating plant, storage rooms, refrigerating rooms, employee's closets, etc.

Of the personnel and system of the hospital it seems superfluous to speak. It is only necessary to mention the names of some of Professor von Noorden's staff: Dozent Hans Eppinger, Professor Solomon, Professor Neuberger, the dozenten Falta, Por-

ges, Barreuschen, Freund, Saxl, etc., to give us an idea of its brilliancy.

The dispensaries are open all forenoon and for several hours in the afternoon. Visiting the sick is allowed daily every afternoon. The forenoons are assigned for the regular work of the hospital; the afternoons and evenings, for individual, scientific research work, class, and section teaching to students, special courses for physicians, lectures, etc. The laboratories are open to the physicians of the clinic for experimental work, day and night, every day in the year. Materials, chemicals, apparatus, and other supplies are free and plentiful. Animals, however, for experimentation must be provided for by the investigator himself.

Such is, briefly described, the clinic founded by the untiring investigator in his particular field, "Professor Carl von Noorden," and this seems a fitting time to acquaint the medical profession of the States with the history, purpose, and scope of this wonderful clinic, since its chief is at present honoring this country with a visit, after taking part in the International Congress at Washington.

643 ST. MARKS AVENUE, BROOKLYN.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXVII.—How do you treat pruritus vulvæ? (Closed October 15th.)

CXXVIII.—How do you treat infantile convulsions? (Answers due not later than November 15th.)

CXXIX.—How do you manage chronic ulcers of the leg? (Answers due not later than December 16th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to Question CXXVI was awarded to Dr. Louis Weiss, of Newark, N. J., whose article appeared on page 854.

PRIZE QUESTION CXXVI.

THE TREATMENT OF BRONCHIAL ASTHMA.

(Concluded from page 856.)

Dr. Beverley R. Tucker, of Richmond, Va., writes:

In the treatment of bronchial asthma one can follow no "rule of thumb" method, but must have a comprehensive acquaintance with the condition and with the affected individual, together with a certain therapeutic resourcefulness. The condition is more or less a neurosis in which there is general bronchial stenosis dependent upon a tetanic constriction of the

small bronchi, which in turn seems often to be due to irritative sources elsewhere, most frequently in the nasal passages and the stomach.

The treatment may be best taken up under two heads, treatment for the relief of the attack, and treatment during the interval between the attacks.

Treatment for the relief of the attack. The easiest and most prompt treatment of the attack is to give morphine hypodermically, but this is the worst, most careless, and least scientific thing to do. The custom is so common as to render a distinct warning necessary. Its adoption means the formation of the morphine habit, with its consequent undermining of the general health and lessening of the patient's nervous stamina. Another reason for interdicting the use of morphine is that we have other remedies of equal efficiency in bronchial asthma, and much less baneful results. The attacks in many cases respond promptly and satisfactorily to the inhalation of from three to five minims of amyl nitrite, and many to the application of a large mustard plaster, one part of flour to six of mustard, over the chest and upper abdomen. Most attacks, even extremely severe ones, yield in a few minutes to adrenalin solution, one to 1,000, given hypodermically in doses of ten to fifteen minims, which may be repeated in fifteen or twenty minutes if necessary. This should be given into the muscles of the arm or back and not just under the skin, because it is taken up more quickly in muscle tissue. Ether inhaled or Hoffmann's anodyne internally or atropine hypodermically is also useful.

Little or nothing need be said of the position of the patient during an attack, for the sufferer will assume the position in which he can breathe best and with the most comfort. The clothing should be loosened and the room should be as well ventilated as possible.

Treatment during the interval between the attacks. This may be taken up under two subdivisions, general treatment and specific or medical treatment. General treatment includes the consideration of climates which are supposed to be beneficial for asthmatics. It is sufficient here to say that a climate at least fairly dry and in or near pine forests is to be preferred. Psychic encouragement is of great value. If the friends and families of asthmatics are allowed to show excitement and anxiety over the patient's condition the effect is bad, while reassurance and cheerfulness will have a good effect. Overexertion, excitement, overeating, excessive drinking, business strain, and worry are harmful to the patient.

Many patients have more or less emphysema, and the whole condition is often improved by properly regulated breathing exercises. Cold baths with the thorough reaction obtained by Turkish towels are beneficial. Massage is helpful. The patients should stay out of doors a great part of the time except in bad weather, and when indoors their rooms should be well ventilated. Exercise should be taken in moderation and should always stop short of fatigue. They should have a full, nourishing, and easily digestible diet. Excesses and eccentricities of diet should be prohibited. Regular habits of sleep and bowel evacuation should be induced.

Specific or medical treatment during the interval

between the attacks is most important. As mentioned, bronchial asthma may be dependent upon irritation in the nasal passages or nasopharynx, and these localities should receive especial attention. Adrenalin applied locally is of service. Cocaine is used, but is too dangerous a drug to be advocated. Antiseptic sprays and douches should be recommended, and if a deviated septum, diseased mucous membrane or bone, or polypi are found they should be treated by a competent nose and throat specialist. Gastric and intestinal catarrh or derangement must receive attention. Absence of hydrochloric acid in the gastric juice should be corrected by the administration of dilute hydrochloric acid, fifteen to twenty minims half an hour after meals. Tincture of nuxvomica, fifteen minims before meals, is also useful. Gastric hyperacidity should be corrected with magnesia or bicarbonate of sodium. Constipation should be corrected. High enemata are often useful in preventing the absorption of toxic waste.

Many cases of bronchial asthma are associated with gastroptosis. From violent breathing efforts the viscera become dislocated and drag upon the diaphragm. A well fitting abdominal belt, or correct strapping with adhesive plaster gives marked relief. If sleep is disturbed it is well to induce it at times with such remedies as veronal, trional, or paraldehyde. Bromides over short periods of administration are beneficial in quieting the nervous system, but better probably is arsenic, Fowler's solution being a good form, given in five minim doses three times a day, for several weeks. Asafetida and sumbul are also useful. The heart is taxed and sometimes dilated by frequent attacks and may have to be supported. Strychnine is of more service than digitalis or other heart remedies. If the patient has formed any pernicious drug habit this must be broken. Mild faradism is useful, five or ten minims daily with an electrode about an inch under the angle of each jaw.

Many drugs have been introduced as having specific action upon the condition such as belladonna, stramonium, and atropine. Hexamethylenamine, grains five, four times a day, may be useful in some cases, but the most effective drug is potassium iodide given in ten to fifteen grain doses in plenty of water or milk over long periods of time. It is well to discontinue the drug a day or so every few weeks to prevent iodism.

The prognosis is uncertain, though some cases undoubtedly end in recovery. Some of the cases are distinctly periodical in character. Most cases may be very pronouncedly improved if the foregoing outline of treatment in its various aspects is inaugurated and carried out. The condition is most distressing and its treatment must be thorough, systematic, and comprehensive, with the avoidance of morphine if we hope for the best results.

Dr. William E. Knewstep, of Hampton, Virginia, says:

Before going into the treatment of this condition, I think it would be well to mention a few of the theories regarding its etiology:

1. The theory having the largest number of adherents is that it is due to a spasm of the muscles of the smaller bronchioles.

2. Another theory is that it is due to a swelling of the mucous membrane of the smaller bronchioles, which is hyperemic.

3. Another is that it is due to an inflammatory swelling with exudation on the mucous membrane.

4. Another theory is that it is due to a spasmodic condition of the diaphragm and all the muscles of inspiration.

There are many others, though the foregoing appear to be the most important. Regardless of the number of theories that have been advanced, there is a strong reason by all to believe, a neurotic element supervenes. There are, therefore, several conditions which precipitate the attack: It may follow direct irritation of the nasal mucous membrane, shown by the fact that it frequently follows a rhinitis in some patients during certain seasons of the year, while at other times they are practically free from attacks, the bronchial mucosa being reflexly irritated from the nasal mucosa.

It frequently follows reflex irritation from the stomach and intestines; frequently patients eat a hearty supper and retire before digestion has been accomplished, and an attack is precipitated during the night. An excess of carbohydrates causing flatulency will sometimes bring on attacks.

Reflex irritations from the genitourinary apparatus also will precipitate an attack. Other conditions, such as certain odors from flowers, hay, emanations from animals, etc., are responsible for the condition in a large number of patients. There are also certain chronic conditions in the upper respiratory tract that are often the cause, such as a chronic hypertrophic rhinitis and nasal polypi.

The foregoing theories as to the cause of this condition are mentioned in the beginning, because the first object in the treatment of any condition is the removal of the cause.

The first thing that confronts the physician is the relief of the paroxysm, and remedies which will be most effectual should be used first. There are many things which will relieve the attack, but some act more promptly than others. The tablet triturates of epinephrine have in my experience been most satisfactory. Dissolve one tablet in fifteen minims of water and administer hypodermically; this will usually relieve the attack almost instantly. To prevent recurrent attacks during the night or day, as it may be, I give one drachm doses of a preparation containing potassium iodide, potassium bromide, ipecacuanha, lobelia, and leonurus cardiaca, which I have found to be a most excellent preparation in this condition.

There are other drugs capable of relieving the attack, such as chloroform inhalations, or inhalations of amyl nitrite, minims four or five on a handkerchief; spirit of chloroform given internally acts well in some cases. Hypodermic injections of pilocarpine, grain one eighth, act well also. Hypodermic injections of morphine sulphate, grain one quarter, act very well in relieving the attack.

To prevent recurrent paroxysms any of the sedative antispasmodics act well in most cases, such as tobacco, lobelia, stramonium, etc. These can be mixed with a small amount of potassium nitrate and burned in a vessel, the patient inhaling the fumes

through a cone made of paper. Potassium iodide, in doses of ten to twenty grains, acts very well in some cases to prevent recurrent attacks.

Between attacks the most careful examination should be made, particularly for conditions causing reflex irritation. A chronic rhinitis should receive prompt treatment. Nasal polypi should be removed. The genitourinary organs should be carefully examined so as to exclude any causative factor there. Any condition found that would in any way have an effect on the disease should be promptly treated.

In patients in whom a causative factor cannot be revealed, there should be an outlined method of living, given them by the physician, so as to exclude any other cause such as indiscretion in diet, catching cold, etc.

Hydrotherapy is an important factor in the treatment of this condition and should receive careful attention. Careful selection of clothing for the various seasons of the year is important. The heavy meals should be eaten in the early part of the day, so as to allow digestion to take place before retiring. Carbohydrates should be reduced as much as possible, especially toward evening.

In regard to climate, no fixed rule can be put down. Some patients do better in the city, while others seem to get along better in the country. The greater and drier altitudes are in the majority of cases more beneficial than the sea shore. However, I know of one case, in which an asthmatic had not been free from the disease for years, after having traveled from place to place on land, he began following the water, since which time he has not suffered in the least and has not had an attack of asthma for several years.

Dr. Abraham Goldstein, of New York, states that—

Treatment is divided into: Dietetic, hygienic, climatic, and medicinal.

Diet. The best plan for any asthmatic individual is to be put on a diet of plain nutritious food, avoiding highly seasoned, indigestible, and complicated dishes. Rapid eating, irregular hours, and late suppers must be avoided. All articles of food that experience has shown to be harmful must be forbidden. Starches, carbohydrates, and sweets must be avoided as much as possible by the gouty, while meats and fats should be eaten with moderation. In neurotics all stimulants as coffee, tea, and alcoholic drinks must be prohibited.

The bowels should be regulated so as to have daily movements; if necessary saline laxatives should be given daily.

Hygiene. Plenty of fresh air and well ventilated rooms are necessary. Exercise with dumbbells and Indian clubs is of advantage, also daily baths after exercise.

Climate. Much can be done for those whose circumstances permit the selection of suitable surroundings. As a rule high, dry climates are suitable for pure asthmatics, i. e., those cases uncomplicated with emphysema, though moist climates as those of Florida, southern California, and the Canary Islands are serviceable. Some are greatly benefited by taking sea voyages. As a rule asthmatics living in low levels find relief in great altitudes and vice versa.

There is no rule for this class that can be safely followed. Each case is a study in itself.

Examination of patient. All persons who have asthmatic tendencies should be thoroughly examined by a specialist for presence of polypi, nasal spurs, chronic rhinitis, or any condition causing congestion or inflammation of upper air passages, as they induce asthma, and cure is difficult with such abnormalities.

Medicinal treatment is divided into two stages: 1. To relieve the paroxysm; 2, prevention of its recurrence.

During paroxysm. Previous knowledge of patient is of great value, as we can know what drugs have proved of value in previous attacks. If the attack is severe, the best results are obtained by a hypodermic injection of morphine sulphate, grain one quarter, and atropine, grain 1/150; this should be followed by the administration of chloral hydrate, grains fifteen. As soon as the effect of the morphine passes off, the chloral commences to act. These drugs act as sedatives by reducing reflex nervous irritability and calming the patient, and by diminishing dyspnea lessen the resistance of the cardiac muscle. A mustard foot bath also comes in handy at this stage.

If, after an hour or two, no improvement sets in and the struggle for breath is not diminished, another injection should be given.

In some cases the paroxysms are so severe that a few whiffs of chloroform are necessary, but it is not advisable to intrust the patient with it, owing to the danger of excessive administration and liability of forming a habit. If morphine is not at hand pearls of amyl nitrite may be used with great advantage. Injections of epinephrine, from five to fifteen minims, of one to 1,000 solution, have shortened and relieved attacks. In cases where attacks come on slowly, it is not advisable to use morphine; here we obtain satisfactory results by the use of belladonna, lobelia, or nux vomica.

Alcohol often cuts short an attack when inhaled freely. A sheet of writing paper may be rolled into the form of a tube, partially saturated with alcohol and one end dipped into the bottle; the patient then inhales the air and alcohol vapor through the tube. The narcotics must be used cautiously on account of the danger of producing a habit.

With the subsidence of the acute symptoms we can discontinue the use of drugs. It is now time to look after any complications that may have set in. If there is cardiac weakness, tincture of digitalis or strophanthus combined with nitroglycerin or sodium nitrite should be used. If there is anemia, treat daily with arsenic and iron; some patients do well under codliver oil.

Between paroxysms the use of potassium iodide, grains five to ten, and belladonna, from three to five minims, relieve asthma and avert attacks. Potassium iodide is very good, especially in the gouty, in small doses after meals, well diluted. It should not be used in cases where we have gastric disturbances.

Röntgen rays seem to have helped in many cases. Others have shown great improvement by the use of asthma cigarettes made from leaves of belladonna or stromonium, or from nitre paper. Inhalation of oxygen in other cases seemed to help.

After convalescence is well established then it is time to resort to the methods described under diet, hygiene, and climate. There is no one treatment that can be used in this disease and the best results are obtained by careful observation of each individual case.

Dr. Maurice Schneck, of New York, writes:

The treatment of asthma resolves itself into: 1. Prophylactic; 2, actual.

1. *Prophylactic.* Knowing that the factors which enter into the etiology of the paroxysm are a vulnerable mucous membrane, a highly sensitive nervous system, and an external irritant, it is proper to inquire into the family history of the patient. By studying the case in this light only can we come on the right track of the etiology or predisposing factor in this particular patient. The facts of the history may reveal an inherited taint of a highly sensitive nervous system, which manifests itself later in life in the acquisition of an asthmatic tendency. It is well, therefore, in such families to begin treatment of their members in the stage of adolescence by placing the infant under proper hygienic surroundings, thereby avoiding and checking at the proper time any tendency toward asthmatic attacks. To be successful the physician must study the case from its earliest childhood, study the history of all members of the family, thus keeping track of any one member who shows at the earliest exposure manifestations of asthmatic attacks.

2. The object of the *actual* treatment is twofold, to prevent recurrent attacks during the intervals, and to combat the attacks when present. To meet the first indication, the treatment should be directed to the etiology of the disease, and considering that indiscretion in diet, climatic influences, and a morbid respiratory tract are often instrumental in causing this affection, the first step should be to remove the underlying causes. As a preliminary measure, it is necessary and most important to select the proper food. Indiscretion in eating is a frequent cause of an asthmatic attack. This is probably due to a reflex irritation stimulating the vagus terminals or an auto-intoxication. The diet should be light, easily digestible, and as little bulky as possible. In some milk diet disagrees, the raw odor may be the factor, and boiling and mixing it with cereal may overcome the predisposition. If meat or some particular kind of meat as chicken, steak, or beef is the causal factor, it is necessary to find out by patient endurance what meat and form of cooking or preparing it agrees with the patient, and eliminate the undesirable foods.

Various odors, as of oats, straw, horses, etc., may bring on an attack. Odors of certain drugs, even such as are indicated in the treatment of this disease, may excite an attack, therefore even the medication and its effects must be adopted after studying the behavior of the patient.

The climate must be chosen to suit the peculiarities of the patient. For one who is able, a trip to Europe for a month or six weeks, even a voyage across the ocean and back, is often sufficient to prevent any recurrent attacks. For those unable, an equable climate is indicated where the weather is

regular all year. Inland may prove advantageous to some, the seashore to others.

Stimulants, as coffee, tea, or alcohol should be discouraged, especially for marked neurotic individuals.

The patient should receive a careful physical examination, including an examination of the nose and throat, by a specialist; the presence of polypi, nasal spurs, chronic rhinitis, or any obstruction that may cause congestion of the upper air passages should be corrected. A clinical examination of the urine and feces may reveal some clue toward the exciting cause or irritant in the causation of the attack.

As to drugs, potassium iodide has proved to be the most useful in this disease. It is best given in five to ten grain doses three times a day, well diluted, one hour after meals, as it deranges the stomach. Arsenic in the form of Fowler's solution, from two to three drops, helps and may advantageously be combined. The use of *grindelia robusta* has undoubtedly great power to prevent a recurrence or arrest a paroxysm. The following prescription used has proved efficient:

℞ Morphine sulphatis,	gr. i;
Potassii iodidi, .....	.5ii;
Tinctura potassii arsenitis,	℥ii;
Fluidextracti grindelie robustae, .....	.5i;
Mucilaginis acaciae, .....	.5vi;
Aqua, q. s. ad .....	.3iii.

M. Sig.: Teaspoonful three times a day one hour after meals.

To relieve the paroxysm is the most pressing duty. Numerous drugs have been used in the way of combating the paroxysm of asthma, and none of them superseded in action and none were as effective as a hypodermic injection of morphine, grain one eighth to one quarter. In the feeble or neurotic men or women great care should be taken not to develop a habit. This should always be combined with atropine, grain 1/100, the action of which is a depressing influence on the terminals of the vagus, the diminution of bronchial secretion, and reflex excitability. A dose of chloral hydrate is equally effective. The best results are obtained from a combination of the two remedies, morphine hypodermically and chloral hydrate by mouth, or, to avoid irritation, by rectum, but in smaller quantities than when administered separately.

A pearl of amyl valerianate or nitrite, broken in a napkin or absorbent cotton and inhaled; or from three to five drops of a fresh solution similarly administered, may bring about temporary relief. Inhalation of a few drops of chloroform sometimes shortens the attack.

Much relief is afforded by the fumes of stramonium or other antispasmodics; some asthmatics often depend on fumigation to the exclusion of all other remedies. Special attention should be paid to the bowels; a calomel purge is always indicated.

To summarize, the general treatment of bronchial asthma is dependent upon the regulation of a suitable diet, proper hygienic surroundings, the removal of external factors, such as foul odors, emanations from animals, etc. the correction and treatment of abnormalities of the respiratory tract, and morbid changes of all internal organs.

Therapeutical Notes.

Treatment of Intermittent Facial Herpes.—

Poutier, in the *Medical Press and Circular* for July 6, 1912, is credited with the statement that this affection, most frequently observed in children or adolescents, generally has its seat in the centre of the cheek and oftener on the left than on the right side. The eruption develops during the night, and in the morning a red patch is seen, which soon becomes covered with vesicles. In the treatment, nothing heroic should be tried, as spontaneous recovery takes place in most cases. Prevention of local infection is, however, advisable in order to avoid a possible cicatrix. A warm lotion of chamomile flowers may be applied twice or three times a day, and at night a sedative ointment such as the following:

R Ichthyol, 15 grains;
Zinc oxide, 1 drachm;
Hydrated wool fat, } of each 4 drachms.
Petrolatum, }
M. ft. unguentum.

In the intervals between eruptions the seat of predilection may be rubbed with spirit of camphor.

Guillotine versus Enucleation in Removal of the Tonsils.—

Harold Barwell, discussing this point in a letter to the *Lancet* for September 7, 1912, asserts that a large majority of tonsils can be completely removed in their capsules, and including the supratonsillar fossa, with the guillotine, sometimes in one bite and at others with a second application of the instrument. This is true of practically all cases of simple enlargement in children; and even imbedded tonsils can be entirely shelled out by this method, provided the deep portion is not very adherent, a point which can be determined by making the patient gag or by retracting the anterior pillar with a probe. The tonsils which cannot be efficiently treated with the guillotine and which should be enucleated, are those surrounded by dense adhesions, and especially those small, friable tonsils which are the seat of chronic follicular tonsillitis and full of caseous secretion. These are not the easiest cases in which to enucleate, but the author is strongly against employing this operation as the routine method of removing enlarged tonsils in children, owing to the depth of anesthesia required and the danger arising consequently from hemorrhage.

Treatment of Verruæ plantares.—R. L. Sutton, in the *American Journal of the Medical Sciences* for July, 1912, states that treatment of these lesions with carbon dioxide snow, either alone or in combination with the use of other caustics—such as trichloroacetic acid—and the x rays, is fully as effective as the older methods of excision or destruction by electrolysis or the actual cautery, and from the patient's viewpoint, is much to be preferred. In treating plantar warts, the author first removes the outer layers of thickened epidermis with a sharp spoon, prescribes a twenty per cent. salicylic plaster, to be renewed twice daily, and finally freezes the growth with the snow as deeply as possible. In one patient, in order to accelerate matters, the cavity was in addition rapidly but vigorously swabbed out with pure trichloroacetic acid.

followed by an alkali. In view of Pusey's suggestion that freezing be preceded by a dose of the x rays in the treatment of certain varieties of nævi, and because of the occasionally beneficial action of the rays in causing disappearance of warts when used alone, Sutton believes that this measure might also be resorted to with advantage in plantar warts.

Treatment of Chronic Cystitis.—Thoraton, in *Paris médical* for June 22, 1912, is credited with the following formulas for use in chronic cystitis:

R Acidi benzoici, 2 grammes;
Glycerini, 5 grammes;
Acaciae, 8 grammes;
Syrupi, 30 grammes;
Aque destillatæ, 120 grammes.
M. ft. solutio. Sig.: The whole of this is to be taken within two days in tablespoonful doses.

R Quininae sulphatis, 1 gramme;
Aque destillatæ, 300 grammes.
M. ft. solutio. Sig.: This is to be used as a bladder injection. One third of it is to be used at a time, preceded by an injection of 100 grammes of tepid water.

Treatment of Gastric Burns Due to Ingestion of Acids.

Delore, in *Lyon médical* for August 4, 1912, discusses this question from the surgical standpoint. From a study of the cases already reported, as well as of several personal ones, he concludes that immediate operation is only exceptionally advisable. In the succeeding days, however, intervention should be practised at once when signs of necrosis of the gastric wall and oncoming peritonitis are noted, viz., accelerated pulse, fever, rigidity, and vomiting of blood. If a perforation is found, suture is indicated. If there is a large necrotic area, gastrectomy is the ideal procedure; but since it is often contraindicated by the patient's general condition, pylorostomy, duodenostomy, or jejunostomy may have to be substituted. Jejunostomy is formally indicated where the necrotic changes are not such as to threaten the integrity of the stomach wall, as it permits of proper alimentation and facilitates healing of the lesions by giving the stomach rest.

Often the surgeon is not called to these cases until late, when the patient either is suffering from persistent, complete gastric intolerance or presents symptoms of pyloric stenosis in association with a small and contracted or a dilated stomach. Where the organ is shrivelled and thickened through cicatricial contraction, gastroenterostomy is both difficult of performance and frequently inefficacious, vomiting continuing and emaciation progressing until jejunostomy becomes imperative. Preliminary jejunostomy is therefore considered generally preferable by Delore; later, gastroenterostomy can be done with much better chances of success, owing to the beneficial influence of temporary functional rest on the stomach. In the other class of cases, where the organ is dilated owing to cicatricial changes near the pylorus, gastroenterostomy is much more easily performed and gives excellent results.

Treatment of Intestinal Paresis after Abdominal Section.

—E. Stanmore Bishop, in the *Practitioner* for July, 1912, after referring to the value of pituitary extract and continuous saline proctocolysis, both in overcoming shock or collapse and in exciting peristalsis, states that, in addition to these, he relies chiefly upon calomel and turpentine in the treat-

ment of intestinal paresis. He gives calomel in one grain doses every hour for six hours by the mouth, followed by a simple soap and water enema, and this is ordinarily sufficient. Should there be no result, however, such as the passage of flatus, which affords evidence of peristalsis, an enema of the following composition is given two hours later:

R Turpentine, ½ ounce;
Magnesium sulphate, (..... of each 1 ounce;
Glycerin,)
Soap and water, enough to make 1½ pint.

M.

It is always well to try the simple enema first, since, in simple cases, the turpentine enema may produce diarrhea.

Treatment of Ovarian Disturbances.—A. S. Jaeger, in the *Therapeutic Gazette* for July, 1912, reports results obtained with extract of corpora lutea in a series of fifty-one cases. In each instance the remedy was given in five grain capsules, three times daily. In a first group of cases, consisting of eleven single ovariectomies in which symptoms of deficient ovarian function appeared, these symptoms were entirely relieved in six instances; two patients showed improvement and three apparently no effect. In a second group, comprising nine double ovariectomies, there was disappearance of all symptoms in four patients, improvement in two, no effect in one, and aggravation in two, the drug being discontinued because of tachycardia. In a third group, consisting of fourteen cases of menopause, the symptoms disappeared within three weeks to five months in six cases; two other patients showed marked improvement, and six were not noticeably benefited. The remaining group, including seventeen cases of ovarian disease of various types, in the majority of which operation, though indicated, was refused, showed good results in five instances, three of which were of simple oophoritis; two other cases were slightly improved, and ten negative.

A few days after beginning the ingestion of corpora lutea, each patient showed a more or less marked vascular stimulation, which later usually disappeared after tolerance had become established. In about one third of the cases the pulse rate rose from 80 or 90 to 110 or more, up to 132. In most instances there was an improvement in the general condition, e. g. in appetite, sleep, etc., though this may have been due to the constitutional treatment simultaneously given.

Treatment of Congenital Clubfoot.—André Rendu, in *Lyon médical* for July 7, 1912, describes his experiences with Finck's method of treating congenital clubfoot, which consists of obtaining correction as soon as possible after birth by repeated massage without anesthesia, and maintaining it temporarily with a bandage, then with an elastic traction apparatus. The massage is given daily, and must be progressed with gradually, no attempt being made to obtain full correction at the first sitting. The adduction should be the chief point of attack at first, then the supination, and finally the equinus. Care should be taken not to cause an epiphyseal separation at the lower end of the tibia or a fracture. After about twelve sittings, hypercorrection will often have been attained; if not, an open operation will probably be necessary. The

correction obtained at each sitting is maintained by a flannel bandage passing under the sole of the foot, anteriorly and posteriorly, then upward along the external aspect of the limb to the head of the fibula, where it is secured by circular turns. The toes should be carefully watched, in order to detect and avoid obstruction to the limb circulation.

When full correction has been obtained and the foot will stay in good position without support, a period of rest is begun. After the last massage the customary flannel bandage is covered with a roller of tarlatan, previously slightly moistened. The resulting somewhat rigid dressing is allowed to remain a week, when it is removed in order to make sure of the good position of the parts, then re-applied and left for another week. The final step consists in removal of all bandages and the application of a supporting apparatus consisting of an elastic belt around the waist, and a band of rubber extending from it down to the knee, where it is secured and divides into three parts. These, in turn, are attached to a leather sole beneath the foot, the anterior one near the middle of the inner border of the foot, the next near the head of the fifth metatarsal bone, and the posterior one on the outer aspect of the heel. The tension of the several bands is so regulated as to maintain the foot, when at rest, in a position of slight overcorrection without, however, preventing voluntary motion in various directions. The apparatus should, as a rule, be left on constantly for a month, removed for two or three hours daily in the second month, worn at night only in the third, and discarded finally about the sixth.

The earlier in life the massage is begun, the better the result to be expected. In infants over two months old, surgical intervention will usually alone give satisfaction. Below that age fifty per cent. of cases can be permanently cured by the method described.

Vaccine Therapy in Appendicitis.—W. W. Crawford, in the *Southern Medical Journal* for June, 1912, recommends the administration of colon bacillus and streptococcus vaccines in acute appendicitis, in conjunction with the customary operative treatment. The patient's resistance and opsonic power being at a minimum on the third or fourth day of the disease, the early use of a vaccine,—e. g. 50,000,000 dead colon bacilli on the first day, 100,000,000 on the second, 200,000,000 on the third, and 400,000,000 on the fourth—is likely to be followed by gratifying results. Many of the author's cases, with a tumor, leucocytosis, fever, etc., either passed rapidly into the "cold" stage, where simple drainage, or drainage with appendicectomy, became possible without the dangers usually attending the latter procedure, or, when the amount of pus was small, had an uneventful convalescence without drainage. While appendicitis is in its last analysis strictly a surgical disease, a majority of the cases presenting themselves after the conventional twenty-four hour period will show benefit from vaccines in proper dose. In acute perforative appendicitis, if the patient is operated upon early, liberal doses of vaccine are of assistance, though where he is already overwhelmed with toxins they may be detrimental.

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CHARLES E. DE M. SAJOUS, M. D., LL. D.,
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LATE POISONING IN CHLOROFORM ANESTHESIA.

Chloroform has increasingly asserted itself as a dangerous anesthetic. Second only in importance to the suddenness with which it may cause cardiac arrest during anesthesia is its tendency to produce tardy intoxication. Formerly attributed to the operation and to the condition which rendered the latter necessary, since it may appear from twelve hours to six days after the operative procedure, this condition is all the more distressing in that it also develops with comparative suddenness, often when the patient is thought to be entirely out of danger. Fortunately its symptom complex is now generally recognized. This has doubtless entailed an increased use of ether, which, notwithstanding its own drawbacks, especially ether pneumonia, has sustained its reputation as a far safer anesthetic.

Prophylactic measures for the benefit of those who still prefer chloroform, are also being sought. As is well known, the danger of causing the development of late chloroform poisoning increases with the amount of the drug employed and with the duration of the anesthesia. This led Bevan and Favill to urge, some years ago, that every effort be made to shorten the length of the operation and that any

time consuming preparation be made before, and not during anesthesia. Another feature of great practical importance is the early elimination of the chloroform from the tissues. This is precisely what the prolonged use of the anesthetic prevents, the lesions produced being due to cumulation of the poison in, and its protracted contact with the hepatic and other tissue cells. Noël Paton and Lindsay, having found that the rate of elimination was improved in rabbits by free ventilation and exercise, G. Herbert Clark (*Glasgow Medical Journal*, July 19, 1912) emphasized the importance of not letting the patient "sleep off" the anesthetic, as is customary.

All this suggests, from our viewpoint, an additional prophylactic measure which may prove serviceable, viz., that of causing the patient, wherever practicable, as soon as he is sufficiently awake, to breathe deeply, that is to say, to inhale and exhale freely for a few minutes so as to cause the rapid removal of what chloroform is brought to the air cells by the blood for elimination. This enforced ventilation—conducted with due prudence in view of the presence of an operative wound—should tend greatly to hasten the expulsion of the anesthetic from the exposed tissues, since, as has been repeatedly shown, it is transported to and from them by the blood plasma and its cellular elements, while the blood accomplishes a complete circuit of the body in twenty-six seconds.

This applies also to ether which, though very rarely compared to chloroform, has likewise caused tardy intoxication.

GALTON AND EUGENICS.

Among many interesting statements recently made concerning eugenics before the American Public Health Association at Washington, the following is reported: "Those who started this movement selected themselves as the only ones to be endowed with the right of racial propagation, and as the only ones to be bowed down to in the community." The one who really started the present science of eugenics was Galton, who was much too diffident and altruistic a man to arrogate to himself any superiority over others less fortunate; but his very unusual endowments, both ancestral and personal, prompted his hope for the enjoyments of blessings of a like kind by the generations that would follow his. One may easily comprehend the enthusiasm with which Galton originated and fostered throughout his life the science of eugenics; for in his own person he almost ideally exemplified its principles. He was himself eugenized, not only in the titled sense, but as regards an aristocracy of

Nature. He was the cousin of Charles Darwin (the son of Robert, and the grandson of Erasmus, a thinker perhaps profounder even than the author of the evolution theory). The Galtons were a superb Quaker stock through many generations, back at least to "Barclay the apologist." His grandmother Darwin died at eighty-five years, his mother at ninety-six, the eldest brother at eighty-nine, one sister at ninety-three, and another at ninety-six. "My surviving brother," he wrote in his *Memoirs*, "is ninety-three and in good health. My own age is now eighty-six, but may possibly be prolonged another year or so." (He died a year or two after publishing this.) "I find old age thus far to be a very happy time on the condition of submitting frankly to its many limitations. . . . I acknowledge the debt to my progenitors of a considerable taste for science, for poetry, and statistics; also a rather unusual power of enduring fatigue without harmful results." Galton, moreover, informed the world of an astonishing number of talented relatives continuing to the present generation—that is, of his grandchildren. Again, he was most fortunate in his marriage into a family hardly less remarkable than his own—the Butlers; so that his attention was turned quite naturally to the relation of heredity to eugenics, which became the subject of at least four of his 183 books and memoirs. He observed, with a delicious naïveté that permeated his writings: "I protest against the opinions of those sentimental people who think that marriage concerns only the two principals." No doubt Galton wrote this some considerable time after the wedding ceremony. Through the Butlers (as in his own family) his lines were cast in most unusually pleasant places—among all that was best in English intellectual and social life. And his father bequeathed him a fortune ample for all his needs.

Thus, in his environment as in his heredity, was Galton ever blessed; and he indeed invited his contemporaries to consider how his development in every respect had been influenced by the happy circumstances in which he was placed. His associations were always with men of ability and culture—with the best minds of his time: Maine, Faraday, Key, Hallam, Tom Taylor, Tom Hughes, the Darwins, Bowman, Spencer, Huxley, Burton, Pollock, and scores of others. No wonder this most kindly man was enthusiastic to perpetuate so Olympian a status, to call into existence races of highly gifted artists, saints, mathematicians, administrators, mechanicians, and the like.

Thus Galton's most laudable enthusiasm in behalf of good birth is comprehensible. But it must be emphasized that the vast majority of mankind are not nearly so well or so fortunately conditioned as

he was to realize eugenics. In order to be well born (in the natural sense) the absolute essentials are faultless heredity, ideal environment, and normal function; upon these three hang all the possibilities of ideal birth and ideal existence, which, lacking any of them, are impossible of attainment. Until this biological triad becomes universally realized, there must ever remain an aristocracy of eugenics, in which only a very small minority of humankind can find place. The heredity of many is now so vicious, the environment of the vast majority is so uncongenial, and the diseases impairing function are so numerous, that only a moiety can in themselves demonstrate, as did Galton, the literal meaning of the term eugenics. The most the rest of humankind can hope for is the "negative eugenics" or elimination of the unfit.

THE TRANSMISSION OF POLIOMYELITIS BY *STOMOXYS CALCITRANS*.

In our issue for October 5, 1912, reference was made to the announcement by Professor M. J. Rosenau at the International Congress on Hygiene and Demography, concerning the successful transmission of poliomyelitis by means of the common stable fly (*Stomoxys calcitrans*). Rosenau's announcement was in the form of a preliminary report made before the experiments had been worked out in detail because of the apparent great importance of the findings.

In the discussion which followed the report the point was repeatedly brought out that, even if poliomyelitis is transmitted by the stomoxys, this does not preclude the possibility of its being also transmitted in other ways, and it was apparent that some held strongly to the belief that in all probability the usual means of spread was not by the stable fly. This attitude is undoubtedly proper to avoid drawing premature conclusions not based on demonstrated facts; showing that a disease may be spread in one way by no means proves that it cannot be spread also in other ways, nor that the one way is the usual one. It must be borne in mind, however, that when it was demonstrated that malaria could be, and was frequently transmitted by mosquitoes, many able workers believed the mosquito could be only 'one of the means of infection. The same belief was strong in the minds of many conservative thinkers in regard to the relation of the mosquito to the yellow fever. In both malaria and yellow fever, however, ever since the possibility of their transmission by the mosquito was first demonstrated, work, experience, and practice have all tended to show that the only means by which these

diseases are ever spread is the mosquito, and, in view of the corroboration of Rosenau's findings by Anderson and Frost,¹ while it may be premature to conclude that the bite of the stomoxys is the only way in which poliomyelitis is or can be spread, it should be borne in mind that it is probable that it is the usual, and even the only means. The work of Rosenau was prompted by the epidemiological findings of the Massachusetts State board of health in their detailed and painstaking study of the cases of infantile paralysis reported in that commonwealth. The study of the circumstances and conditions under which cases occurred in Massachusetts during the past five years, pointed to the advisability of definitely ascertaining whether the stomoxys was capable of transmitting the disease.

In their experiments which resulted in the confirmation of Rosenau's work, Anderson and Frost repeated as nearly as possible all the conditions of the experiments carried on by the former. Several hundred stomoxys were daily allowed to bite monkeys previously infected with poliomyelitis by intracerebral inoculation. These same flies were also allowed to bite daily three fresh uninfected monkeys. In the monkeys typical symptoms of poliomyelitis developed, seven, eight, and nine days respectively, after the first exposure to the bites of the flies.

Rosenau was of the opinion at the time of his original announcement that some time elapses after the fly bites an infected animal before it is able to transmit the disease, that is, that the virus undergoes an incubation period in the fly similar to that of yellow fever in the mosquito. If there is such an incubation period it seems to be not longer than seven days and is possibly considerably shorter, as in one of Anderson and Frost's monkeys symptoms developed on the seventh day after the flies had first bitten infected animals.

THE PLAGUE SITUATION.

That the plague situation is still serious is shown by the statements published in the *Public Health Reports* for October 25, 1912. We note that plague is prevalent in the Philippine Islands, where, in Manila, up to August 31st, for the past three months, seven cases were reported, while in Iloilo four cases of plague occurred during the two weeks ending September 7th, seven cases since July 5th. De-ratization measures are carried out carefully in the infected areas, and an outgoing quarantine has been established to prevent the disease being carried to other places. From Porto Rico we hear that the last infected rodent was found at Arcibo on October 15th, while the last case in man occurred at San Juan on September 11th. From Hamburg

the announcement was received that two cases of plague had been found on the steamship *Bellaisla*, which had sailed from Rosario, Argentina, stopping en route at the Cape Verde Islands. At Hamburg the vessel was unloaded in midstream and sailed thence to England, entering the river Tyne on September 10th, when a boy on the vessel was taken ill, removed to the hospital, and died six days later. No further cases have been reported from the vessel. Plague is also prevalent in Russia, where fifty-five cases were reported with forty-one deaths in the government of Astrakhan between July 4th and September 8th. Fifteen physicians have been sent to assist in the control of the disease, which is still present there and in the province of Uralsk. There have been also rumors for some time in shipping circles that the Azores had an epidemic, but the first official news about the situation was received during September, when eight cases were reported to have occurred at Terzira. The Dutch East Indies are also attacked, the reports giving seventy-two cases and sixty-eight deaths from April 7th to August 3d.

THE APPENDIX ON THE LEFT SIDE.

At the twenty-fifth French congress in surgery held in Paris early in October last, several surgeons reported cases in which they had found the appendix vermiformis occupying the left side of the abdomen. According to the report in *Semaine médicale* for October 16, 1912, details are not forthcoming regarding the situs of other organs. Walther cited three cases in his experience; in one there was a properly placed cecum without any appendix, in a second a small intestine only was found on the right side, both cecum and appendix being on the left, in the third there was a left sided appendix without any trace of cecum. Baumgartner, of Paris, had one case of arrested development, in which radiology confirmed the diagnosis of left sided appendix. Cazin had had experiences similar to those of Walther in finding the appendix on the left side, although the pains complained of were located by the patients on the right.

THE RULE OF THE ROAD.

In the *British Medical Journal* for October 19, 1912, there is an editorial discussion of the rule of the road, whereby vehicles in Great Britain keep to the left when meeting. The explanations given are ingenious and possibly correct, but the writer is in error in attributing observance of this rule to the United States and Canada, where exactly the opposite custom obtains. We may have inherited a practice of the aborigines, to whom it would have been advisable to pass on the right in order to have free use of the bow and arrow, although there must obviously be other explanations of why drivers pass to the right in France, Belgium, Germany, and Holland. We do not recall any companies of mounted archers.

¹*Public Health Reports*, October 25, 1912, p. 1733.

POISONING FROM EASTER EGGS.

Bonn, of Lille, at a recent meeting of the Société de médecine légale, of Paris, brought to the attention of the members a case of poisoning from the sweetmeats known as Easter eggs, a child who had indulged in them having quickly succumbed with choleraic symptoms. As reported in *Presse médicale* for October 19, 1912, Bonn stated that at autopsy the child's stomach and intestine were found to be covered with brownish discolorations similar to those observed in cases of poisoning with cream cakes, where it is known to be due to decomposition of the white of egg which gives rise to certain very toxic products, fatal in minute doses. Both the sugar paste of which the Easter eggs in question were composed and the coloring matter with which they were overlaid contained white of egg.

Medical Law.

I. THE RIGHT TO PRACTISE MEDICINE AND SURGERY.

In the case of State vs. Peters 123 Pacific Reports 751, the defendant, who had been convicted of practising medicine without a license, appealed to the Supreme Court of Kansas, contending that he was not engaged in the practice of medicine and surgery or osteopathy, but was only practising a religious belief.

The statute under which he was convicted provides: "Any person shall be regarded as practising medicine and surgery within the meaning of this act who shall prescribe, or who shall recommend for a fee, for like use, any drug or medicine or perform any surgical operation of whatsoever nature for the cure or relief of any wounds, fracture, or bodily injury, infirmity, or disease of another person, . . . or any person representing or advertising himself by any means or through any medium whatsoever, or in any manner whatsoever, so as to indicate he is authorized to or does practise medicine or surgery in this State, or that he is authorized to or does treat the sick or others afflicted with bodily infirmities, but nothing in this act shall be construed as interfering with any religious beliefs in the treatment of diseases; provided, that quarantine regulations relating to contagious diseases are not infringed upon. All persons who practise osteopathy shall be registered and licensed as doctors of osteopathy, as hereinbefore provided, but they shall not administer drugs or medicine of any kind nor perform operations in surgery."

The defendant issued circulars as follows:

RESULTS OF SUGGESTIVE THERAPEUTIC METHODS.

I treat all diseases, acute and chronic, without the use of drugs. Though your case may have been declared hopeless, you may still be able to obtain good results, or a permanent cure, from our treatment. Yours very respectfully.

He testified regarding his practice as follows:

First had my attention called to healing people about twenty-five years ago from the study of the Bible. I supplemented that study by different branches. I have religious beliefs as to healing. I believe that the words of Jesus Christ in regard to the healing can be carried out

now just the same as they ever could. I believe from my study of the Bible and my supplemental study that I can carry out to some extent the healing as by Him practised. My conviction is that I can do the work and ought to do it, and this has been my belief during the past three years; and it is my conviction that it is a duty I owe, and must perform it. My supplemental studies have been psychology and suggestive therapeutics. I have studied the Weltmer system of suggestive therapeutics.

The president of the Weltmer Institute testified:

The fundamental principle in suggestive therapeutics is that the movement of the mind is the remedy in healing. Mind is both finite and infinite intelligence, which governs all physical and mental actions, conscious and unconscious. Thinking is the mind's mode of action. Then thought is a movement of the mind. Whatever other method is used is for the purpose of starting the mind of the patient into a state of activity, in which the vibrations of his own mind will change the cell vibrations of his body. A movement of the mind that would have in it the constructive idea of replacing diseased tissue with healthy tissue would be a therapeutic thought. Anything that will induce this subjective intelligence to begin the process of healing is a therapeutic suggestion. Anything from the outside world that would secure a response from the suggestive mind would be a suggestion.

Witnesses were also introduced who testified that the system of suggestive therapeutics does not involve the practising of medicine or surgery.

The defendant admitted that he kept accounts with people who came to be treated.

The prosecution introduced as a witness one of defendant's patients who testified as follows:

I went to him, and I says to him, "I am pretty bad; I am feeling awful bad." And I says to him, "Do you think you can do me any good?" And he looked at me, felt my head, my forehead and temples, and the back of my neck, and said he could. I says: "If you can help me, that is what I came for. Get right at it." And so he went in the other room, where he treats his patients, and he gave me the treatment. He first commenced to rub my forehead around this way (indicating), rubbed my temples and the back of my neck, and then way down the body over my kidneys and hips, and he says, "You are threatened with typhoid fever," and he says, "I think I can break that up in about three days," and before the end of the three days I didn't feel any symptoms of the fever. I told him I felt pretty sick for a week or ten days, and had no appetite. That was just the way of it. Q. Did you pay him for this treatment? A. Yes, sir. Q. Did you ask him anything about what he was doing there? How his business was? A. Asked him what he was doing. Q. What did he say? A. He didn't say anything, only gave me the treatment. Q. Did you see any circulars in there at that time? A. Not at that time. Q. Before that? A. No, sir. Q. Did you get any circulars at that time? A. I did after this. I was there one day, and he handed me one of those little circulars. Q. What time was that? A. Well, I couldn't state just exactly what date that was. It was a few days after I took the first treatment, probably a week or so such a matter. Q. Do you belong to any church? A. No, sir. Q. Was this treatment you took a matter of religious belief? A. Kinder borders on the religion. Q. What religion was it? A. Well, it is a good kind, if there is any. . . . I don't remember whether that was all that was said or not. Before I commenced taking treatments, he said I had a complication of diseases; that I had stomach trouble, but I knew that before he told me; also that I had kidney trouble and also rheumatism. Had rheumatism for several years, off and on. Q. What else did he say? A. He said he could help me. Q. When he passed his hands over you? A. He rubbed me all the time. Q. Wasn't just passing his hands over you as a minister of the gospel, was he? A. Rubbed my hands and back and shoulders. Q. Did you go to him as a minister of the gospel? A. No, sir.

Another witness introduced by the prosecution testified:

I had a cough, and have had it for years. He (appel-

lant) says, "I can cure that." "No," I says, "you can't." He says: "Yes; I can. I am prepared; I am qualified. I have got a license to cure it." And that was about all the conversation we had. About all him and me had about it. We had several conversations about his patients. And he said he was getting along splendidly, and told me of the twelve or sixteen patients he had. But this was prior to the time he offered to cure me for my cough. Q. In this conversation in November, 1910, when he talked about having a license, did he talk to you about the gospel of Jesus Christ? A. No, sir; nothing said to me about that.

The Supreme Court found no difficulty in determining, under the evidence, that defendant was not merely practising a religious belief, but was practising in conflict with the statute. Mr. Justice Benson, expressing the views of the Court on this question, said:

The claim of the appellant that he only practised a religious belief within the exception, which declares that nothing in the act be construed to interfere with any religious beliefs in the treatment of diseases, cannot be sustained. The only basis for this claim is the appellant's testimony that he had believed the words of Jesus in regard to healing; that from Bible study and supplemental study of psychology and suggestive therapeutics he believes that he can carry out this healing practice to some extent; and that it is his duty to do so. Still the fact remains uncontradicted that he diagnosed diseases and treated patients in a matter of fact way by manipulations and rubbing. He was thus treating people as a business, for compensation, by outward physical means, and was not engaged merely in a religious observance, or, as counsel say, "practising a religious belief." The place and value of suggestions in the treatment of diseases need not be discussed; for, apart from this, the appellant engaged in the practice requiring an examination and certificate under the statute.

What particular services or practices are within the exception need not be discussed. It is sufficient to say that in this case the evidence fails to show that the appellant is exempt from the operation of the statute.

News Items.

Change of Address.—Dr. Paul L. Hebert, of London, England, to 331 West Fifty-eighth Street.

No Smallpox in Pittsburgh.—A proclamation was issued on October 25th by the Mayor of Pittsburgh stating that the city was free from smallpox, an outbreak of which in certain sections of the city had caused anxiety for several weeks.

Binghamton Academy of Medicine.—The following officers were elected at the annual meeting of this academy, held on the evening of October 22d: President, Dr. G. S. Lape; vice-president, Dr. J. C. Lappeus; secretary, Dr. Stuart Blakely; treasurer, Dr. P. H. Shaw.

Southwest Iowa Medical Society.—At the annual meeting of this society, held in Creston on October 18th, Dr. T. M. Bennett, of Lenox, was elected president; Dr. J. A. Harper, of Greenfield, vice-president; Dr. R. E. Green, of Creston, second vice-president; and Dr. Enos Mitchell, of Weldon, reelected secretary and treasurer.

Cholera Spreading in China.—According to Public Health Reports, dated October 25th, cholera is spreading in China, and the disease has appeared in a number of important ports, among which are Amoy, Hoihow, Nanking, Shanghai, and Swatow. At Shanghai the outbreak has involved the foreign population.

Boston Health Department Receives Diplomas of Merit for Exhibit at Congress of Hygiene.—The jury of awards on the part of the recent International Congress of Hygiene and Demography, held in Washington, has notified the Boston Health Department that its exhibit had been awarded three diplomas of merit, in the sections of Child Hygiene, Food Inspection, and Communicable Diseases.

Madison County Medical Society.—Dr. H. H. Wilson, of Stockbridge, was elected president of the Medical Society of the County of Madison, N. Y., at the recent annual meeting of the organization held in Oneida. Other officers elected were: Dr. J. S. Wilson, of Oneida, vice-president; Dr. George W. Miles, secretary; Dr. E. P. Bailey, treasurer, and Dr. William Taylor, Dr. J. R. Eaton, and Dr. C. H. Perry, censors.

New Rochelle Medical Society.—This society held its first meeting of the season on the evening of October 14th, at the residence of Dr. Charles Ogilvy. Twenty-five physicians were present, and the principal business of the evening was the election of officers for the ensuing year. The new officers are: Dr. Charles Ogilvy, president; Dr. Eugene T. Morrison, vice-president; Dr. Orville H. Schiel, secretary; Dr. Clifford H. Fultin was elected to membership.

An Endowment Fund for Jamaica Hospital.—A campaign for raising \$50,000 for the Jamaica Hospital, to be used as an endowment fund, will begin on November 7th and last for twelve days. The plans for the campaign are nearing completion, and the committees are much pleased with the showing so far. The territory which the hospital covers is the entire Fourth Ward, from Queens to Woodhaven, and the residents of every section will be called upon to contribute.

A New Hospital for the Bronx.—Arrangements are being made for the erection of a new hospital in the Tremont section of the Bronx. A site has been purchased and plans for the new structure have been prepared. There will be two hundred free beds in the new institution, and the estimated cost of the ground, building, and equipment is over \$350,000. To raise the necessary money with which to erect and equip the proposed hospital, an industrial exposition will be held in the New Grand Central Palace, December 11th to 19th.

Clinical Lectures on Genitourinary Diseases.—On Monday evening, November 4th, Dr. Frederic Bierhoff will begin a series of clinical lectures and demonstrations upon genitourinary and venereal diseases, with particular reference to the more modern methods of diagnosis and treatment. These lectures will be given every Monday evening, at 8:30 o'clock, for about three months, at the West Side German Dispensary, 328 West Forty-second Street, and will be free to all members of the medical profession and to advanced students of medicine.

A Campaign against Unnecessary Noise in Baltimore.—An Antinoise Committee was organized in Baltimore on the evening of October 21st, at the home of Dr. William T. Watson, who was made chairman, with Dr. Henry Lee Smith as secretary and Dr. John Staige Davis the third member. The committee has agreed to ask every resident of the city who is annoyed in any manner by a noise to set the complaint down on paper, stating the location, time, cause, and any other information that may be of assistance, and an investigation will be made in each case.

Indiana State Medical Association.—Dr. A. C. Kimberlin, of Indianapolis, was elected president of the Indiana State Medical Association, at its recent annual meeting, held in Indianapolis. Other officers elected were as follows: Dr. J. Guy Hoover, of Boonville, first vice-president; Dr. U. G. Poland, of Muncie, second vice-president; Dr. J. P. Ward, of Vevay, third vice-president; Dr. C. N. Combs, of Terre Haute, reelected secretary; Dr. D. W. Stevenson, of Richmond, treasurer. The association will meet next year at West Baden, on September 25th and 26th.

Dedication of the Lane Medical Library.—The board of trustees of the Leland Stanford Junior University has issued invitations for the dedication of the Lane Medical Library of the university, which will take place on Sunday, November 3d, in San Francisco. The programme for the opening exercises is as follows: Opening prayer, by the Rev. Bradford Leavitt; historical review, by Dr. Emmet Rexford; address by the president of the board of trustees, Mr. Timothy Hopkins; address by the president of the university, Dr. David Starr Jordan; benediction, by the Rev. Bradford Leavitt.

Poliomyelitis among the Eskimos.—Passed Assistant Surgeon Krulish, of the Public Health Service, reports the presence of poliomyelitis among the Eskimos of St. Michael and Unalakleet, Alaska. In St. Michael five cases have occurred, with one death, and in Unalakleet ten cases, with two deaths, have been reported. These two villages are forty-five miles apart, and the natives are in constant communication.

New Officers of the Delaware State Medical Society.—At the annual meeting of the Delaware State Medical Society, held in Wilmington on October 8th, officers to serve for the ensuing year were elected as follows: President, Dr. L. A. H. Bishop, of Dover; first vice-president, Dr. A. O. Robin, of Wilmington; second vice-president, Dr. Joseph M. Martin, of Lewes; secretary, Dr. G. W. K. Forrest, of Wilmington; treasurer, Dr. L. C. Rumford, of Wilmington. The meeting next year will be held in Dover.

Protest against the Establishment of a Tuberculosis Hospital at Croton Lake.—The city of New York, through its Water Supply Department, has made a vigorous protest before Dr. E. H. Porter, State Commissioner of Health, against the proposal by Westchester County to build a tuberculosis hospital at Croton Lake. It is contended by the city that such a hospital at Croton Lake would be a menace to the water supply of Manhattan, because two streams which flow through the Griffen farm, the proposed site of the sanatorium, empty into Croton Lake not far from the intake of the new Catskill aqueduct.

Sale of Red Cross Christmas Seals.—The work connected with managing the sale of Red Cross Christmas seals in New York State, outside of the Greater City of New York, has assumed such proportions that separate office room and a special corps of assistants have been found necessary to take care of the details of the sale, which will be conducted this year so that every city, village, and hamlet in New York will be given an opportunity to place the seals on sale. The number and size so far of orders received from local agents indicate that the sale this year will far exceed that of the 1911 season, when over 4,600,000 seals were sold in the State. Eighty-five per cent. of the \$46,000 thus raised was used for antituberculosis work in the locality where the seals were sold.

Civil Service Examination for Mine Surgeon.—The United States Civil Service Commission announces that on November 20th an open competition examination will be held to secure a list of eligible persons from whom to fill a vacancy in the position of mine surgeon in the Bureau of Mines, at a salary ranging from \$2,000 to \$3,000 a year. Applicants must be graduates of a reputable medical college and must have had not less than three years' postgraduate experience in medical and surgical practice about coal mines. Persons who desire to take this examination should apply at once to the United States Civil Service Commission, Washington, D. C., for further information regarding the scope of the examination and for the necessary application blanks.

Personal.—Dr. Harry T. Summersgill, a few months ago appointed superintendent of the New York Postgraduate Hospital, has been offered the position of superintendent of the City Hospital of Cincinnati.

Dr. William Seaman Bainbridge, professor of surgery at the New York Polyclinic Medical School and Hospital, and surgeon to the New York Skin and Cancer Hospital, has been appointed consulting gynecologist to the Ossining Hospital, Ossining, N. Y.

Dr. Charles F. Bevan, who resigned last summer as dean of the College of Physicians and Surgeons, of Baltimore, has been compelled by ill health to resign as professor of surgery in that institution. The faculty has elected him emeritus professor of surgery.

Dr. C. H. Lavinder, of the United States Public Health Service, and in charge of the Marine Hospital at Savannah, Ga., was elected president of the National Association for the Study of Pellagra, at the third annual meeting of the association, held recently in Lynchburg, Va.

Dr. H. D. Holton, who has been secretary of the Vermont State Board of Health for the past twelve years, has resigned, and Dr. C. F. Dalton will assume the duties of the position December 1st.

Dr. Isador C. Goldstein, of Sharon Springs, N. Y., announces the purchase and conversion of the Park House Hotel and Baths at that resort to a high class sanitarium.

Changes in the Medical Faculty of the University of Minnesota.—The following instructors have all been advanced to the rank of assistant professors: Dr. W. P. Larson, bacteriology and pathology; Dr. H. P. Ritchie, surgery; Dr. F. L. Adair, obstetrics and gynecology; Dr. A. S. Hamilton, mental and nervous diseases; Dr. E. S. Strout, ophthalmology and otology; Dr. Henry L. Williams, gynecology; Dr. William A. Hilton, histology and embryology. Dr. Robert B. Gibson has been appointed assistant professor of physiological chemistry, and Dr. Walter E. Camp and Dr. Elmer R. Hoskins have been appointed assistant demonstrators in anatomy.

New York and New England Association of Railway Surgeons.—This association will hold its twenty-second annual meeting in New York on Wednesday, November 13th, with headquarters at the Hotel Astor. There will be two sessions, one in the morning and one in the afternoon. Dr. John B. Murphy, of Chicago, will deliver the Address in Surgery, and sixteen papers on scientific subjects will be read and discussed. The officers of the association are: President, Dr. Walter Lathrop, of Hazleton, Pa.; first vice-president, Dr. John W. LeSeur, of Batavia, N. Y.; second vice-president, Dr. C. A. Pease, of Burlington, Vt.; corresponding secretary, Dr. George Chaffee, of Brooklyn; recording secretary, Dr. J. H. Reid, of Troy, N. Y.; treasurer, Dr. J. K. Stockwell, of Oswego, N. Y. The executive committee consists of officers and ex-presidents.

American Association of Clinical Research.—The fourth annual meeting of this organization will be held in Dubois Hall, New York Academy of Medicine, on Saturday, November 9th. There will be three sessions, morning, afternoon, and evening, the evening session being open to the public. At this session the following addresses will be delivered: The Two Most Far Reaching Discoveries in Medicine, by Dr. James Krauss, of Boston; The New Chemistry and the New Materia Medica, by Hermann Hille, Ph. D., of Chicago; The Acid Test in Therapeutics, by Dr. John Aulde, of Philadelphia. The officers of the association are: President, Dr. Alvin Roy Peebles, of Boulder, Colo.; first vice-president, Dr. Joseph P. Cobb, of Chicago; second vice-president, Dr. E. S. Allen, of Louisville, Ky.; secretary-treasurer, Dr. James Krauss, of Boston; registrar, Dr. R. A. Adams, of Rochester, N. Y.

Medical Society of Virginia.—The annual meeting of the State society of Virginia was held in Norfolk on October 22d and 23d, under the presidency of Dr. Hugh M. Taylor, of Richmond. At a joint meeting of the association with the Virginia Health Association, held on the evening of October 23d, Dr. Fannie G. Williams, of the State Department of Health, delivered an address in which he spoke of the wonderful results obtained in the prevention of disease through the education of the public in matters of hygiene and sanitation. Officers for the ensuing year were elected as follows: President, Dr. Southgate Leigh, of Norfolk; first vice-president, Dr. H. S. MacLean, of Richmond; second vice-president, Dr. M. M. Pearson, of Bristol; treasurer, Dr. Mary W. Friser, of Richmond; secretary, Dr. Paulus Irving, of Farmville. Next year's meeting will be held in Lynchburg, on the second Thursday in October.

Congress on Occupational Diseases.—The Third International Congress for Diseases of Occupation will be held in Vienna in the autumn of 1914. The programme is already being arranged, and the following topics are among those selected for discussion: The physiology and pathology of fatigue, especially with regard to professional work; and the effect of professional exertion on the nervous system; the result of night work; work in hot, damp air; anthrax; injuries through electricity in industrial trades; industrial poisons, especially anilin, mercury, and lead; injuries of hearing by industrial trade. Among those who have already signified their willingness to participate in the work of the congress are Professor Langlois of Paris, Professor Alt, of Vienna, Professor Peyser, of Berlin, Professor Siebenmann, of Basel, Dr. T. Oliver, of Newcastle-upon-Tyne, Dr. S. Jellinek, of Vienna, and others. All individuals and associations who are interested in the congress are invited to attend and participate in the proceedings. Address all communications to Dr. L. Teleky, Türkenstrasse 23, Vienna, Austria.

Pith of Progressive Literature.

MEDIZINISCHE KLINIK.

September 1, 1912.

1. GOLDZIEHER: When May We Operate in Cataract?
2. DROZYSKI: Post Mortem Heart Contractions in Man (*To be concluded*).
3. KAFEMANN: Exitus letalis Following Immediately upon Completion of Adenoid and Tonsillectomy Operation.
4. GEBB: Is There Toxic Action of Neosalvarsan on Papillomuscular Bundle?
5. GROTH: Hormonal in Surgery.
6. SCHOTT: Military Tuberculosis with Typhoid Bacilli in Urine.
7. HERZFELD and MAKLER: Iodostarin
8. STUBBELL: Pharmacodynamic Influence on Opsonic Index.

September 8, 1912.

9. FRANQUÉ: Unusual Causes of Hemorrhage during Pregnancy (*To be concluded*).
10. BONDY: Diminishing and Preventing Pain in Gynecology and Obstetrics.
11. RAECKE: Psychoses of Pregnancy with Indications for Abortion.
12. DROZYSKI: Post Mortem Heart Contractions in Man (*Concluded*).
13. HOEHNE: Operative Treatment of Puerperal Pyemia.
14. LÖWY: Polycythemia rubra.
15. WEINER and ST. SZESZ: Newer Chemotherapy of Malignant Growths.
16. PORTNER: Prostatic Hypertrophy.
17. WEISTEIN: Newer Methods of Local and General Anesthesia.

September 15, 1912.

18. SCHMIDT: Diseases of Joints.
19. FRANQUÉ: Unusual Causes of Hemorrhage during Pregnancy (*Concluded*).
20. UHLENHUTH: Immunity and Chemotherapy in Artificially Produced Tumors of Rats and Mice.
21. Symposium on Early Rising after Operations and Childbirth (*To be concluded*).
22. MEINERTZ: Hematemesis and Intestinal Hemorrhage as Rare Symptom in Internal Disease (*To be concluded*).
23. FALTA, KRISER, and ZERNER: Treatment of Lymph Gland Tumors with Thorium X.
24. KIENBOCK: Arthropathy of Shoulder Joint in Syringomyelia in Physician.
25. HESS: Light and Color Sense in Animals.
26. LINCK: Otiatics.
27. GERHARTZ: Advance in Diagnosis and Therapy of Tuberculosis in Past Five Years.

September 22, 1912.

28. KLIENEBERGER: Juvenile Paralysis.
29. MORGENTHAUER: Memory.
30. EICHORST: Uremic Tumors on Mucous Membrane of Vagina.
31. KAUSCH: Temperature in Axilla.
32. MEINERTZ: Hematemesis and Intestinal Hemorrhage as Rare Symptom in Internal Disease (*Concluded*).
33. SOULEN, JR.: Size of Abdomen and State of Nourishment of Individual.
34. NENADOVSKI: Bath Regulator, New Appliance for Direct and Indirect Heating and Cooling of Carbonic Acid Baths.
35. NIFFE: Experiences with Maltyl and Maltyl Malt.
36. Symposium on Early Rising after Operations and Childbirth (*Continued*).
37. SCHMIDT: Serodiagnosis of Lues.
38. LINCK: Otiatics (*Conclusion*).
39. DUROY: Bacteriological Examinations on Pathogenesis of Sympathetic Ophthalmia.
40. RETZLAFF: Newer Work on Diabetes insipidus.

September 29, 1912.

41. HOFFMANN: Heart and Bloodvessel Disease and Accident.
42. BUM: "Functional" Treatment of Fractures.
43. MORGENTHAUER: Memory (*Conclusion*).
44. DORENDORF: Intravenous Injection of Römer's Pneumococcus Serum in Croupous Pneumonia.
45. WOLFER: Gout Therapy with Urosemia.
46. Symposium on Early Rising after Operations and Childbirth (*Continued*).
47. KUHN: Treatment of Weak Heart and Circulatory Disturbances with Lung Mask.
48. HUNAUER: Use of Creosotal in Pediatrics.
49. BRUCK: Shall We Remove Three Tonsils at One Sitting?
50. FOSSELT: Remarks on Chowella's Article on Asthma.
51. E. KAUSCH: Iodine Mercury Combinations in Their Relation to Organism.
52. VON BARDELEBEN: Surgery in Pulmonary Tuberculosis and Pregnancy.

4. Toxic Action of Neosalvarsan on the Papillomuscular Bundle.—Gebb reviews the arguments of those authors who aver that the irritation of certain cranial nerves after injection of salvarsan is due to its neurotropic action; he maintains that it is due to the syphilitic virus. This relapse of the infection after salvarsan injection Ehrlich calls *Neuroresidiv*. Salvarsan is much better than mercury iodide treatment since the latter influenced the syphilitic lesions in his patients in a

less degree than the salvarsan, which brought about *restitutio ad integrum* in a few weeks. In a number of his patients the diseased papillomuscular bundle was rapidly influenced for the better. If salvarsan were toxic for this nerve, as Cohen asserts, then the author reasons that in his own cases where this bundle of nerves was involved much more damaging results would have to be expected. The opposite result was obtained. The irritated papillomuscular bundle was soon well and sight returned to the normal in a short time. Therefore there can be no injury to the nerve elements of the eye by salvarsan, and the hyperemia of the nerve sheath of the optic nerve or retinal hemorrhages or central scotoma after salvarsan injections are merely the *neuroresidiv* of Ehrlich. Since Ehrlich's preparations do not cause injury to the eye, he was justified in speaking of the harmlessness of these preparations.

5. Hormonal in Surgery.—Groth tried this remedy in fourteen cases of postoperative ileus with very good results; in twelve, peristalsis was reestablished, and in only two cases was the remedy of no value. The drug was given after the usual methods in vogue for the reestablishment of peristalsis had been tried and had failed. There was a rise of temperature in all the cases, and in two very sick patients there was slight collapse, which disappeared on the administration of stimulants. The bad experiences reported by Kretschmer, Hesse, Wolf, and Rosenkranz, after injecting hormonal, were not perceived by the author. The administration of this drug in a large series of cases will eventually determine whether it has a dangerous specific side action, or whether this action is due simply to the intravenous injection of a large amount of the medicament as is sometimes the case with other drugs. The author has assumed the standpoint that in all cases of acute and threatening intestinal paresis, hormonal should be administered after the usual methods for establishing peristalsis have failed.

7. Iodostarin.—Herzfeld and Makler found iodostarin to be a substance not decomposed by light or air and containing 48.26 per cent. of iodine. In eighteen cases it was well taken by the patients, in two cases not so well. After it is ingested it does not appear in the blood or urine as such. Other organic iodine combinations were not demonstrable, but the iodine appeared in an inorganic form. In the urine there was excreted 62.64 per cent. of iodine and 7.52 per cent. in the feces. The reduction of the iodine in the body is related to the amount of iodine administered.

20. Immunity in Artificially Produced Tumors in Rats and Mice.—Uhlenhuth believes that there is an operative immunity to the sarcoma of rats and carcinoma of mice. After radical operation of well developed tumors the animals become immune, that is, a subsequent vaccination with tumor cells is ineffectual. If a very small portion of the primary tumor is left in the tissue, it grows rapidly and the subsequent vaccination with tumor cells takes root. There are substances which hasten the growth of the tumor and have therefore a certain affinity with the cells. Therefore there are probably substances which inhibit their growth.

The task of chemotherapy is to find these substances, and recently some progress has been made in this direction. The goal to be attained is to combine chemotherapy with immunity therapy, i. e., destruction with resorption of the tumor by a chemotherapeutic agent and the resulting autoimmunity of the organism.

33. **Size of Abdomen.**—Sohlern has made a special study of the abdomen and says: 1. There are persons with otherwise normal bodily development and normal constitutions who possess abnormally small abdomens, out of proportion to the rest of the body. 2. It seems not at all improbable that there is at the same time a congenital diminution of the abdominal organs, especially of the stomach and intestine. 3. This abnormality prevents a sufficient amount of assimilation and may lead to more or less undernourishment and emaciation, which in turn lead to, 4, the most diverse digestive disturbances, enteroptosis, and neurasthenia. 5. This does not mean, however, that all small abdomens must lead to emaciation, or that all large ones lead to obesity. There are transition forms, and other factors which must be taken into account, such as character, psychic makeup, energy, mode of life, and nourishment. This fact remains, that patients with small abdomens never become obese. 6. Large and small abdomens are congenital abnormalities. 7. Small abdomens predispose to leanness with the resulting ptosis, chronic constipation, and neurasthenia.

29, 43. **Memory.**—Morgenthaler reviews the progress made in the study of memory. In former times its study was reserved for philosophers and psychologists, but now it is coming more prominently into the field of the physiologist and biologist. He discusses the practical methods of determining the capacity for memory, and the relation of perception to reproduction. The pathology of memory in mental diseases is very interesting. In congenital imbecility memory is usually equally defective in all its branches. In neurasthenia memory is defective in concentration, therefore we have cloudy and hazy conceptions, slowness of reproduction without signs of objective or subjective fatigue. In hysteria there is much onesidedness. The memory remains true in irrelevant matters, but when the personality plays a part the greatest unreliability results in reproduction. Further, he speaks in detail of the memory in depressions, chronic alcoholism, Korsakoff's syndrome, dementia præcox, etc. Summing up, he says that memory forms the basis of all other mental faculties. Without memory there could be no recognition, no imagination or art, no consciousness of time for the past or the future. The faculty for forgetting on the other hand is important and necessary. Some famous scientists have not enjoyed good memories. Most of the prodigies possessing wonderful capacity for remembering, like the mathematical or musical wonders, have a general intelligence and cultural worth far below par. The average person with a very good memory soon becomes a figure automaton and a garrulous reciter of fact. Precious and necessary as a good memory is for mental efficiency, it may become harmful and absolutely destructive to the intellect when memorizing in itself becomes an end and not the means.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

September 3, 1912.

1. NOGUCHI: Raising Pure Cultures of Spirochetes of European, American, and African Recurring Fever.
2. ABERHALDEN: Diagnosis of Pregnancy by Optical Method and Dialysis.
3. HARNACK: Acute Blindness through Methyl Alcohol and Other Poisons.
4. HAKIUNG: Digifolin, New Digitalis Preparation.
5. ULRICH: Five Years' Experience in Treatment of Epilepsy with Salt Free Diet (to be continued).
6. MAIER: Experiments with Bromide Administration and Salt Free Diet.
7. RUMPF: Presence of Tubercle Bacilli in Blood Stream.
8. DÖRING: Evidence of Meningococcus in Purulent Discharge from Ear.
9. VOGT: Diagnosis of Pulmonary Tuberculosis in Children.
10. WEBER: Numerous Cases of Facial Paralysis in One Family.
11. JUSTI: Trachea after Tracheotomy.
12. VOLLET: Severely Choked Disc after Salvarsan Injection for Syphilis.
13. CROQUY: Hyperesthesia Reaction to Salvarsan Injections.
14. MOLDOVAN: Results of Salvarsan Treatment in Austro-Hungarian Army.
15. GENNERICH: Treatment of Venereal Disease.

September 10, 1912.

16. LÜDKE and STURM: Specific Action of Tuberculin Reaction.
17. SCHOTTMÜLLER: Liquor cerebrospinalis in Infectious Diseases, with Special Reference to the Wassermann Reaction in Acute Epidemic Polymyelitis.
18. HAUSEMANN: Concentric Contraction of Antrum pylori.
19. OERTEL: Endoscopic Examination of Nasopharynx and Larynx.
20. SCHMIDT, STORBER: Cured Intestinal Antrax Operated in.
21. KUBIG: Volvulus of Gallbladder.
22. SCHROEDER: Unpleasant Side Effects after Intramuscular Injection of Jodo. Forty per cent. Salvarsan Preparation.
23. VULPIUS: New Hip Support in Severe Paralysis.
24. HEINRICH: New Dilators for Treatment of Male and Female Posterior Urethral Gonorrhea.
25. SCHULTZE: Simple Aid to Hip and Shoulder Hyperemia, and Substitute for Trendelenburg's Ligation in Anemia of Lower Extremities.
26. GERBER: Magnifying Anastigmatic Nasal Mirror.
27. HIRSCHL: Intraperitoneal Use of Camphor Oil.
28. MARTIN: Epidemiology of Appendicitis.
29. BOSSELMANN: Comparative Experiments with Röntgen Instruments.
30. ULRICH: Five Years' Experience in Treatment of Epilepsy with Salt Free Diet (Conclusion).

September 17, 1912.

31. GÖTT and ROSENTHAL: Representation of Cardiac Movements by Röntgen Rays.
32. ANGERER and STÖTTER: Making Antigen Antibody Action Visible.
33. FRIEDLÄNDER: Effect of Fever Processes on Metabolic Diseases of Central Nervous System.
34. LEREDDE: Favorable Action of Salvarsan in Tabes dorsalis.
35. FRANK: Effect of Hexal on Infections of Urinary Tract.
36. ROEMER: Pitugland Oil in Obstetrical Polycylinic.
37. KLOTZ: Pituitrin Therapy in Peritonitis.
38. GRENBLUM: Experiences with Hypophysis Extract in Obstetrics.
39. VOLL: Treatment with Pituitrin.
40. KONOPKA: One Hundred Laparotomies in Private Houses.
41. HEDDAUS: Treatment of Large Carbuncles by Circumcision.
42. LUSTIG: Eight Years of Italian State Traffic in Quinine and Fight against Malaria.
43. SANITER: Improved Holding Forceps.
44. ROST: Inflation of Large Intestine per Rectum.
45. SLAWINSKI: Diagnosis of Chronic Appendicitis.
46. LÜDKE: Basis of Serum Therapy in Typhoid.

September 24, 1912.

47. ICHERSHEIMER: Experimental Examinations in Syphilis of Eye.
48. ESCH: Application of Intracutaneous Tuberculin Reaction as Aid to More Rapid Proof of Tubercle Bacilli through Animal Experimentation.
49. WEIL: Lipodemia.
50. WECHSELBAUM: Neosalvarsan.
51. TACHAU: Practical Significance of Uniformly Deep Rectal Temperature Measurement in Children.
52. FLATAU: Chorea luetica.
53. NENADOVIC: Stimulation of Heart by Natural Carbon Dioxide Bath with Indirect Cooling.
54. BANTLIN: Pellidol and Azodolen for Treatment of Eczema in Exudative Diathesis.
55. FRANK: Healed Pylophlebotic Liver Abscesses Following Appendicitis.
56. JAEGER: Brain Injury with the Bullet in Fourth Ventricle for Four and a Half Years.
57. GINS: Cheapening of Formaldehyde Processes without Apparatus.
58. SCHMORI: Placental Cell Embolism.
59. LEREDDE: Favorable Influence of Salvarsan in Tabes dorsalis (Conclusion).

3. **Acute Blindness through Methyl Alcohol and Other Poisons.**—Harnack says that heterogeneous chemical substances like methyl alcohol, nitric acid, atoxyl, etc., have as a common action the activation of their oxygen upon the nervous elements of the eye. Blindness is caused by an inflammatory, degenerative process of the nerve tissue. Other poisons, on the other hand, quinine, cocaine,

and filix mas cause blindness by violent spasm of the retinal bloodvessels which acts like an embolus of the central artery, i. e., produces disturbance in the circulation of the vessel with consequent atrophy of the nerve tissue.

4. Digifolin, a New Digitalis Preparation.—Hartung discusses digifolin, which appears on the market in watery solution in ampoules and in tablet form. The ampoules contain the active glucosides of the digitalis leaves, digitoxine and digitalin. Pharmacological experiments on frogs have shown that digifolin has complete digitalis action. It regulates irregularly beating hearts, increases heart action with increasing doses, and in large doses causes heart block in systole. One c. c. of the digifolin contents of the ampoule corresponds to the strength of 0.1 gramme folia digitalis titrata. Digifolin is quite different from the infusion of digitalis. It is free from all unnecessary and harmful additions, especially the digitisaponin, which irritates the mucous membrane and which is present in the infusion and in digipuratum. It is more stable than the infusion and withstands decomposition in the alimentary tract much more easily than the infusion.

5. 30. Treatment of Epilepsy with a Salt Free Diet.—Ulrich calls attention to the fact established by many experiments of the antagonistic relation of bromide and chloride in the human economy. Deficiency of the chloride increases the action of the bromide. He carried out a bromide cure with salt reduced, or salt free diet, in fifteen epileptics for five years continuously. He gives a complete history of each case with diagrams, etc. He noticed an improvement immediately upon withdrawal of sodium chloride from the diet. In six cases the seizures ceased completely; in the nine others there was marked improvement. Not only did the convulsions disappear, but the psychic condition of the patients became much better. Thus it is shown that individually chosen and methodically applied bromide treatment with salt reduced diet is worth more than all other methods of treatment, and is certainly more satisfactory than bromide treatment with ordinary diet. The reasons for the slow application of this method have been: 1. The diet is so monotonous that after a time it is refused by the patients; 2, the preparation of a salt free diet was so difficult that the culinary art was taxed to its utmost; 3, many physicians have interrupted the cure upon the appearance of symptoms of bromidism. The author describes in detail his experience of fourteen years with acute and chronic bromidism. Sedotablets, containing sodium bromide and chloride simplify the administration of bromide with a reduced salt diet. They give to the food a palatable and stimulating taste. In the past eight months the author has used hundreds of these tablets in 200 cases with excellent results. The tablets together with the bromides are added to the soup. Over a period of three months 100 epileptics were given the same bromide doses and same salt doses and kept under the same external conditions. With the ordinary salt diet these 100 epileptics in three months had 2,184 convulsions. With salt free soup and bromides given in watery solution the number of convulsions was reduced to

1,533. With the use of the tablets and the same doses of bromides the number dropped to 1,000. Judging from his numerous and long applied experiments the author says that a salt free diet covering a period of years is practicable. The technical difficulties are relieved by the use of sedotablets. The fare, usually so monotonous and distasteful, becomes palatable and tasty.

17. Cerebrospinal Fluid in Infectious Diseases.—Schottenmüller concludes from a series of experiments that, in many infectious diseases, as a result of the deluging of the blood by the bacteria, the pia and arachnoid, together with spinal fluid, are changed. These changes cannot be ascribed to the toxins circulating in the blood, therefore in infectious diseases the pressure and cell count of the spinal fluid are of significance, even when no meningitis in the strict sense of the term exists. He proves that the Wassermann reaction has a significance in acute poliomyelitis.

38. Hypophysis Extract in Obstetrics.—Grünbaum says that hypophysis extract is a good remedy to increase labor pains during birth and stimulate them in complete inertia. The greater the progress of labor the more intense is the effect of the drug. Best results are obtained when the cervix is completely dilated. The drug has no effect in producing premature labor, in hastening abortion, and in the third stage of labor.

34. 59. Salvarsan in Tabes dorsalis.—Leredde says that the favorable action of salvarsan has been definitely established and that it brings the tabetic process to a standstill. Furthermore, it can cause the retrogression of certain lesions whose seat is in the spinal roots or in the cord itself. The improvement is noticeable by the disappearance of the later symptoms, and also in some cases by the disappearance of the older symptoms. The author observed a series of patients for two and a half years, and in a few cases the results were excellent and the patients were completely cured. The majority of the patients are now in a much better condition, the most prominent symptoms having almost altogether disappeared or showing marked attenuation. The success of the treatment depends on the use of the most efficacious drug, salvarsan and neosalvarsan, the application of the normal dose, 0.01 gramme of salvarsan and 0.015 gramme of neosalvarsan to the kilo of body weight. The treatment must be continued to the entire disappearance of the positive seroreaction and every chronic and biological symptom which points to the fact that syphilis is still active.

ZENTRALBLATT FÜR GYNÄKOLOGIE.

September 7, 1912.

1. E. ZURHELLE: Diagnosis by X Ray of Extrauterine Gestation in Later Months after Death of Fetus.
2. STROEDER: Importance of Senaration, in Official Statistics, of Cases of Puerperal Fever, Puerperal Disease, and Death after Abortion, from Similar Conditions Occurring after Delivery of Mature, Premature, and Immature Products.
3. RICHTER: Support of Uterus.

September 14, 1912.

1. H. FRIES: Pregnancy and Delivery in Echinococcus Cyst of Pelvis and Myoma of Uterus.
5. J. M. BOSSI: Ovarian and Uterine Disease and Psychopathies.
6. K. HEIL: Historical Observations Concerning Kuntsch's Vacuum Cap.

1. **Diagnosis by X Ray of Extrauterine Gestation.**—Zurhelle concedes that the x ray is not

necessary to diagnosis in a normal case, as the information can be obtained by manual examinations. He calls attention, however, to the different conditions that exist in extrauterine gestations, particularly when the fetus has died. Cases from other obstetricians are reported and one of his own is given in detail.

4. **Pregnancy Complicated by an Echinococcus Cyst and Myoma of the Uterus.**—Fries reports a case of a woman of thirty-nine years, pregnant for the first time. At the time of admittance to the hospital the pregnancy was at the fifth month. Examination showed a large tumor on the right side of the uterus, apparently between the layers of the broad ligament. At the operation several myomas were found, as well as the large tumor. This latter was removed, as was the larger intramural myoma. In removing this latter the decidua was exposed. The pregnancy was not interrupted, the patient making an uneventful recovery. At term the patient was delivered of a child, fifty-five cm. long and weighing 4,000 grammes.

5. **Ovarian and Uterine Diseases and Psychopathies.**—Bossi sees no reason why psychopathic disturbances may not result from lesions of the female genitalia as well as from diseases of the male organs. He holds that they may arise not only from severe gynecological lesions, but even more so from the infections and toxic disturbances of the endometrium, this influence being particularly marked if there is an associated complete or incomplete stenosis of the cervix with a flexion of the uterus, in this way preventing the escape of the uterine secretions and causing them to be resorbed. The nervous and psychopathic disturbances are specially noticeable if there is interference with or decrease in the menstrual flow. This indicates some disturbance of the internal secretion of the ovary. Bossi believes that many of the cases in insane asylums may be relieved or cured by proper attention to lesions of the genital tract; but he states that good results cannot be expected unless the treatment has been begun before anatomical changes occur in the nervous system.

CENTRALBLATT FÜR ALLGEMEINE PATHOLOGIE UND PATHOLOGISCHE ANATOMIE.

September 15, 1912.

1. HERMANN SCHÖPPLER: Cryptorchidism.
2. JOAN JIANU and O. MELLER: "Hypogenetic Nephritis."
3. CÉSAR AMSLER: Peculiar Necrosis in Liver and Cortex of Adrenals of Prematurely Born Child.

September 15, 1912.

1. **Cryptorchidism.**—Schöppler discusses briefly the formation of this defect, and reports a case in which, at autopsy, both testicles were found to be within the abdominal cavity. Microscopical examination of the organs did not show the presence of spermatozoa. The glands, however, should not be called functionless as their internal secretion probably remained unchanged.

2. **"Hypogenetic Nephritis."**—Jianu and Meller, under this term, first used in 1905 by Bates, report a peculiar form of kidney disease. In general these cases occur in young people, from twenty to thirty years old, of delicate build, anemic and weak subjects who have never suffered from renal disturbances, or else with changes too slight to

notice. When such individuals acquire some slight infection, as bronchitis or influenza, indications of renal insufficiency suddenly appear, and the patient dies within two or three days from a hyperacute uremia. At autopsy the kidneys are found to be much smaller than normal and show also congenital conditions, lobulation, and abnormal positions. The capsule is adherent in places, and the surface is slightly granular, the cortex thin and pale yellow. The pyramids are small, decreased in number, and arranged abnormally. In all reported cases of hypogenetic nephritis there were anomalies in other organs, particularly of the genitalia, often infantilism. As a result of the incomplete development, the kidney is unable to carry on the extra work caused by the slight infection.

KLINISCHE MONATSBÄTTER FÜR AUGENHEILKUNDE.

September, 1912.

1. J. RUBERT: Etiology of Phlyctenular Disease of Eye.
2. G. BOGATSCH: Etiology of Bitemporal Hemianopsia with Special Reference to Diseases of Bitemporal Hemianopsia.
3. FR. ROSSLER: Swelling of Lid Resembling Elephantiasis after Suppuration of Neighboring Lymphatic Glands.
4. A. RADOS: Tuberculous Changes in Retina.
5. A. RADOS: Pathology of Caruncula lacrymalis.
6. A. PICHLER: Rupture of Choroid as Probable Cause of High Degree of Myopia.
7. G. HAASE: Extraction of Piece of Copper from Vitreous.
8. C. H. SATTLER: Vermiform Contractions of Sphincter pupillae.
9. G. F. COSMETATOS: Two Cases of Echinococcus of Orbit.
10. C. EXAMUEL: Simple Means of Illumination for Removal of Foreign Bodies from Cornea.

1. **Etiology of Phlyctenular Disease.**—Rubert shows by his experiments that the resistance of the conjunctiva and cornea is impaired by the influence of the virus of tuberculosis, and confirms the observation made by Axenfeld in scrofulous persons that the tissues react in different and characteristic ways to one and the same poison.

7. **Extraction of a Piece of Copper from the Vitreous.**—Haase reports a case in which he removed a bit of copper from the vitreous with forceps through an incision made in the sclera. The foreign body could be seen through the pupil, and the operation was performed with the aid of a forehead light. Nearly three years later the vision was 5/7, and only comparatively slight lesions could be found in the eye. This case is the more remarkable as copper is apt to be very poisonous to the eye.

PARIS MEDICAL

September 28, 1912

1. PAUL CARNOT: Modern Ideas as to Coagulation of Blood.
2. FORTINEAU: Treatment of Anthrax with Pyocyanin.
3. JULES REGNAULT: Technique of Autooperations.

3. **Autooperations.**—Regnault gives details for the use of those who desire to operate on their own persons; hernias and appendicitis have been treated in this way. The use of mirrors is valuable, care being taken not to be misled by the reversed position of the reflected body. Regnault is scrupulous as to aseptic technique and wraps all but the site of operation in aseptized towels and bandages. He believes local anesthesia by cocaine the only proper method, spinal anesthesia having many disadvantages and dangers. He extracted a molar tooth after preliminary anesthesia of the surrounding gum, using the old fashioned turnkey to loosen the tooth, which was then removed with an ordinary pair of forceps, the mirrors proving indispensable in this case.

PRESSE MÉDICALE.

September 25, 1912.

1. L. RÉNON, E. GÉRAUDEL, and C. RICHEL, JR.: Hemorrhagic Tuberculous Meningitis.
2. H. BALVOINE and RENÉ ONFRAY: Ureosecretory Coefficient of Kidneys; Modification and Simplification of Ambard's Formula.
3. H. LABBÉ and G. VITRY: Nitrogen Metabolism in Tuberculosis.
4. MICHEL DE KERVILY: Anesthesia by Epidural Injection during Labor.

September 28, 1912.

5. EMILE FORGUE and GEORGES MASSABUAN: Metrorrhagia at Climacteric, of Ovarian Origin.
6. R. LEGRAS: Active Hyperemia in Articular and Circumarticular Traumatism.

1. Hemorrhagic Tuberculous Meningitis.—

Rénon, Géraudel, and Richet report two cases of meningeal hemorrhage, clinically diagnosed, which at autopsy proved to have been caused by tuberculous meningitis. The patients were sixty and sixty-four years old, respectively. The hemorrhagic form of tuberculous meningitis is a definite, clinical entity, which can be distinguished from an ordinary hemorrhagic meningitis of different causation, even where tubercle bacilli have not been found, by the simultaneous presence of active tuberculosis elsewhere, by the fact that the general symptoms (coma, rigidity, etc.), are more marked than would be expected from the amount of hemorrhage that has taken place, by the predominance of mononuclears and lymphocytes over polynuclears in the cerebrospinal fluid, and by the absence of hypertension upon lumbar puncture. Inflamed meninges tend to bleed, not only in acute meningitides, but also in certain chronic forms—including the tuberculous—especially at periods of exacerbation.

3. Nitrogen Metabolism in Tuberculosis.—

Labbé and Vitry studied the elimination of nitrogen in the urine in twenty-one cases, all of advanced stage and some even ending fatally a few days after. The total nitrogen elimination was found low. The authors believe it useless, however, to increase the proteids in the diet, because of the very faulty intestinal absorption in these patients; the result would be merely to produce diarrhea and autointoxication. The percentage of nitrogen excreted as urea was also found to be low, but the elimination of purins was high, evidently owing to the excessive destruction of purin containing albumins taking place in the body.

5. Metrorrhagia at Climacteric.—Forgue and Massabuan, discussing uterine hemorrhage occurring at the menopause independently of any obvious organic affection, and customarily termed essential or idiopathic, refute the theories which have been advanced to account for it on the basis of lesions of the uterine parenchyma, vessels, or mucosa, and adduce evidence to prove that the true cause is a hypertrophy of the interstitial or internally secreting portion of the ovaries, which can be demonstrated histologically.

6. Active Hyperemia in Joint Injuries.—Legras found hot air treatment very effective in eleven cases of "closed" joint injury. It should be employed from the very start, and has the effect of relieving pain immediately, facilitating the absorption of joint effusions, and accelerating repair. It also reduces to a minimum the chances of subsequent local infection by bringing more blood, with the protective agencies embodied in it, to the part. Air at 110° to 140° C. should be applied to each in-

jured joint individually in a suitable "baking" chamber for from three quarters of an hour to one hour. The benefit derived from the treatment was demonstrated in a case in which both knee and ankle were traumatized; repair took place and discomfort was relieved much more rapidly in the knee, which was treated with hot air, than in the ankle, which was merely massaged. Legras disapproves of Bier's obstructive hyperemia on the ground that the glucose set free as a result of injury to the neighboring muscle tissue is thereby caused to accumulate and offers a good medium for the multiplication of bacteria.

SEMAINE MÉDICALE.

October 2, 1912.

R. DE BOVIS: Röntgen Rays and Treatment of Uterine Fibromyoma.

Röntgen Rays in Treatment of Uterine Fibromyoma.—De Bovis discusses at length the action, technique, advantages, and disadvantages of the x ray method. Among the points of superiority over operative treatment are: Safety and avoidance of operative shock, of embolism, and of post-operative hernia. The disadvantages include the long duration of the treatment—two and a half months at the very least—its costliness, and above all, the difficulties attending an exact appreciation of the condition of the tumor, with resulting unavoidable uncertainty as to whether or not the treatment is warranted in the individual case. In addition to the possibility of degenerative changes in the tumor, of incarceration, and of annexal complications, there are numerous opportunities for mistaking for a fibromyoma other large, firm growths in the same region. Accidents may thus occur, as in a case reported by Sellheim, in which gangrene of an ovarian tumor was produced. Although, from present indications, the results obtained with the x rays are permanent, as a rule, Laquerrière, a radiologist, admits that in comparatively young patients recurrences are frequent.

REVUE MEDICALE DE LA SUISSE ROMANDE.

August, 1912.

1. R. BURNAUD: Autoserotherapy of Exudates Following Artificial or Spontaneous Pneumothorax.
2. TECON: Influence of Altitude on Thoracic Circumference of Tuberculous Patients. Relations between Variations in Body Weight and Those in Thoracic Circumference. Prognostic and Clinical Value of These Observations.
3. P. GAUTIER: Note on 150 Cases of Scarlatina Observed at Pediatric Clinic of Geneva.

1. Autoserotherapy in Pleural Effusion Following Pneumothorax.—Burnaud reinjected some fluid from the pleura in a case of pneumothorax and upon examining a sample afterward found numerous tubercle bacilli. Although this patient suffered no ill consequences, Burnaud advises that in practising autoserotherapy the fluid to be reinjected be subjected to centrifugation and then passed through a vacuum filter, in order to eliminate possible bacterial inclusions. As regards therapeutic results, he observed at each reinjection a distinct fall in temperature; the effect on the exudate, however, was disappointing, only a slight and temporary diminution occurring.

2. Influence of Altitude on Chest Circumference in Tuberculosis.—Tecon, studying this question in 200 cases of pulmonary tuberculosis, found the chest measurement increased in eighty-three per

cent. Changes in the body weight paralleled, in the majority of cases, those in the chest perimeter, but clearly did not constitute the sole factor influencing it, as in some cases diminution of weight and chest enlargement were coexistent. As a rule, the greater the increase of chest circumference corresponding to a given increment of body weight, the more marked was the improvement, clinically, in the patient's condition. The thoracic coefficient, i. e., the ratio of increase in thoracic measurement to that of body weight, appears to have prognostic value.

3. **Notes on Scarlatina.**—Gautier found streptococci in the blood only once among thirty cases of scarlatina. Of 150 cases constituting the entire series studied, ninety-two, or sixty-one per cent., passed through the affection without complications of any kind. Of the remainder, three showed return of the eruption, six submaxillary adenitis, thirteen otitis, three mastoiditis requiring operative intervention, eight joint inflammation, one nephritis, and five pneumonia. In ten cases the scarlet fever was followed by measles, in six by chickenpox, and in three by diphtheria. Six cases terminated in death, two from bronchopneumonia, one from lobar pneumonia, one from purulent pleurisy, one from septicemia, and one from severe scarlatina with hyperpyrexia.

BRITISH MEDICAL JOURNAL.

October 12, 1912.

1. T. W. GRIFFITH: Some Cardiac Problems.
2. W. NICOLL: Life of Rat Flea Apart from Host

1. **Cardiac Problems.**—Griffith's paper is replete with valuable suggestions upon the interpretation of phlebograms and sphygmographic tracings, and gives an excellent and clear review of the established facts regarding their diagnostic significance. He remarks that he knows of no observations which show that the postsphygmic period of the tracings varies in length in animals of different species or in man under physiological conditions, or whether it is lengthened in cardiac hypertrophy, or shortened when the heart is dilated or the subject of toxemias. Tracings which he obtained in two cases of myotonia congenita (Thomson's disease), in which the voluntary muscles relax very slowly after contraction, showed that there was also a similar slow relaxation of the ventricular musculature. The apex of the venous ventricular wave was distinctly later than the bottom of the aortic notch in the pulse tracing. From a case of adherent pericardium he was apparently able to confirm the suggestions of others to the effect that the ventricular muscle around the conus arteriosus relaxes later than the remainder of the ventricle. This would seem to bear out the contention that there is a sphincteric support for the aortic valves. He has some confirmation of the explanation given by Gibson for the origin of the "h" wave in the venous pulse, as being due to the rapid rush of blood into the relaxed ventricle and a transitory preliminary closure of the tricuspid valve from this cause. He could distinctly hear this closure simultaneously with the appearance of the "h" wave, and, in the same patient, it was absent when the wave was wanting. Griffith further adduces a certain amount of valuable evidence to show that in

some cases of extrasystole when the following auricular contraction fails to provoke a ventricular response, the failure is due to lack of transmission through the bundle of His rather than to a refractory state of the ventricular muscle. He suggests that when the irregular period in the presence of extrasystoles is less than two ordinary spaces the extrasystole is probably of auricular origin. The converse of this proposition is, however, not true. For the certain diagnosis of complete heart block he holds that the action of the ventricle should be less than forty beats a minute; that the ventricular rhythm should be regular, but if it is irregular, as occasionally happens, the ventricular systole which appears next after the premature beat will be found to be separated from it by the same interval of time as are the regular beats, this being due to the fact that the rate of formation of contraction material in the ventricle is of uniform duration; and finally, that there should be no strict relationship existing between the auricular and ventricular systoles. In the case of auricular fibrillation, Griffith emphasizes the sharp distinction which must be made between the true auriculostolic bruit and the ordinary presystolic one. The latter may be present but the former never is. He further reports some cases in which the interesting phenomenon of coupled beats has been observed in fibrillation, in the absence of digitalis medication.

2. **Life of the Rat Flea.**—Nicoll concludes that the average duration of life of *Ceratophyllus fasciatus* apart from its host is usually just under seven days. About nine per cent. live for two weeks, and at least two per cent. for three weeks or more. Other things being equal, the fleas live longer in winter than in summer. When the temperature is above 15° C. it is exceptional for them to live over forty days, but when it is below 10° C. they may live for two months, and at freezing temperature for ten weeks. At temperatures above 25° C. their life is short, and at 37° C. is always less than twenty-four hours. Excess of dryness and excess of moisture shorten their life period. Conditions of light have little influence. They live longer when they are removed from the material in the cages than when taken from the rat itself. Studying the larvæ also, he concludes that material containing both fleas and larvæ may remain infected for as long as a year. This seems to be due to the fact that the larval and pupal stages in their development are greatly prolonged under adverse conditions, that is the absence of the normal host. While there was no direct evidence that the fleas bred under such conditions, the late appearance of larvæ suggested that some, at least, did breed.

LANCET.

October 12, 1912.

1. W. H. BATTLE: Ventral Hernia (*Lecture II*).
2. C. A. BALLANCE: Septic Thrombosis of Left Sigmoid Sinus, etc.
3. H. FRASER and A. T. STANTON: Prevention and Cure of Beriberi.
4. A. L. DYKES: Temporary Partial Heart Block as Sequel to Acute Pneumonia.
5. J. W. H. HOUGHTON: Spinal Analgesia.
6. J. D. MALCOLM: Ovariotomy Forty Years after Discharge of Fetal Bones through Rectum.
7. J. E. R. McDONAGH: Life Cycle of Organism of Syphilis.

2. **Sigmoid Thrombosis.**—Ballance reports the details of a case of septic thrombosis of this

sinus which extended through the left inferior petrosal sinus to the left cavernous sinus, both of which became thrombosed. The original infection was of otitic origin. The symptoms of the thrombosis of the cavernous sinus were similar to those given by Coupland, in 1887, and included proptosis, edema of the eyelid, and chemosis of the conjunctiva, venous hyperemia of the retina, and more or less paralysis of the ocular muscles. Two operations were performed, the first included a "complete mastoid" and double ligation of the sigmoid sinus with drainage, the second attacked the cavernous sinus through the Hartley-Krause method of approaching the Gasserian ganglion. In spite of these measures and the use of autogenous vaccines the patient succumbed to a general septicemia.

3. **Prevention of Beriberi.**—Fraser and Stanton, accepting the cause of beriberi as being due to the removal of some essential substance in the process of polishing rice, sought to discover whether this substance could be isolated from the polishings. They found that by extraction either by cold or boiling alcohol, by percolation or decoction, a concentrated extract could be obtained which, when fed to chickens in which beriberi was developing from the ingestion of polished rice, prevented the further course of the disease, although polished rice was continued as their diet. In fact, the extract not only arrested the development of the disease, but caused the symptoms which had already appeared to recede. The authors then tried the curative effects of these extracts upon chickens in which had developed severe grades of polyneuritis from polished rice, with striking curative effects. The disease was soon arrested and all of the symptoms were removed save those due to actual destruction of nerve tissue. Owing to the great prejudice which exists against unpolished rice it is impossible to enforce its use. The polishings are extremely impure and are mixed with foreign material so that they cannot be used as such. If they could it would be necessary for an adult to consume 1.75 ounce daily to offset his consumption of the polished rice. Hence the introduction of this concentrated extract, of which a dessertspoonful represents two ounces of polishings, should prove of great prophylactic, and probably curative value. The authors also suggest the estimation of the phosphorus content of rice as a means of determining whether or not it is suitable for food. A rice containing less than 0.4 per cent. of phosphorus pentoxide has been polished to such an extent as to be dangerous to health.

4. **Partial Heart Block.**—Dykes reports the development of partial heart block in a young man one week after the crisis of acute pneumonia. The condition lasted for three weeks and disappeared spontaneously. The block was fairly regular in its recurrence, appearing for the most part every fourth or fifth beat. No drugs of the digitalis series were used in the treatment of the patient, and Dykes suggests that the condition was dependent upon the action of the toxins of the pneumonia, depressing the conductivity of the bundle of His. So far as is known, this is the first reported instance of this phenomenon following acute lobar pneumonia.

6. **Ovariectomy.**—Malcolm found extensive ad-

hesions between the uterus and the rectum in one patient, probably the result of inflammation accompanying the discharge of fetal bones through the rectum forty years previously. He removed a large nonmalignant tumor of one ovary. The operation was closely limited to the removal of this ovarian mass, but on autopsy one year later there were found a sharp kink in the small intestine which caused partial obstruction, and a marked circular narrowing of the jejunum, so small as to scarcely admit the passage of an orange seed. He believes that both of these constrictions were the result of adhesions developed at the time of the discharge of the fetal bones over forty years before, and he regards the almost complete absorption of the fibrous tissue at each site of narrowing as confirmatory of this view.

7. **Organism of Syphilis.**—McDonagh advances the suggestion that the spirochetal form of the parasite of syphilis is but a single stage in the course of the development of the organism. As the result of an extensive study of the juices of lymphatic glands and of cut sections he believes that he can trace the following steps: The life cycle begins with a motile sporozoite which enters a large mononuclear cell, where it becomes motionless, grows larger, and becomes invested with a distinct mantle of protoplasm. Development continues at the expense of the protoplasm of the mononuclear cell. The sporozoite then divides into two large, nongranular, staining masses. One half becomes vacuolated and is transformed into an irregular coil which is of uneven thickness. At the base of this coil, lying just above the nucleus of the cell and in the protoplasm of the cell, are some rod shaped bodies. The coil then becomes extracellular and breaks up into short, wavy bodies. From these the long, spiral spirochete develops. The spirochete is, then, the microgamete, or male gamete. The other half of the sporozoite, mentioned above, leaves the cell and becomes crescentic and later spherical. This spherical body is the perfect female or macrogamete and is ready for fertilization. This act McDonagh has never seen, but he outlines what he considers to be its probable course. If the phenomena which he has observed are correct, then the organism of syphilis is a sporozoon of the class telosporidia, since the spores form at the end of the cycle. He believes that the infection is probably conveyed by the sporozoite or infective granule, and not in the spirochetal stage. This has confirmation in the period of incubation after exposure, during which time the parasite undergoes its development as described. Another confirmatory fact exists in the failure of salvarsan or mercury completely to sterilize the infected subject, although they are both fatal to the spirochetal form of the parasite. This suggests that the spores are resistant and undergo subsequent development, causing the recurrences and the later manifestations of the disease.

BOSTON MEDICAL AND SURGICAL JOURNAL.

October 17, 1912.

1. HOWARD T. KARSSNER: Function of Experimental Method in Course in Pathology.
2. JAMES S. STONE: Practical Points in Treatment of Enlarged Cervical Glands in Children.
3. JAMES L. HUNTINGTON: Midwives in Massachusetts.
4. HARRY W. GOODALL: Chronic Invagination of Ileum. Secondary to Lipoma of Intestinal Wall.

1. **The Experimental Method in the Course in Pathology.**—Karsner describes the course in experimental pathology instituted in the Harvard Medical School for the purpose of making this a living subject, and to train the student in the logical spirit of the experimental method. The interest of the student is maintained far better by active participation than by listening to lectures or seeing demonstrations, and it is by the application of such methods that the physician fills his highest function, for his clinical work then tends to become the study of pathological physiology in its highest sense, and his patient is the subject of the most painstaking investigation. In this way the student is taught to study altered functions by the exact methods of science. No attempt is made to make the students experimental physiologists, but simply to give their minds to some degree a proper scientific training, which is difficult to accomplish in any other way.

2. **Enlarged Cervical Glands in Children.**—Stone maintains that cervical adenitis is always a secondary condition; that prompt removal of the primary cause, if this is possible, is by far the best method of cure; that when the glands have broken down hygienic and medical treatment cannot alter pathological facts; and that surgical treatment is of the utmost importance, while hygienic and medical treatment are useful aids which should not be neglected, but which should not assume undue importance.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

October 10, 1912.

1. WILLIAM T. BELFIELD: Some Causes of Sterility and Impotence in Male.
2. W. J. MAYO: Surgical Treatment of Prolapse of Uterus and Walls of Vagina.
3. M. P. RAVENEL: Hygiene of Swimming Pools.
4. ALLAN J. McLAUGHLIN: Relation of Interstate Waters to Spread of Typhoid.
5. MARTIN H. FISCHER: Further Response to Some Criticisms of Colloid Chemical Theory of Water Absorption by Protoplasm.
6. HORATIO C. WOOD, JR.: Purpose and Limitations of Bioassay.
7. WALTER L. BIERING: Chloiooma.
8. PERCY W. ROBERTS: Reconstruction of Ball and Socket Joints.
9. GEORGE V. L. BROWN: Speech Relation of Cleft Palate Operation.
10. DAVID E. HOAG: Pellagra: Nervous Manifestations.
11. C. E. AIWOOD and A. S. TAYLOR: Traumatic Psychosis Associated with Old Depressed Fracture of Skull.
12. JOHN M. BERRY: Fracture of Tuberosity of Ischium Due to Muscular Action.
13. EDWIN O. JORDAN: Case for Pasteurization.

1. **Some Causes of Sterility and Impotence in the Male.**—See this JOURNAL for June 15th, page 1294.

3. **The Hygiene of Swimming Pools.**—Ravenel says artificial swimming pools must be considered as a means of spreading contagious diseases. If the water contains the germs of typhoid fever, for example, they can be taken into the system. With a pool of good capacity and with ordinary waters, a change of water weekly will keep the pool in fairly good condition. Absolute safety may be assured, at a low cost, by the addition of hypochlorite of lime.

6. **The Purpose and Limitations of Bioassay.**—See this JOURNAL for June 15th, page 1291.

7. **Chloroma.**—See this JOURNAL for June 8th, page 1225.

8. **Reconstruction of Ball and Socket Joints.**—Roberts has succeeded in reconstructing a tuberculous hip joint so as to eliminate the disease and

furnish a new and apparently serviceable head on the femur, by using an astragalus removed from the patient's own foot. This operation of transplantation was suggested by an astragalus which had been removed from a paralytic foot, and which showed striking similarity of contour, when held in certain positions, to the head and neck of the femur, and presented so large an articulating surface that it seemed possible to use a portion of the bone as a graft to replace the femoral head. The writer hopes by this operation to reduce the period of treatment of tuberculous hip joint disease from three or more years (by brace or plaster treatment) to four or five months, with less atrophy and deformity. In osteitis of the shoulder transplantation of the astragalus may be useful. Although it is desirable to obtain the astragalus graft from another patient in need of operation for deformity of the foot, there is, however, no serious objection to making an autotransplantation, as an astragalectomy properly done leaves a foot almost perfect functionally and with only trifling deformity.

MEDICAL RECORD.

October 19, 1912.

1. FRANCIS M. BARNES, JR.: Syphilitic Psychoses.
2. J. EWING MEARS: Surgical Psychoses.
3. ALFRED BRAUN: Significance and Management of Chronic Discharging Ears.
4. BAYARD HOLMES: How Department of Agriculture Treats Loco Disease; Lesson in Comparative Psychiatry.
5. HUBERT V. GUILLE: Differential Diagnosis of Alcoholic Coma.
6. FRANCIS R. HAGNER: Extirpation of Bladder for Malignant Disease.
7. DAVID I. MACHET: Celiac Parotiditis in Course of Malignant Disease of Liver.

1. **The Syphilitic Psychoses.**—Barnes suggests that certain points should be remembered in considering the possibility of syphilitic etiology in a case of mental disorder. Syphilitic disease of the nervous system has no characteristic mental symptom complex. Syphilitic mental disorders may resemble many types of psychoses. Cerebral syphilis may develop in a brain already the seat of mental disorder, and may occur conjointly with other organic cerebral disease. When mental disturbance is due to syphilis, paresis and convulsive episodes may be absent. Finally, the differential diagnosis *intra vitam* is frequently difficult and often impossible.

3. **The Significance and Management of Chronic Discharging Ears.**—Braun calls attention to the seriousness of chronic middle ear suppuration because of the common but grave endocranial complications which may attend it, among which may be mentioned epidural abscess, brain abscess, or meningitis from erosion of the thin plate of bone which separates the middle ear from the temporosphenoidal lobe of the brain. Circumsinus abscess, sinus thrombosis with pyemia, cerebellar abscess, or meningitis may follow erosion of the thin plate of bone separating the mastoid cells from the lateral sinus and cerebellum. Suppuration of the labyrinth, with complete deafness and a possible extension of the disease through the internal auditory meatus, to the posterior fossa of the skull, with meningitis or cerebellar abscess may follow disease spreading through the oval or round window. Extension to the jugular bulb may cause thrombosis of the bulb, with pyemia. Erosion of the internal carotid may cause uncontrollable hem-

orrhage. Erosion may expose the facial nerve which lies along the inner and posterior walls of the middle ear, and cause unilateral facial paralysis. As to the factors that prolong middle ear suppurative, may be mentioned the presence of hypertrophied tonsils and adenoids containing septic matter and causing repeated infections, an extremely intense infection, causing destruction of certain areas of the middle ear mucosa, and resultant necrosis of underlying bone; anemia, with low nourishment and low recuperative powers, or syphilis or tuberculosis; extension of the suppurative process into the antrum and mastoid cells; finally, the anatomical conditions within the middle ear. Suppuration with bone necrosis will rarely get well without a radical mastoid operation, the Stacke or the Schwartz—Stacke being advised by the writer.

AMERICAN MEDICINE.

September, 1912.

1. JOHN KNOTT: Calvin and Servetus: Episode in History of Religious Persecution and Scientific Suppression.
2. WILLIAM H. MEYER: Therapeutic Dose of X Ray and Application.
3. ABEL L. WOLBACH: Occurrence of Syphilis and Gonorrhea in Children by Direct Infection.
4. LEGRAND KERR: Chronic Catarrhal Colitis in Children.
5. NORMAN ROBERTS: Preservation of Teeth.

3. Occurrence of Syphilis and Gonorrhea in Children by Direct Infection.—Wolbach has observed that children are frequently the victims of gonorrhea and (less often) syphilis, girls being more often infected than boys. When introduced into hospitals, asylums, and schools, the infection spreads rapidly and assumes great virulence. Girls are often the victims of perverts and superstitious immigrants trying to rid themselves of disease. Complications sometimes appear, blindness, arthritis, proctitis, adenitis, peritonitis, and sterility. Precocious sexual knowledge and spread of infection are favored by congestion, crowding, and lack of privacy. The male immigrant carries infection to wife and children. Male children may be infected in hospitals through unclean catheters. Both sexes are equally liable to syphilitic infection, but it is more frequent in the male.

5. Preservation of the Teeth.—Roberts holds that the teeth are best preserved by intelligent use rather than by coddling and tinkering, although the latter may have to be continued (decreasingly) to atone for past follies. He advises that children should chew licorice root to give the teeth the necessary exercise.

BULLETIN OF JOHNS HOPKINS HOSPITAL.

September, 1912.

1. S. J. CROWE: Hexamethylenamine in Systemic Infections; Special Use as Prophylactic.
2. THOMAS R. BROWN: Effect of Jaundice by Ligation of Ductus choledochus upon Pancreatic Secretion.
3. JOSEPH MARSHALL FLINT: Undescended Cecum in Subperitoneal Position.
4. WILLIAM W. FORD: Present Status of Antityphoid Campaign in Germany.
5. WILLIAM W. FORD AND ERNEST M. WATSON: Seasonal Variations in Bacterial Flora of Baltimore City Water.
6. HELMUNA JEDDELL AND WILLA M. FRICKE: Midwives of Anne Arundel County, Maryland.

1. Uses of Hexamethylenamine.—Crowe states that this drug has been given for prophylactic purposes in the past three years to all patients admitted to the Johns Hopkins Hospital with injuries to the head. In thirty-five consecutive cases of undoubted basal fracture, with bleeding or escape of cerebrospinal fluid, not a single instance of secondary men-

ingeal infection was observed, whereas in thirty-five earlier cases without the drug nine deaths had occurred from complications of this nature. Almost equally good results were obtained in fractures of the vault. In a case of skull fracture, with general streptococcus septichemia, cerebral abscess, and meningitis in a child, seven and a half years of age, 939 grains of hexamethylenamine were given within twenty-two days—a daily average of 42.5 grains, recovery taking place. In forty cases of hypophysis tumor operated in, from forty to sixty grains of the drug were given in the twenty-four hours preceding operation, and even larger amounts for several days after; in thirty-one cases there were no postoperative complications, and but three of the patients finally succumbed to meningitis. Six cases of cerebrospinal fistula escaped fatal meningeal infection through the use of the drug, small doses of which were given at intervals of thirty minutes to one hour; and in two cases of acute labyrinthine infection, the progress of the disease was apparently checked by it. In but very few instances, in Crowe's experience, have toxic symptoms resulted from free administration of the drug. In ninety-five cases in which the average dose of hexamethylenamine was seventy-five grains a day for ten days, painful micturition and hematuria occurred in seven instances. Aside from personal idiosyncrasies untoward symptoms usually arise as a result of insufficient dilution. Doses of ten or fifteen grains should always be dissolved in 250 to 300 c. c. of water. Since it is often difficult to induce patients to take at one time such amounts of water, Crowe merely adds from two to three grains of the drug, which is practically tasteless, to every ounce of fluid, including broths, the patient takes, and can thus often give sixty to 100 grains a day without producing gastric or renal irritation. In very bad cases the drug is usually given by rectum, from fifty to 100 grains being dissolved in one litre of salt solution and allowed to flow in slowly.

JOURNAL OF MEDICAL RESEARCH.

September, 1912.

1. S. B. WOLBACH: Filterable Viruses.
2. S. B. WOLBACH AND J. L. TODD: Chronic Ulcers, Ulcus tropicum, from Gambia.
3. F. R. ZEIT: Congenital Atresia of Esophagus with Esophago-tracheal Fistula.
4. H. H. BULLARD: Microscopical Demonstration of Fats in Tissue Sections.
5. D. H. BERGLY: Differentiation of Cultures of Streptococcus.
6. C. FROTHINGHAM, JR., and G. R. MINOT: Effect of Injection of Bovine Bile into Rabbits.
7. S. B. WOLBACH AND C. A. L. BINGER: Parasitology of Trypanosomiasis.
8. WILLIAM H. PARK AND C. KRUMWIEDE, JR.: Relative Importance of Bovine and Human Types of Tubercle Bacilli in Different Forms of Tuberculosis.

1. The Filterable Viruses.—Wolbach reviews a field of medicine that is particularly interesting on account of the little that is known about it. Not only are there diseases in which the organism is not known, but there are those in which the exciting agent is easily visible during most of its life history, but possesses a stage when it is filterable. Thirty diseases of man and animals are included in the summary given.

2. A Study of Chronic Ulcers.—Wolbach and Todd give a somewhat cursory review of tropical ulcers as found in the Gambia. It includes the clinical observations of twenty-five cases, the tech-

nique of preparing the smears, a description of the organisms found and of the pathological histology, and a brief summary.

5. Differentiation of Cultures of Streptococci.—Bergey presents various attempts made in the differentiation of streptococci. This work was undertaken for three reasons: First, the sanitary importance of streptococci as an indication of the pollution of water through excremental matters; second, the relation of streptococci to the hygienic effects of milk; and, third, the differentiation of different types of streptococci occurring in the oral cavity. His study of cultures derived from different sources strongly emphasizes the unsatisfactory nature of the method of differentiation through carbohydrate fermentation, as is the case with all other methods thus far proposed. A possible exception is the so called complement deviation method, which the author has not tried.

7. The Parasitology of Trypanosomiasis.—Wolbach and Binger state that the purpose of the work upon which their paper is based was to study the distribution of trypanosomes in tissues and to ascertain the factors concerned in the production of the lesions of trypanosomiasis. As a result of their experimental work they conclude that the trypanosomes do not remain confined to the bloodvessels and lymphatics. They invade the connective tissue structures of all organs, the reticular tissue of lymph nodes and spleens, and the substance of the brain. The lesions found are due to the presence of the trypanosomes in the tissues. The most common form of trypanosome in the tissues and probably the one most active in the production of lesions, is the flagellate form. The paper is illustrated by a number of particularly good photomicrographs.

8. Relative Importance of the Bovine and Human Types of Tubercle Bacilli.—Park and Krumwiede bring up to date tables, presenting the reports of cases in which the type of tubercle bacillus has been determined. Altogether 1,511 cases are reviewed. The percentages deduced from the total figures cannot be applied directly. As a result of selection by many investigators, the number of cases of alimentary infection, which, as the table shows, are very likely to be bovine infections, is disproportionate. It must not be forgotten that the earlier investigators selected their cases in an endeavor to prove that man could be infected with the bovine bacillus. From an analysis of the cases reported it appears that, on the whole, bovine infection causes somewhat less than ten per cent. of the total deaths from tuberculosis in young children.

Proceedings of Societies.

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, Montreal, Canada, May 29, 30, and 31, 1912.

The President, Dr. ARPAD F. GERSTER, of New York, in the Chair.

(Continued from page 878.)

Radical Operations for Cancer of the Rectum and Rectosigmoid.—Dr. WILLIAM J. MAYO,

of Rochester, Minn., remarked that failure to remove carcinomata of the rectum by a block dissection, and not any especially malignant character of the process itself, was responsible for the pessimism of the medical profession as regards the operative cure. Cancer of the rectum was a slow process and the lymphatics were involved late. All high lying carcinomata of the rectum and terminal sigmoid should be classified in one group as rectosigmoid. These comprised the most frequent and most important of all rectal cancers. The true rectum lay between the third sacral vertebra and the levator ani muscle, and was a distinct organ. When this portion was involved in malignant disease it should be removed entire, as with a malignant process in any other organ. The terminal rectum or anal canal was involved in only about six per cent. of the cases; its lymphatics drained into the coccygeal, rectal, and inguinal glands.

Radical operations on the rectum for malignant growths as a rule injured the muscles and nerves to so great an extent that rectal control was damaged or lost. In most cases a permanent colostomy through the left rectus muscle or a sacral anus gave good functional results and permitted a wide dissection of the entire rectum with removal of the fat, fascial structures, and lymphatic glands, and greatly diminished the operative risks. Ninety per cent. of the operative deaths were due to sepsis, usually fecal leakage from attempts to conserve function. Preliminary exploration through the abdomen was necessary to avoid operating upon patients with hopeless metastasis. This might be omitted in those who for any reason were poor surgical risks, to reduce hazard. In such cases the sacral operation was indicated.

Perineal or posterior sacral operations, one stage, gave the smallest mortality. The procedure was indicated in the very fleshy, in the anemic, and in poor surgical risks. The modified sacral operation gave good space and enabled wide extirpation at a single operation. Operations through the abdomen or abdominal combined with perineal in one stage, gave the highest mortality. Operations in two stages, first, abdominal exploration with temporary or permanent colostomy, and second, a week later, after thorough cleansing of the lower fragment, complete posterior dissection, gave the best results, with a mortality approaching that of operations through the perineum and posteriorly, and less than one half the mortality of the abdominoperineal in one stage. This operation was the one of choice in the large percentage of cases if the patient was a good risk and especially if there was good prospect of restoration of function. Diverting the fecal current temporarily, greatly improved the prospect of successful union of the proximal and distal fragments of bowel.

The Treatment of Fistula in Ano, with Special Reference to the Whitehead Operation.—Dr. ARTHUR W. ELTING, of Albany, contended that it was important, not only to cure the fistula, but also to preserve a normal function of the rectum. The results of methods of operation hitherto proposed had been notoriously uncertain and unsatisfactory. Most fistula in ano originated in an infected hemorrhoid, and while an internal opening could not al-

ways be demonstrated, one usually existed, although it might be microscopical rather than macroscopical. It is this internal opening which determined the chronicity of most fistulæ. Probably not more than ten per cent. of fistulæ were tuberculous and most of these cases were associated with demonstrable pulmonary tuberculosis elsewhere in the body, usually in the lungs.

Two cardinal principles underlay the treatment of fistula in ano; first, the separation of the fistulous tract from the bowel; and, second, the closure of the communication with the bowel and removal of the diseased rectal tissue. The operation proposed was the removal of the lower bowel to a point just above the level of the internal fistulous opening by the Whitehead method of operation, with thorough curettage of all the fistulous tracts. When no internal opening could be demonstrated, the bowel was removed at the line of insertion of the levator ani muscle, care always being taken to keep the dissection near the mucosa and to avoid all injury to the sphincters. The healthy skin and mucosa were approximated with interrupted silk sutures. This method had been employed without mortality in 105 consecutive cases, ninety-six of these histologically nontuberculous, and nine histologically tuberculous. In all the cases complete and permanent cure was obtained, with preservation of normal function in all but four, in all of which more or less destruction of one or both sphincters antedated the operation.

Dr. JOHN H. GIBBON, of Philadelphia, agreed with Doctor Mayo, that a two stage operation was the one to be preferred in cases of carcinoma of the rectum with the growth situated high. By doing a preliminary colostomy he had in two instances been able through his abdominal wound to diagnose metastasis in the liver, which occurred very early in young people, and which contraindicated the performance of a radical operation. It was now his custom to perform a preliminary colostomy and then a few days later to remove the growth. He had derived great satisfaction recently from injecting the fistulous tracts of fistulæ in ano with methylene blue, which greatly facilitated their dissection.

Dr. FREDERIC KAMMERER, of New York, stated that he considered it of the greatest advantage to allow the bowel to drain for two weeks, and to irrigate the lower intestine, not only to diminish the sepsis, but also to gain another point, which was to the effect that after such drainage, made possible by the establishment of a preliminary anus, the growths in the rectum not infrequently became smaller and different in appearance, and the later operation became much more simple. He adhered to the establishment of a preliminary anus and the resection according to Kraske, after an experience with this method of about seventy cases.

Dr. W. L. ESSES, of South Bethlehem, Pa., called attention to the fact that one was apt in dealing with these cases to lose sight of the type of carcinoma with which one had to deal; it was now generally conceded that the adenocarcinoma, as compared with other forms, had little tendency to recurrence. In his experience of fifty cases he had operated in several supposedly hopeless cases in which the patients made most satisfactory recov-

eries. He agreed that preliminary colostomy was frequently followed by a change in the appearance of the tumor, much of the size of which was due to inflammation. He strongly advised that before attempting a radical operation in these cases a portion of the growth be excised and examined in order to ascertain the true malignancy of the type of tumor present.

Dr. LEWIS L. MCARTHUR, of Chicago, reported a case of diverticulitis with unusual features. The patient had, sixteen years previously, been operated upon by another surgeon for a strangulated femoral hernia, and at the time he operated, a cord of omentum was found included in the femoral ring, and below this the lower portion of the sigmoid was so constricted that there was back pressure into the colon, making a condition recognized as a diverticular projection. There were over 200 diverticuli sticking out all over the sigmoid and descending colon. This patient recovered. In 1887 he recommended in cases of carcinoma of the rectum low down, in the female past the menopause, a resection of the posterior wall of the vagina for approach to the growth, then total excision of the lower part of the rectum, and suture between the upper angle of the vaginal wall and the rectal wall above, using the vaginal tract for an artificial anus.

The Evolution of New Bone and Its Relation to the Reproduction of Joints after Ankylosis.—

Dr. JOHN B. MURPHY, of Chicago, pointed out that the accurate appreciation of the embryology of bone was essential to a fuller understanding of the pathological processes and the reproductive power of bone. Ossification occurred in long bones through the division of the cartilage cell and the disturbance of the cartilage cell membrane from what was called the ossific centre. The osteoblasts then spread through all of the cartilage of the shaft, or better, the cartilage cells became transformed or displaced by osteal cells from one epiphysis to the other. This was known as cartilage ossification. The second type of ossification which took place in flat bones, and particularly the bones of the face, was an ossification in a white fibrous tissue. In the embryo we had the representation of the bones of the face, first in a white fibrous connective tissue; ossification started in the centre or margin of this and spread through all of the tissue. Ossification of white fibrous tissue took place pathologically in the continuation of the periosteum, as represented in the white fibrous tissue of the capsule of joints, particularly of the hip joint. Ossification in white fibrous tissue took place in the white fibrous strands of the muscle in myositis ossificans. Ossification could take place, and did take place in blood clots that occurred near a lacerated periosteum, or near a fracture. This ossification was believed to be due to osteoblasts that had been carried by the blood stream from the fracture, or from the lacerated periosteum, as was advocated by Macewen. The degree of ossification was limited by the periosteum, or might be limited by the covering of the end of a bone by any of the mesoblastic type of tissues. In other words, when a fracture occurred, if the ends of the bone were covered with fascia and muscle or a quantity of fat, no effort was made by the osteoblasts of the medulla, the compact bony tissue

or the subperiosteal layer to reproduce bone across the gap. If, on the other hand, the gap between the ends of two bones was filled by a blood clot and not by an organized connective tissue in fractures of the long bones, a large area, an inch, an inch and a half, or two inches, might be spanned by the osteogenic elements in their efforts to reunite the bone. In fractures of the flat bones there was no such prodigious effort made to produce a union; they rarely spanned one quarter or one half inch in their effort at the reestablishment of union after fracture. This was noticeable in the mandible, and in the trephining operations and fractures of the skull.

We could to advantage divide the osteogenic elements of bone, or liken the osteogenic elements of bone to that of a tree, the medulla representing the trunk and always carrying the greatest osteogenic potency; the Haversian canals, canaliculi, and lacunæ representing the branches of the tree, always carrying osteoblasts on the walls of the Haversian vessels; and the leaves were represented by the subperiosteal osteogenic layer in which, in youth, there was an enormous osteogenic potency, in middle age a mild degree, and in advanced age no osteogenic power. The periosteum of the epiphysis had no subperiosteal osteogenic potency or inductiveness. The fact that this had no bone producing power accounted for the absence of callus and osteomata on the side of joints following fractures of the epiphysis. It would, therefore, be seen in the regeneration of bone we must utilize either the osteoblasts of the medulla, the Haversian canals of the lacunæ, or the osteogenic inductiveness of the subperiosteal zone. We could set it down as a fairly well established fact, that in bone transplantation and bone grafting and bone reunions the following principles must be complied with: 1. The periosteum fully detached from bone, and (a) transplanted into a fatty or muscle tissue bed in the same individual, if he be young, might produce a lasting bone deposit; (b) transplanted into another individual or animal of the same species and under the same conditions, it rarely, if ever, produced a permanent bone deposit; (c) transplanted into another species it never produced a permanent bone deposit.

2. Periosteal strips elevated at one end from the bone and attached at the other, if turned out into muscle or fat, reproduced regularly bone on their under surface for a greater portion of their entire length.

3. Transplanted into other individuals or animals of same species and in contact at one end with exposed or freshened bone it rarely produced permanent bone, even for a small extent at its basal attachment, and never produced bone for its full length.

4. Bone with its periosteum transplanted into muscle, fat, etc., in the same individual, and free from bony contact, practically always died and was absorbed, except in the case of very young children or infants. Transplanted into another species it was always absorbed.

5. Bone transplanted without the periosteum into the muscle or cellular tissue always died and was ultimately absorbed.

6. Bone with or without periosteum, transplanted in the same individual and in contact with other liv-

ing osteogenic bone at one or both of the ends of the transplanted fragment, always became united to the living fragments and acted as a scaffolding for the reproduction of new bone of the same size and shape as the transplanted fragment, if asepsis was attained. This new bone increased to such size as was necessary to give the support required by Nature in the extremity in which it had been placed. It would scaffold the production of new bone even into the joint when it was surrounded by capsule, and tuberosities were produced in about the regular location, as in the normal anatomical conformation.

7. The transplanted fragment, no matter how large or how small, was always ultimately absorbed. The rôle it played was to give mechanical support to the capillaries and bloodvessels with their living osteogenic cells, as they advanced from the living bone at both ends of the transplanted fragment into the Haversian canals, canaliculi, and lacunæ of the transplant. New lamellæ were deposited around the new capillaries, and these lamellæ fitted into, and adjusted themselves in the graft, so that the bony union was actually formed and mechanical support given long before the transplant was entirely absorbed and replaced by new bone. Ultimately, all of the transplant disappeared as new lamellæ were formed by the osteoblasts, and the graft lamellæ were removed by the osteoclast.

The practical application of bone transplantation was to the following conditions:

1. To correct deformities resulting from defects of development, as aplastic extremal bones—radius, ulna, humerus, tibia, fibula and femur, and congenital saddle nose, aplasia of the mandible, etc.

2. To reproduce union in ununited fractures.

3. To replace bone removed by destructive infections, osteomyelitis, tuberculosis, lues, etc.

4. To restore or supplant fragments dislodged or destroyed by fractures, as the head of the humerus, head of femur, shaft of tibia.

5. To replace bone removed for nonmalignant neoplasms, cysts, myeloma, osteitis fibrosa, etc.

6. To replace bone removed for encapsulated malignant disease, as giant cell and chondral sarcoma, etc.

Acute Inflammation of Long Bones.—Dr.

ROBERT G. LE CONTE, of Philadelphia, drew attention to the fact that trauma still played a considerable part in predisposing to the disease, while the exciting cause was one of the organisms of suppuration, principally *Staphylococcus pyogenes aureus*. He laid stress on the localization of the starting point of the lesion, whether it was in the cortex, the medullary cavity, the end of the bone, or the epiphysis, for successful treatment depended upon opening up the original focus at the primary operation. According to the treatment, he divided them into five groups, in the first three of which the original focus of the disease was more or less completely removed at the primary operation, and in the last two groups the primary focus was not opened at the first operation. The contrasting of these groups emphasized clearly the necessity of a prompt operation, with adequate drainage of the primary focus of infection and the removal of all diseased bone at the primary operation, even if that removal

entailed a more or less complete resection or excision of the shaft. When the condition of the patient warranted it at the primary operation, such radical treatment greatly shortened the time of convalescence, prevented further destruction of bone, lessened the subsequent number of operations, and reduced the mortality.

Surgery of the Long Bones.—Dr. JAMES E. MOORE, of Minneapolis, observed that the open treatment of fractures had an established place in surgery, but at present was being overdone. The Lane plate was the best device for fixing fragments through open wounds. The plates requiring removal had usually been very close to the surface. In no instance had he known disaster to follow the use of the plate. The plate could not be used in compound fractures satisfactorily, because of the lowering of the resisting power of the tissues by the accident. The wound was sometimes healed over a plate after infection. The use of the bone splint taken from the patient's own person was doubtless our best resource in patients who had not good bone producing power. The greatest advance in surgery of the long bones in recent years was in treatment of fracture of the neck of the femur. Since using the two way pull of Maxwell he had been as confident of securing bony union in fracture of the neck of the femur as in the shaft. Fracture of the neck of the femur was quite common in children, and very commonly neglected. Nonunion was the usual result after treatment by the older methods, but even then the case was not hopeless, for the fracture could be successfully treated through an open wound. Notwithstanding the fact that osteomyelitis furnished a large proportion of surgery of the long bones, the disease was very commonly neglected, so that the surgeon was called upon to operate for the relief of the results of the disease rather than for the disease itself. The use of the Moorthof bone wax following the removal of sequestrum, was followed by brilliant results when the proper technique was observed.

Operative Treatment of Fractures.—Dr. JOHN B. WALKER, of New York, said, that in operating he tried scrupulously to carry out every minute detail of Lane's technique, for there was no province of surgery in which results depended more upon the mechanical skill and cleanliness of the operator. Under no circumstances whatever did the fingers enter the wound. After the strong plate had been most satisfactorily applied by snug screws to the shaft of the femur it would seem as if no motion were possible. If, however, moderate strain was applied to the leg, some motion at the fractures could be appreciated. If this was continued, the screws would become loosened and the fragments disarranged. For this reason no strain must be permitted. The plate must be considered only of value merely to approximate the fragments and not at all sufficient to hold them. For this purpose the whole reliance must be placed upon the solid external plaster cast, most accurately and carefully applied. If this did not succeed in absolutely immobilizing the fragments, the operation might fail. There had been no mortality. In only one case was the plate removed, and that was in one of the earlier cases when he had been somewhat apprehensive, but when

he cut down to the plate the screws were solid and it would have been unnecessary. Operations performed under the methods indicated had been followed by excellent results. If this were possible in the cases of old, long standing, difficult fractures of the femur, how much more easily and more quickly could it be done in recent cases, and with how much greater safety and surety of securing an earlier and better functional result. It now appeared that sufficient evidence had been shown definitely to recommend operations for fractures of the femur in such cases as where reduction was inadequate. Adequate reduction required that the ends remained in apposition without obvious angulation or axial rotation, and that the shortening be not greater than one half inch. Further efforts to secure reduction by extension should not be continued after seven days, as it had been frequently demonstrated that where overriding could not be pulled down in that time, no benefit could be gained by longer traction. Results warranted the belief that operations were indicated upon the femur in fractures of the upper and lower thirds, when the fragments were much displaced (as they frequently were) and in spiral fractures of the shaft; upon the humerus, in fractures of the surgical neck with dislocation or rotation of the head of that bone; and in fractures just above the elbow joint; upon the radius and ulna when both bones were fractured; upon the radius when fractured at the junction of the upper and the middle thirds; and at the elbow and ankle joints, whenever the fragments could not be replaced satisfactorily. Failures or disasters attending the open treatment of fractures, were not due to the broad principle underlying the undertaking, but rather to inexperience on the part of the operator, or to faulty technique.

Dr. FRANCIS J. SHEPHERD, of Montreal, mentioned the fact that the laity at present considered it necessary to obtain, as had been said, almost a cabinet maker's apposition of fragments, and that since the use of the x ray it had been shown that this seldom was obtained. He considered it important to educate everybody to understand that it was the functional result, and not the anatomical result toward which attention should be directed.

Dr. LEWIS L. MCARTHUR, of Chicago, suggested the advisability in bad cases of reducing the fracture, if possible, then taking an x ray picture and telling the patient that such was the best result to be obtained by mechanical methods, and allowing the patient the privilege of deciding, in case the position was not satisfactory, whether or not he desired operative interference, always explaining to him, however, that a functional result could be obtained without a perfect anatomical result.

Dr. ALBERT VANDER VEER, of Albany, cited instances in which x ray pictures had not been at all encouraging as to the end results to be hoped for, but in which the patients ultimately obtained most satisfactory functional results.

Dr. JOHN B. MURPHY, of Chicago, said he considered osteomyelitis one of the most important subjects before the profession to-day, being in reality a condition like a gangrenous appendix in the end of the bone. He emphasized the necessity for early and radical operation, stating that a delay of

forty-eight hours was not only extremely serious, but often fatal. In these cases he suggested the advisability of utilizing the method of bone transplantation, after resection of the diseased portion.

The Conservative Treatment of Giant Cell Sarcoma, with the Study of Bone Transplantation.—Dr. JOSEPH C. BLOODGOOD, of Baltimore, stated that it was a question whether the so called giant cell sarcoma should be included among sarcomas. He preferred the term "giant cell tumor." Up to the present time he had been unable to find an authentic case in which this giant cell tumor produced death by metastasis. The evidence so far demonstrated that amputation and, in many instances, resection in continuity, were unnecessary, or avoidable, surgery. Curetting should be the operation of choice in the first instance. It should be performed under an Esmarch bandage, the bone cavity disinfected with pure carbolic acid, followed by alcohol; if the resulting cavity was large, healing would be accelerated by filling the cavity with a piece of transplanted bone. After resection the wound should also be disinfected, as after curetting; if possible, the defect should be filled by a piece of bone taken from the shaft of the bone involved by splitting longitudinally the remaining uninvolved bone. If this was not feasible the tibia was the best bone from which to take the transplant. The diagnosis of a medullary giant cell tumor could not be made positively until the tumor was explored with the knife. The tumor tissue in the medullary cavity was composed chiefly of red, friable, granular tissue, resembling edematous granulation tissue; mixed with it there might be areas of firmer, white fibrous tissue. There might be cysts filled with blood. The immediate frozen section was absolutely characteristic. The only malignant medullary tumor which might be mistaken for a giant cell tumor was the bone aneurysm. Here we had a blood cavity lined by a narrow zone of tumor tissue within a bone shell. The frozen section of this tumor tissue would immediately distinguish it from the giant cell tumor. Resection of the bone with its periosteum should be done for the bone aneurysm. The chances of a cure were small, because this form of sarcoma metastasized early. The only hope for increasing the number of cures in the more malignant forms of sarcoma of bone lay in the early and systematic diagnostic employment of the x rays. All patients complaining of localized pain in bone or joint, or of fatigue and limp after exercise, should be examined with the x rays. All cases of simple sprain or contusion of bone or joint should be subjected to the x rays for diagnostic purposes, if the primary symptoms did not subside rapidly, or after they returned, following a period of latency.

Dr. WILLIAM B. COLEY, of New York, disagreed with Doctor Bloodgood in the statement that giant celled sarcoma never underwent metastasis; from his experience he concluded that there were certain cases of giant celled sarcoma in which it was not safe to use conservative treatment and in which even the most radical treatment, amputation of the proximal joint, offered little or no chance of a cure. He referred to twenty cases in which the clinical diagnosis of giant cell sarcoma was confirmed by the microscope; ten were of periosteal, ten of cen-

tral, origin. In fifteen of the twenty cases the mixed toxins of erysipelas and *Bacillus prodigiosus* were used before or after operation. In ten cases amputation was performed. In nine cases either no operation or a conservative one (curetting) was done; in three of the nine cases the disease was too far advanced for the most radical operation, even a hipjoint amputation, and in one case, a subperiosteal sarcoma of the femur involving the lower third, metastasis had taken place. This patient was now well ten years after the toxine treatment was begun. In addition there had been two recent cases of sarcoma of the long bones in the hands of English surgeons, in which the limb was saved by the use of the mixed toxins. He reported twenty-one cases, out of a personal series of 107 cases of sarcoma of the long bones, in which the patient lived and remained well more than three years after operation; he believed the value of the mixed toxins in many of these cases to be quite beyond question.

Dr. JOHN B. MURPHY, of Chicago, said that in judging of the malignancy of a giant cell sarcoma he relied more upon the x ray picture than upon the microscopical examination; that the disease in malignant cases would be found to cross the epiphyseal line, while in the more benign form it did not do so. He approved more of resection than of curettement in these cases, following the resection of diseased bone by the transplantation of another piece of bone for the maintenance of support.

Letters to the Editor.

A PROTEST TO THE DEPARTMENT OF HEALTH.

BROOKLYN, NEW YORK, October 21, 1912.

To the Editor:

In the matter of the application of the Department of Health to the Board of Estimate and Apportionment for the appropriation of a large sum to build and equip a hospital for the treatment of venereal diseases, we submit the following statements made on behalf of and by the order of the Medical Board of the Kings County and Branch Hospitals through its executive committee.

We believe that the legitimate province of the Department of Health is the prevention and not the treatment of disease; that such an institution, if established, would reach so small a number of patients venerated infected, that it would have no appreciable influence in limiting the spread of venereal diseases; that at present the segregation of all patients so suffering is entirely impracticable; that the existing institutions are amply able to take care of the demands made on them by this class of patients; and that a municipal department has no right to assume the functions of a practising physician.

The publication of this protest will give to the profession of the city, information of this new attempt on the part of the Department of Health to encroach on another field of professional work:

To the Honorable Alfred E. Steers, president of the Borough of Brooklyn and the Budget Committee of the Board of Estimate and Apportionment, city of New York:

We protest against granting the appropriation for the hospital for patients suffering from venereal diseases, proposed by the Department of Health, to be under its jurisdiction and management on the following grounds:

1. That the logical function of this municipal department is the prevention and not the treatment of disease.
2. That such a hospital is, as a matter of demonstrable fact, entirely unnecessary and that its construction and maintenance would be a source of expense to the city, absolutely unjustified; for the reason that the hospitals of the Department of Charities are amply sufficient to treat, in isolation, all patients of this nature who cannot afford private medical attendance. In the event of more facilities being needed, they could be added to the existing equipment of this department's hospitals at a fraction of the proposed initial expense and at no appreciable increase in the cost of maintenance.

3. That the expert and special treatment of such diseases is already provided for in the hospitals of this department and that an equivalent grade of medical supervision could not be retained by the Department of Health without a very great pecuniary outlay. Moreover, the organization of such a service would inevitably lead to friction between two important departments of the municipal government and decrease the efficiency of the work of each.

4. That the Department of Health does not efficiently manage and control those communicable and contagious diseases now supposedly under its jurisdiction. It does not provide in its existing institutions for certain diseases known to be communicable and dangerous to keep in a general hospital, namely, whooping cough, mumps, and erysipelas. The attitude of some of the officials of the Department of Health is that cases of contagious disease occurring in a general hospital should be kept in the institution in which they originated, to the obvious jeopardizing of a great number of (by reason of their various illnesses) unusually susceptible patients.

5. Speaking for the Kings County Hospital, the Kingston Avenue Hospital, of the Department of Health, now declines to take entire charge of the patients sent to it from our institution; for instance, a patient with scarlet fever and a broken arm, or one with measles and pneumonia; holding that the noncontagious factors must be treated by our own staff. How greatly less capable would its staff be to cope with the widespread complications of the various venereal diseases!

6. That in much less complex and delicate fields than the one projected, for instance, in the alleged medical education of school children; while the intent of the Department of Health may have been good, its practical application has been productive of a great deal of hardship to parents and an infinity of harm to pupils, by reason of the entire incapability of many of its inspectors to pass on conditions of which they have not the slightest accurate knowledge; and also by reason of utterly incompetent nurses who, at the instigation of, and with the countenance of the Department of Health, are continuously breaking the spirit, if not the letter, of the State laws regulating the practice of medicine.

7. That in many other phases of its activities the Department of Health far transcends the most liberal interpretation of its legal powers and arbitrarily assumes to define the rights of the citizen in his relation with his medical attendant with the privilege of following the latter's advice, arrogating a censorship over his intimate and personal affairs, entirely unconstitutional and equally intolerable, in no direction more clearly exemplified than in this, its latest demand.

For these reasons, we ask for a denial of the request of the Department of Health for this appropriation.

CALVIN F. BARBER, President Medical Board.

S. J. McNAMARA, Chairman Executive Committee.

H. ARROWSMITH, Secretary (*pro tempore*).

WILLIAM BROWNING.

JOHN R. STRIVERS.

H. H. MORTON, Attending Genitourinary Surgeon.

Members of the
Executive Committee.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Diagnostic Methods. Chemical, Bacteriological, and Microscopical. A Textbook for Students and Practitioners. By RALPH W. WEBSTER, M.D., Ph.D., Assistant Professor of Pharmacological Therapeutics and Instructor in Medicine in Rush Medical College, University of Chicago; Director of Chicago Clinical Laboratory. Second Edition, Revised and Enlarged, with Thirty-seven Colored Plates and 164 Other Illustrations. Philadelphia: P. Blakiston's Son & Co., 1912. Pp. xxxv-682. (Price, \$4.50.)

This new edition of Webster's work presents the novel feature of being smaller in bulk and weight than the first edition; at the same time it contains about forty more pages of reading matter. There is much new material in this edition, and some deletions have also been made. Among the insertions may be mentioned the antiformin method for tubercle bacilli; Much's method for staining tubercle bacilli; Neubauer and Fisher's test for gastric carcinoma; Gross's method for trypsin; Kendall and Day's method of isolation of typhoid bacilli from feces; Folin's newer methods for urinary sulphur compounds; the formaldehyde method for ammonia in urine; colloidal nitrogen; Benedict's and Bang's tests for glucose in urine; the phenolsulphonphthalein test for functional activity of the kidneys; Wright and Kinnicut's method of counting the blood plates; sulphemoglobinemia; Noguchi's method of cultivating *Treponema pallidum*; the tuberculin and huetin reactions; Ghoreyeb's and Burri's method of staining *Spirocheta pallida*; and Noguchi's butyric acid test. The book can be confidently recommended to the physician as a serviceable and trustworthy guide. It is scientifically accurate and up to date, and it is also more readable than most of its competitors. Its usefulness is considerably

increased by the fact that the author appreciates that laboratory work is accessory, and therefore secondary to clinical work. Diagnosis has to be made by the attending physician, at the bedside; and not by a laboratory worker who has never seen the patient, and who need not be a physician.

Practical Anatomy. The Student's Dissecting Manual. By F. G. PARSONS, F.R.C.S. Eng., Lecturer on Anatomy at St. Thomas's Hospital and at the London School of Medicine for Women, and WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S. Eng., Lecturer on Anatomy at the London Hospital. In Two Volumes. Volume I: The Head and Neck, the Lower Extremity. Volume II: The Thorax, Abdomen, Pelvis, Upper Extremity. New York: Longmans, Green, & Co.; London: Edward Arnold, 1912. Pp. Volume I, xvi+467; Volume II, vii+382. (Price, \$2.40 a volume.)

In this textbook the authors have been able to produce a work entirely free from unnecessary detail. The facts are put in sequence in a very pleasing simplicity of language appealing at once to the student. It is a most helpful guide to thorough dissection.

Practical Eugenics. Four Means of Improving the Human Race. A Lecture by WILLIAM J. ROBINSON, M.D., President of the American Society of Medical Sociology, President of the Northern Medical Society of the City of New York, etc. New York: The Critic and Guide Company, 1912. Pp. 93. (Price, 50 cents.)

Doctor Robinson is a well known partisan of the rational control and limitation of offspring, and he presents in this little work some of the reasons which have led him to his conclusions. He is an advocate of obligatory health certificates for candidates for matrimony, and sees hope for better health, especially in women, through systematic instruction in the scientific methods of venereal prophylaxis. As there is strong and well organized opposition to such views, larger works than this will soon become necessary, fairly to present the eugenic side of the question. As far as it goes, however, Doctor Robinson's work is well done.

Meetings of Local Medical Societies.

MONDAY, November 4th.—German Medical Society of the City of New York; Utica, N. Y., Medical Library Association; Niagara Falls, N. Y., Academy of Medicine; Practitioners' Club, Newark, N. J.; Hartford, Conn., Medical Society; Brooklyn Hospital Club; Clinical Society of the New York Throat, Nose, and Lung Hospital; Roswell Park Medical Club, Buffalo; Hornell Medical and Surgical Association.

TUESDAY, November 5th.—New York Academy of Medicine (Section in Dermatology); New York Neurological Society; Buffalo Academy of Medicine (Section in Surgery); Ogdensburg Medical Association; Clinical Society of the West Side German Dispensary and School for Clinical Medicine; Oswego Academy of Medicine; Syracuse Academy of Medicine; Medical Association of Troy and Vicinity; Long Island Medical Society; Amsterdam City Medical Society; Lockport Academy of Medicine; Bridgeport, Conn., Medical Association.

WEDNESDAY, November 6th.—Brooklyn Society for Neurology; Society of Alumni of Bellevue Hospital; Bronx Medical Association; Harlem Medical Association; Elmira Academy of Medicine; Psychiatric Society of New York; Society of Alumni of St. John's Hospital, Brooklyn; Schenectady Academy of Medicine.

THURSDAY, November 7th.—New York Academy of Medicine (stated meeting); Brooklyn Surgical Society; Practitioners' Club, Buffalo; Geneva Medical Society; Danville Medical Association.

FRIDAY, November 8th.—New York Academy of Medicine (Section in Otolaryngology); New York Society of Dermatology and Genitourinary Surgery; Eastern Medical Society of the City of New York; Society of Ex-interns of the German Hospital in Brooklyn; Saratoga Springs Medical Society.

SATURDAY, November 9th.—Therapeutic Club, New York.

Official News.

Births, Marriages, and Deaths.

Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the Public Health Service for the seven days ending October 23, 1912.

Duffy, B. J., Assistant Surgeon. Relieved from duty on the Revenue Cutter *Tahoma* and directed to proceed to Honolulu, Hawaii, and report to the chief quarantine officer for duty. **Earle**, Baylis H., Passed Assistant Surgeon. Directed to assume temporary charge of the Marine Hospital, Port Townsend, Wash. **Gillespie, J. M.**, Assistant Surgeon. Relieved from duty at Honolulu, Hawaii, and directed to proceed to Manila, P. I., and report to the chief quarantine officer for duty. **Hasseltine, H. E.**, Assistant Surgeon. Granted leave of absence for two months and fifteen days, from October 22, 1912. **Preble, Paul**, Assistant Surgeon. Relieved from temporary duty at Ellis Island, N. Y., and directed to report to the director of the hygiene laboratory for duty. **Roberts, Norman**, Passed Assistant Surgeon. Relieved from duty at the hygiene laboratory, and directed to proceed to Gloucester City, N. J., and report to Surgeon J. H. Oakley for duty.

Boards Convened.

Boards of medical officers convened to meet Monday, November 11, 1912, at 10 o'clock a. m., for the examination of candidates for admission to the service as assistant surgeons, as follows:

Stapleton, N. Y., Surgeon H. W. Austin, chairman; Surgeon E. K. Sprague, member; Passed Assistant Surgeon W. A. Korn, recorder.

Chicago, Ill., Surgeon J. O. Cobb, chairman; Surgeon H. S. Mathewson, member; Assistant Surgeon L. R. Thompson, recorder.

New Orleans, La., Surgeon J. H. White, chairman; Passed Assistant Surgeon R. H. von Ezdorf, member; Passed Assistant Surgeon A. D. Foster, recorder.

San Francisco, Cal., Surgeon R. M. Woodward, chairman; Passed Assistant Surgeon J. D. Long, member; Passed Assistant Surgeon Hugh de Valin, recorder.

Board of medical officers convened to meet at the Bureau, Monday, November 11, 1912, at 10 o'clock a. m., for the examination of candidates for admission to the service as assistant surgeon. Detail for the board: Surgeon C. P. Wertenbaker, chairman; Surgeon H. S. Cumming, member; Passed Assistant Surgeon Joseph Goldberger, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending October 26, 1912.

Ebert, R. C., Colonel, Medical Corps. Granted leave of absence for one month, effective October 17th. **McKellar, H. R.**, First Lieutenant, Medical Corps. Ordered to Warren Springs, Ore., to relieve Lieutenant L. O. Tarleton, who will proceed to Vancouver Barracks, Wash. **Raymond, H. L.**, Lieutenant Colonel, Medical Corps. Relieved from duty at headquarters of the Western Division, to enable him to take transport on November 5th for station at Honolulu. **H. T. Sievers, R. E.**, First Lieutenant, Medical Reserve Corps. Reports arrival home at Louisville, Ky., and after four months' leave of absence will be placed on the inactive list of the Medical Reserve Corps. **Thomason, H. D.**, Captain, Medical Corps. Relieved from duty in the office of the Chief of the Division of Militia Affairs, Washington, D. C. **Trinder, J. H.**, First Lieutenant, Medical Corps. Ordered to Fort Crook, Neb., for temporary duty. **Wickline, W. A.**, Captain, Medical Corps. Relieved from duty as commanding officer of Field Hospital No. 3 and reported for duty at the Walter Reed Hospital, Washington, D. C. **Wilde, A. G.**, First Lieutenant, Medical Corps. Granted twenty days' leave of absence from October 23, 1912.

Born.

Bryant.—In Chester, Pa., on Friday, October 11th, to Dr. and Mrs. F. Otis Bryant, a daughter.

Married.

Brownson—Angell.—In Chicago, on Monday, October 21st, Dr. Orestes A. Brownson, of Dubuque, Iowa, and Miss Marie Angell. **Chamberlain—Stevens.**—In Malden, Mass., on Tuesday, October 22d, Dr. George Elliott Chamberlain and Miss Edith Louise Stevens. **Fagan—MacNeil.**—In New York, on Thursday, October 17th, Dr. Albert Lansing Fagan, of Herkimer, N. Y., and Miss Henrietta Virginia MacNeil. **Ferguson—Twyman.**—In Charlottesville, Va., on Tuesday, October 22d, Dr. Walter Smith Ferguson, of Lynchburg, and Miss Nannie Thomas Twyman. **Gordon—Trevil.**—In Kansas City, Mo., on Friday, October 11th, Dr. William Murray Gordon and Miss K. Lucile Trevil. **Gravatt—Day.**—In Woodland Heights, Va., on Wednesday, October 16th, Dr. Arthur B. Gravatt, of Calno, Va., and Miss Hilda Day. **Hair—Kinney.**—In Philadelphia, on Monday, October 21st, Dr. Judson E. Hair, of Baltimore, and Miss Ivy F. Kinney. **Kindig—Fehr.**—In Philadelphia, on Thursday, October 17th, Dr. Rudolph Kindig and Mrs. Bertha Fehr. **Lawrence—McCarthy.**—In Philadelphia, on Wednesday, October 23d, Dr. Jackson Stuart Lawrence and Miss Florence A. McCarthy. **Lukens—Brockle.**—In Philadelphia, on Wednesday, October 23d, Dr. George Thomas Lukens, of Conshohocken, and Miss Anna Elizabeth Brockle. **Martin—Alexander.**—In Morrisville, N. J., on Tuesday, October 15th, Dr. William John Francis Martin and Miss Anna B. Alexander. **Nihiser—Lapp.**—In Baltimore, on Wednesday, October 2, Dr. Winton Markwood Nihiser and Miss Flora E. Lapp. **Owens—Weems.**—In Winchester, Va., on Wednesday, October 23d, Dr. Samuel Logan Owens, of Washington, D. C., and Miss Clara Mullikin Weems. **Phipps—Brock.**—In Washington, D. C., on Monday, October 21st, Dr. Cadis Phipps, of Boston, and Miss Ruth Elizabeth Brock. **Yerkes—Wright.**—In Alton, Ill., on Tuesday, October 15th, Dr. Lathy L. Yerkes and Miss Cora Wright.

Died

Bradfield.—In Grand Rapids, Mich., on Friday, October 18th, Dr. Thomas D. Bradfield, aged sixty-nine years. **Bradner.**—In Englewood, N. J., on Sunday, October 6th, Dr. William Batchelor Bradner, aged seventy-seven years. **Carney.**—In Tompkinsville, Staten Island, N. Y., on Tuesday, October 22d, Dr. Sydney Howard Carney, aged seventy-five years. **Davis.**—In Milton, Pa., on Thursday, October 17th, Dr. Sidney Davis, aged fifty-nine years. **Dudley.**—In Brooklyn, N. Y., on Tuesday, October 22d, Dr. William Frederick Dudley, aged fifty-one years. **Emley.**—In Kansas City, Kan., on Tuesday, October 15th, Dr. Samuel Charles Emley, aged thirty-eight years. **Findlay.**—In Parkville, Mo., on Thursday, October 3d, Dr. Francis Findlay, of Franklinville, N. Y., aged seventy-eight years. **Fisher.**—In Clarksville, Texas, on Monday, October 7th, Dr. W. N. Fisher. **Giddings.**—In Gardiner, Me., on Wednesday, October 16th, Dr. Wooster Parker Giddings, aged seventy-two years. **Holt.**—In Worcester, Mass., on Saturday, October 19th, Dr. Henry Frye Holt, aged thirty-five years. **Huggins.**—In Sanborn, N. Y., on Monday, October 21st, Dr. William Quincy Huggins, aged seventy-one years. **Jaches.**—In Brooklyn, on Sunday, October 20th, Dr. Joseph I. Jaches, aged fifty-two years. **Jeter.**—In Millington, Del., on Tuesday, October 15th, Dr. N. M. Jeter, aged fifty years. **Johnson.**—In Nashville, Tenn., on Tuesday, October 15th, Dr. Anthony W. Johnson, aged seventy-two years. **Lillibridge.**—In Scranton, Pa., on Monday, October 14th, Dr. Alice Lillibridge. **Riley.**—In Cleveland, Ohio, on Monday, October 14th, Dr. Thomas Francis Riley, aged forty-seven years. **Stitt.**—In Berkeley, Cal., on Monday, October 14th, Dr. James Warren Stitt, aged fifty-eight years.

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GALLSTONES.*

BY PARKER SYMS, M. D.,
New York.

Though gallstones are of very common occurrence, and though they give rise to a distinct train of symptoms, their importance and significance are scarcely recognized. This has been a great misfortune to humanity and has been a reproach to the medical profession. Fortunately, our knowledge of this subject is receiving wider recognition by medical men, and a decreasing proportion of gallstone sufferers are left to neglect and consequent disaster; for early recognition and early operation are the main factors of success in the treatment of gallstone diseases.

Gallstones are more common in women than in men. Obviously the proportion will vary according to different statisticians, but it is undoubtedly true that they are found three or four times more frequently in women than in men. They are rare in youth, and belong more particularly to the middle period of life. They seldom exhibit symptoms before the twenty-fifth year. The commonest time for their manifestation is between the thirtieth and the fiftieth year. More than seventy-five per cent. of cases occur after the twenty-fifth year of age. In a large proportion of cases they give rise to only trivial symptoms, and they are not usually recognized until they have existed for a long time. The symptoms that are recognized as classic indications are unfortunately manifested in a minority rather than a majority of cases.

Gallstones are always the result of infection. They depend for their formation on a change in the character of the bile. They result usually from an inflammation of the gallbladder or the bile ducts coincident with two things, that is to say, a stagnation of the flow of bile and a change in the character of the bile. They frequently if not usually are formed around a nucleus. This nucleus may be merely a mass of thickened bile or a mass of mucus or some epithelium which has been shed during the process of inflammation. These nuclei may be made up of casts of some of the small ducts which have been washed into the gallbladder or into the larger bile ducts. These casts are the result of what Mekeel called "lithiatic catarrh."

As said above, gallstones are always the result of

infection. This infection may be due to one of a large variety of pathogenic bacteria, or there may be a mixed infection. As in all infectious lesions of the alimentary tract the colon bacillus plays a very important part. This is true also of the bacillus of typhoid fever. Living typhoid bacilli have been found in the centre of gallstones which have existed for many years. These typhoid bacilli have been found in cases where there has been a distinct history of an attack of typhoid fever, and they have also been found in cases where such a history has been entirely wanting. We know that staphylococci, streptococci, and other forms of pyogenic bacteria are frequent causes of inflammation of the biliary tracts and thus become the cause of gallstones.

Much has been written of the mode of access of the bacteria to the biliary passages. Undoubtedly this invasion takes place by three different avenues: 1. By direct ascent from the duodenum through the common duct; 2, through the lymphatic system; 3, through the portal system. Doubtless infection through the portal system is the most common.

The mechanism of gallstone production is really dependent upon morbid changes in the character of the bile. These changes in the character of the bile are dependent upon corresponding changes in the mucosa of the biliary passages. In other words, they are dependent upon inflammation of the mucous membrane, the result of infection. McCarty has classified the various forms of inflammation, but he has pointed out that this variety is really one of stages and degree rather than of special forms of lesion. He has also shown that the character of the bile corresponds with the stage of the inflammatory process.

The very acute cases are not the ones that form stones, it is the chronic, long continued inflammation that produces gallstones. They are a matter of comparatively slow growth, dependent on the fact that the bile has been in an abnormal condition, and in a state of more or less stagnation for a considerable time.

Gallstones may form in any part of the biliary system, but undoubtedly the majority find their origin in the gallbladder. This is natural, for the gallbladder is a reservoir for the bile, and when stagnation takes place the bile will be at rest in the gallbladder more than in any other part of the biliary system, and the formation of stones can most readily take place in that situation.

In studying the etiology of gallstones, one should bear in mind the fact that there is a close association between the liver with its biliary system,

*Read at Poughkeepsie at the annual meeting of the First District Branch of the Medical Society of the State of New York, October 4, 1912.

the stomach, the intestines, and the pancreas. This is true embryologically, histologically, and physiologically; it is also true pathologically. Later on I wish to speak particularly of the associated symptoms of diseases of the biliary system, of the stomach, and of the appendix. There is no doubt that inflammation of the duodenum may extend and produce an inflammation of the common duct and of the entire biliary tract. Obviously, if this is true, duodenal ulcer becomes a causative factor in the formation of gallstones. Anything that disturbs the function of the duodenum, resulting in irritation of that organ, causing spasm or congestion or swelling of its mucous membrane, may result in obstruction to the outflow of bile through the common duct. It will be readily seen that such a retardation in the flow of the bile may favor the formation of gallstones, provided this bile has been infected and is in an abnormal condition of viscosity. Chronic appendicitis will cause just such disturbance of the functions of the pylorus and of the duodenum. Thus, chronic appendicitis may become a causative agent in the production of gallstones. What has been said of duodenal ulcer in this connection is also true of gastric ulcer, but not to the same extent.

SOME RESULTS OF GALLSTONES.

Having considered thus briefly the causation of gallstones, let us turn our attention to some of their effects. Gallstones may produce infection and inflammation of the biliary tracts; may produce inflammation of the liver, may produce adhesions, involving any of the organs in the region, resulting in deformity, obstruction, and impaired function of any of these organs; they may result in ulceration or gangrene of the gallbladder or bile ducts; they produce pancreatitis, acute, subacute, or chronic; they may be productive of glycosuria, hence a form of diabetes. And last but not least, they are the most potent cause of cancer of the biliary system. In fact, gallstones are a precancerous condition.

While gallstones are known to be caused by infection and inflammation, it is equally true that they tend to provoke further infection and to keep up and produce inflammation. The so called latent gallstone, doing no harm, does not exist. A gallstone is always productive of more or less harm. It produces at least a mild form of inflammation and irritation. At any time it may set up a most violent and destructive inflammatory process.

The inflammation may be confined to the mucosa, and the symptoms produced may be mild. Or the inflammation may extend to the peritoneal surface and thus be communicated to any or all of the organs in this region. Peritonitis may result in adhesions which will more or less cripple the organs involved. For instance, adhesions due to gallstone peritonitis may involve the duodenum, the pyloric outlet of the stomach, the pancreatic duct, or any portion of the intestine, and may more or less completely interfere with their functions. A stone lodged in the cystic duct may incite an inflammation sufficient to cut off the blood supply of the gallbladder, thus producing gangrene; also gallstones may incite a phlegmonous inflammation, resulting in gangrene.

By long irritation gallstones frequently re-

sult in cancer. This is particularly true of cancer of the gallbladder. Cancer of the gallbladder is said to be preceded by gallstones in ninety-five per cent. of cases.

Mayo-Robson asserts that bile is an excretion and not a secretion. He has demonstrated that there is a normal flow of 27.5 ounces in twenty-four hours. When gallstones are so situated as to form a complete obstruction, resulting in chronic jaundice, they cause a serious and dangerous poisoning of the system. By constant absorption of bile, the blood is degenerated, resulting in a form of hemophilia, and the patient is liable to uncontrollable and fatal hemorrhage. Gallstones may incite a chronic hepatitis, a form of cirrhosis.

Gallstones are frequently the cause of chronic pancreatitis, and occasionally of acute phlegmonous pancreatitis. It is a well established fact that infection may be transmitted to the pancreas from the bile passages. This is particularly liable to occur when there is a stone impacted in the common duct. Mayo-Robson avers that sixty per cent. of his cases of common duct stones show a condition of chronic pancreatitis. In about two thirds of individuals the terminal portion of the common duct passes through the head of the pancreas. The ducts of the pancreas are sometimes two, sometimes there is but one. The main pancreatic duct, the duct of Wirsung, may be compressed by a stone in the common duct. If that is so, the integrity of the pancreas must depend upon the existence of a secondary duct, the duct of Santorini. Deaver contends that pancreatitis is generally caused by extension from the biliary tract through the lymphatics. In those cases in which the common duct passes through the pancreas jaundice may come on as a result of swelling of the pancreas with compression of the duct. In our operative treatment of gallstones pancreatitis as a complication must be borne in mind, for it renders drainage essential to a complete cure.

A careful study of the pathology of gallstone disease will show that the complications just enumerated and touched upon are all dependent on a more or less advanced stage of the processes. In other words, the early pathology of cholelithiasis is a simple one, while the late pathology is a complex one made up of various complications. This should have very important influence upon our treatment of these cases, for early cure may be accomplished by means of simple operative procedure, involving the patient in but slight risk and promising an almost certain cure, while late operations are usually more and more complicated, depending on the length of the delay. Therefore, the risk to the patient is greater and the prospect of complete restoration to health is less certain.

DIAGNOSIS.

The symptoms produced by gallstones will vary considerably in their intensity, in their variety, and in their importance, and they will correspond very closely to the lesions which they represent. Unfortunately the clear cut, classic picture of gallstone colic is rare rather than common, and unfortunately, too, the public and the majority of the medical profession hold the mistaken view that the less severe symptoms which are usually found do not point to

serious danger and do not necessarily call for surgical relief. There has been a mistaken idea in minds of our profession that in the majority of cases gallstones do not cause symptoms. This is not so, for it is equally true that a gallstone is always doing more or less harm and that a gallstone will always produce more or less well marked symptoms. The fact that they are so frequently overlooked is owing to indifference on the part of the patients and to ignorance on the part of their physicians.

Some cases present classic textbook pictures; in these the diagnosis is simple. The cardinal symptoms are acute, violent pain coming on suddenly, usually at night; this pain is stabbing, lancinating in character, and it radiates to the back and right shoulder. There is usually tenderness, sometimes very acute, in the region of the gallbladder. Frequently there is vomiting, and if the attack lasts for a day or two there may be jaundice. The attack may be ushered in with a chill, or there may be a succession of chills. Such cases present but little difficulty in diagnosis.

The vast majority of cases are not manifest by a severe and characteristic attack, and diagnosis is not forced upon us, but it should always be made if we pay attention to the whole picture of the cases and if we hold the view that chronic indigestion and dyspepsia are not normal conditions. In the majority of cases the gallstones are at rest and are not causing active and violent irritation. The gallbladder and bile ducts are chronically but not acutely inflamed. Symptoms will correspond to these conditions and will be those of a slight localized irritation or a slight inflammation of a chronic type and of a slightly disturbed function on the part of the digestive tract. They are mostly those of a chronic dyspepsia, not violent in character. Such patients will have sour eructations, belching of gas, and a sense of fullness and tension after eating. They may have slight pains, slight tenderness, and rigidity at the Mayo-Robson point. They usually suffer from constipation. These are the cases where diagnosis is certainly not easy. In some the diagnosis must be inferred. These patients should be carefully watched, and if their symptoms are sufficient to disturb their health, to undermine their nervous system, or make useless or unhappy their lives, they should certainly be operated upon, assuming that they have had careful hygienic treatment without success.

Let us here consider the correlation of certain diseases of the stomach, the biliary tract, and the appendix. There are many cases which present symptoms of dyspepsia or chronic indigestion in which it would be impossible to say whether the lesion is in the appendix, in the bile passages, in the pylorus, or duodenum. These cases are to my mind of the utmost importance, and yet the vast majority of them are neglected by the medical profession. They are cases in which there is a vague sense of distress in the right upper quadrant of the abdomen, acidity of the stomach, eructation, and belching of gas, slight tenderness over the region of the gallbladder, a sense of distention or upward pressure; sometimes irregular looseness of the bowels, usually constipation. Now, if such patient does not show an active attack of appendicitis with local-

ized pain, tenderness, and rigidity, or a classic attack of gallstone colic with a violent pain radiating to the back or shoulder, with vomiting, chills, and jaundice, or the positive evidence of gastric or duodenal ulcer made up of violent pain, vomiting, and hemorrhage, I say, if such a patient does not show such a positive and unmistakable evidence of one of these conditions, he is almost invariably neglected by his physicians; and yet I maintain that every such case of incurable indigestion is due to one of these three diseases, namely, peptic ulcer, gallstones, or chronic appendicitis. And I also maintain that every one of these patients should be cured. Gastric and duodenal ulcers may be cured by a medical treatment in a certain proportion of patients; when they are not thus cured and permanently cured they should have surgical relief. Chronic appendicitis and gallstones are never cured by any except surgical means.

INDICATIONS FOR OPERATION.

To my mind the mere diagnosis of gallstones is sufficient to warrant an operation. This opinion is based on the fact that all gallstones are doing more or less harm. In these cases the early pathology is much more simple than is the late, and if we operate during the early stages we shall be able to accomplish the necessary object by means of a simple and safe procedure, and the chance of radical and permanent cure is much greater than it will be if we wait until complications have set in. Nearly all complications are the result of delay. All things being equal, the death rate of biliary surgery bears a distinct relation to the period of the disease. Deaver aptly says that a low mortality rate obtained by a surgeon is a tribute to the knowledge and skill of his medical confrères who sent him cases. Most of the mortality in biliary surgery is due directly to delay. Prolonged jaundice is the cause of fatal hemorrhage. Extensive adhesions add greatly to the seriousness of the disease. Cancer is produced by delay—by prolonged irritation.

If we concede that a certain number of cases of cancer are the result of gallstones, and if we concede also that removal of gallstones before they have produced cancer will be a means of preventing a certain number of cases of cancer, then we must concede that the mere presence of gallstones is sufficient to warrant operation, for this reason if for no other.

Now of those cases in which the symptoms are not distinct and the diagnosis is not clear, I do not wish to be understood as advocating operation in every case of chronic indigestion and dyspepsia, but I do emphatically state that every such case should be cured. Therefore proper medical and hygienic means should be employed, and they will bring about a cure if the trouble is a functional one and not dependent on one of the lesions cited above. If our medical treatment has proved a failure then it is our duty to resort to surgery.

OPERATIONS.

In this paper I shall not enter into a technical description of the various operative procedures. I shall simply mention some principles which are to be employed.

As all cases of gallstone have been dependent upon infection, drainage is of the utmost im-

portance and should be a routine procedure. For this reason the gallbladder should be preserved unless there is very strong reason for its removal. Drainage should be continued until clear bile is flowing. It should not be discontinued while there is mucus present nor while the bile is dark, thick, or viscid. Among the distinct reasons for drainage are a permanent closure of the cystic duct with hydrops of the gallbladder, gangrene of the gallbladder, a gallbladder rendered useless by ulceration, a much thickened gallbladder with suspicion of cancer.

Drainage is most important in the treatment of pancreatitis. Should prolonged drainage be indicated on this or any other account, the gallbladder should be anastomosed with the intestine. Success depends on thorough drainage and on complete operation. One must be sure that there are not stones left behind, therefore all of the ducts must be thoroughly searched and probed. Whenever the common duct has been opened it should be drained, and it should be opened and drained when the gallbladder is removed.

In closing, I wish to lay stress on the importance of the study of pathology in the living. Most of our accurate knowledge of diseases of the alimentary tract has been acquired in the last few years, and the most important lessons have been learned at the operating table. There we see conditions as they are and we see them in life. The operating room is a much better place to study these cases than is the dead house. It is not only more convenient and agreeable to the patient, but is also much more useful and instructive to the physician. Physicians and surgeons should study these cases together at the operating table. If this course is pursued much enlightenment will follow, and a great benefit will thereby accrue to humanity.

540 PARK AVENUE.

WHY IS DIRECT TRANSFUSION OF BLOOD OFTEN A FAILURE?

*Suggestions on How to Make It Successful by a
Physiologically Correct Technique.*

By A. L. SORESI, M. D.,
New York.

Direct transfusion of blood if properly employed should give splendid results. Many failures, some due to the technique, and some to the incorrect clinical indications, have prevented the use of transfusion from becoming as popular as it should be. The writer will try to point out why transfusion is often a failure and suggest means which experience gained in thirty-four transfusions on human beings, and some hundreds on animals, has shown him how to make the procedure more successful.

Many failures are due to faulty technique; that is, the average surgeon is not accustomed to do conservative work on the bloodvessels. Bloodvessels have always been for the surgeon a source of annoyance, and the best thing he has learned to do with them is to tie them securely so as to prevent bleeding, by crushing their intima and producing a blood clot. In performing transfusion, the surgeon

must do exactly the opposite; he must be very gentle with the bloodvessel in order to save the intima and prevent the formation of a clot. It is not difficult to do good conservative work on the bloodvessels, but it is necessary to have some special skill, which can be easily acquired by doing some experimental work on animals. Any surgeon, no matter how skilled, should try transfusion on animals before attempting it on human beings.

From the time that transfusion was first attempted surgeons have used a bloodvessel of the donor in which the pressure was high, or have raised such pressure by artificial means. This has been done under the impression that the stream of blood coming from the donor under high pressure, would overcome by the *vis a tergo* the *vis a fronte* in the veins of the recipient and so the blood of the donor would easily flow into the recipient. The most accepted procedure is to anastomose the radial artery of the donor with a vein of a limb of the recipient. Taking into consideration that the blood in the radial artery of the donor is under a pressure of about 110 mm. and the blood in the vein of the recipient is under a pressure of only about fifteen mm., it seems logical to reason that the blood of the donor will flow freely into the system of the recipient (Fig. 1). That this does not always occur is proved by the many failures of direct transfusion of blood. Even with perfect technique failure is commonly due to the formation of a thrombus at the point of anastomosis. With blood flowing freely from the artery of the donor into the vein of the recipient there would not be any thrombus. Many surgeons have had the illusion that the blood was flowing freely from the donor to the recipient, by the fact that the pulsation of the artery of the donor appeared to be continued in the vein of the recipient; especially when using the suture method, the vein appears to pulsate, although little or no blood is flowing into it. The blood of the donor does not flow freely, as is commonly supposed, and this is evident from the fact that transfusion is generally kept up for from one half to one hour. A rough estimate of how much blood the donor would lose in that time from a severed radial artery, clearly shows that the death of the donor would result if the blood was flowing freely. Rarely the blood is flowing so rapidly from the donor to the recipient that the flow has to be slowed down by compression of the artery; in these cases, and only in these, is the blood flowing freely from the donor to the recipient. Why then does the blood not flow in every case from the artery of the donor into the system of the recipient? Because the technique of using an artery of the donor and a vein of a limb of the recipient is wrong; to make the blood flow freely from donor to recipient, the blood of the donor should flow without any obstacle directly into the heart of the recipient. This is accomplished by using the external jugular vein of the recipient and is explained by the laws regulating the circulation of the blood. When the blood leaves the bloodvessel of the donor and enters the vein of the recipient, it is no more under the influence of the heart of the donor, but under the influence of the heart and bloodvessels of the recipient exclusively; and in order to circulate, it must reach the

heart of the recipient. Why this does not occur is easily explained. Blood pressure is highest at the left heart and negative at the right. This difference in pressure assures the circulation of the blood, which depends mainly on these factors; the blood is contained in a closed elastic sys-

sary in human beings, are duplicated, the blood flows freely from donor to recipient, and the formation of a thrombus seldom occurs. Transfusion is not more easily accomplished in dogs than in human beings, as some think, but in dogs we generally transfuse the blood into the external jugular vein.

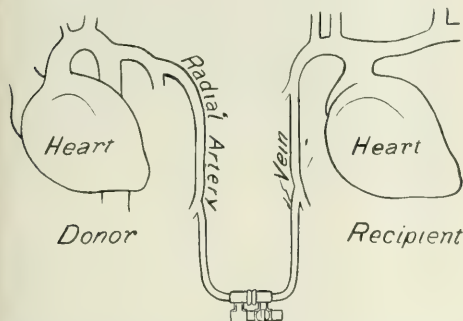


FIG. 1.—Schematic view of transfusion between an artery and a vein of the limb. Note how far from the heart the point of anastomosis is, and therefore how much resistance the blood of the donor will meet.

tem of vessels beginning and ending in the heart, which acts as a double pump by rhythmic continuous movements of expansion and contraction. The blood will flow where it meets less resistance, so an animal can be bled to death by severing any bloodvessel and keeping its lumen opened, because there is no obstacle to the blood flowing out. In some pathological conditions, such as shock or severe hemorrhage, the superficial bloodvessels are almost bloodless and therefore collapsed. The blood flowing from the artery of the donor meets a great obstacle in the resistance offered by the narrowing of the lumen of the vein of the recipient. The vein has numerous ramifications, so that the further the blood flows the more resistance it meets. With increased resistance there is diminution of pressure, because the width of the bed in which the blood is flowing when contained in the artery, is enormously increased in the venous system of the recipient. Trauma caused in making the anastomosis, and the dilatation of the channel, where the current necessarily becomes slow, at times so much that there is real stagnation of blood, are the most favorable elements for the formation of a thrombus on the traumatized intima of the vein, and I will here only mention the fact that when, as in most of the present methods, one bloodvessel is cuffed over the instrument and the other is pulled over it, there is a dead space between the intima of the two bloodvessels, where the blood stagnates and coagulates, in this way helping the formation of a thrombus, which, in a short time, will occlude the point of anastomosis. This seldom occurs when the veins are fairly filled with blood; in these cases the blood flowing from the artery of the donor is carried very rapidly to the heart of the recipient and put in circulation immediately. Experimental work on animals shows that in dogs, where the same, or even more severe conditions than those which render transfusion neces-

TRANSFUSION DIRECTLY INTO THE HEART BEST.

By using a vein of the neck of the recipient (Fig. 2), the conditions for the flowing of the blood from the donor are quite different from the conditions described above when using a vein of a limb. The pressure of the blood in the veins of the neck of the recipient is negative, and even in the most extreme anemias cannot oppose any resistance to the blood flowing from the vessels of the donor. As the blood flows where there is the least resistance, by anastomosing the vessel of the donor with a vessel in the neck of the recipient, the blood will flow very freely from the vessel in which the pressure is positive, to the one where the pressure is negative. By using a vein of the neck of the recipient the blood coming from the donor falls directly into the heart of the former, aided by the suction of the heart during systole, and by the changes in pressure in the chest during inspiration and expiration. If the same technique as used in dogs is used in human beings, anastomosing a bloodvessel of the donor with a bloodvessel of the neck of the recipient, there is little possibility of a thrombus, and transfusion will be a safe, sure, and easy procedure.

From these facts it is evident that in human beings the best technique will be that which uses a vein for both donor and recipient. Any good sized vein of a limb can be used for the donor. The external jugular vein should be the one preferred

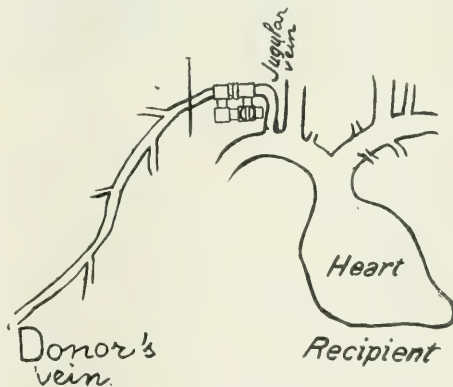


FIG. 2.—Schematic view of transfusion between a vein of the donor and a vein of the neck of the recipient. Note how blood drops directly into the heart of the recipient.

for the recipient, as it is of good size even in children, and always very accessible.

The external jugular vein has been used by surgeons of the past centuries, and lately by Doctor Vincent, of Boston, but it has been selected only on account of its accessibility and large size; Vincent has used and recommended its use only in

children. The physiological considerations presented above make the procedure entirely new.

To expose the external jugular vein, it is advisable to make an incision about four cm. in length, in the same direction as the folds of the neck, at an equal distance from the jaw and the clavicle (Fig. 3). The vein is situated under the platysma and at that point crosses the sternocleidomastoid muscle. By making the incision along the folds of the neck the scar is almost invisible. With a little practice on animals, it is easy to acquire the skill necessary to judge all the details which cannot be described here.

Can air easily enter the open lumen of the vein and cause an air thrombus? This accident might happen to a careless or inexperienced operator; it has never occurred to the writer, and he thinks it never can, by using, with a little care (Figs. 4 and 5) his instrument for direct transfusion, which was described fully in the issues of the *NEW YORK MEDICAL JOURNAL* for April 1, 1911, and *Medical Record* for May 4, 1912, to which those



FIG. 3.—Line of incision.

desiring more details and a report of twenty-five cases are referred. In order to avoid any difficulty in locating the external jugular vein, it is advisable to make a slight pressure just above and about at the middle of the clavicle, as shown in Fig. 6, so that the vein becomes prominent. The position to give to the donor and the recipient is well illustrated in Fig. 7. For other details I refer to my articles already cited.

To make transfusion a success technically, certain precautions are of great value. As with the technique just described, the blood of the donor does not meet any obstacle, the passage from donor to recipient is, at times, so rapid that there is danger of syncope to the donor and of acute dilatation of the heart to the recipient. It is not possible clinically to calculate the speed or the amount of the blood transfused. A too rapid passage is dangerous for donor and recipient, and if either or both show that the passage of the blood is too rapid, slight pressure on the bloodvessel of the donor will sufficiently control it. The amount of blood to be transfused is influenced by the conditions of both donor and recipient. Transfusion

might be stopped before the recipient derives any benefit, because the donor cannot stand the loss; on the other hand, the recipient may need little or much blood, according to the pathological condition

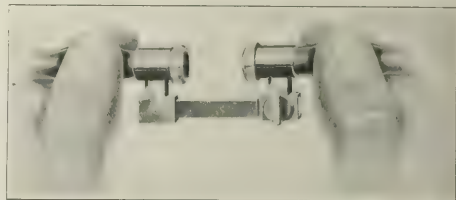


FIG. 4.—Showing how air is prevented from entering into the open lumen of the vein by making a slight pressure with the thumb and index fingers till the bloodvessels are put in close contact, as shown in Fig. 5.

present. In severe hemorrhages it would be impossible to replace all the blood lost with the blood of the donor, because the donor would himself then require transfusion. In these cases normal saline solution should be supplied to the patient, in addition to blood. As a rule with a hemoglobin increase of from twenty to thirty per cent., even if the donor stands the loss of blood well, it is time to stop transfusion.

One of the most common and serious complications in performing transfusion is that the bloodvessels, when exposed to the air, dry, and therefore the passage of the blood is made very difficult; to avoid this drying, the best procedure is to have a continuous flow of warm sterile saline solution on them, from the moment they are exposed up to the time to stop transfusion (Fig. 7). In this way the bloodvessels will be in a warm, moist medium, which will put them in the same condition as they are in the normal body, during the flowing of blood from donor to recipient. The temperature of the solution should be about 105° F.

An element of the greatest importance is the affinity of the blood of both donor and recipient. The blood of the donor might be very healthy and rich in morphological elements and active principles, but not agree with the blood of the recipient. These points can be made clear by comparing the blood of the donor to currency; if bills were presented in a land where people did not appreciate their value,

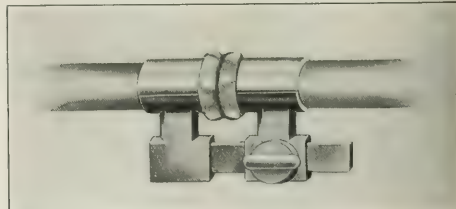


FIG. 5.—Bloodvessels approximated; screw tightened; procedure completed.

a person could not buy a loaf of bread with even a thousand dollars. Unless the value of the blood of the donor is "appreciated" by the new organism, it will not only not be of any help to it, but become



FIG. 6.—Location of external jugular vein; how to make it prominent.

an element of danger. Between close relatives especially on the maternal side, the affinity of the blood is likely to be perfect, and one can dispense in emergency cases with the hemolytic test. In other cases, it is always best to have this test made.

But transfusion must not only be safe, sure, and easy; it must answer to some well definite clinical indications, otherwise it will be abused and discredited. *Direct transfusion should be resorted to only with the intention of giving a patient those morphological elements and active principles which can take up immediately (although but temporarily) the burden of the general metabolism impaired by some pathological condition.* Its therapeutic value is limited to these conditions; it is not supposed to rejuvenate old tissues and organs, but only to give time to the hemopoietic organs to build up the morphological elements and active principles of the patient, which are indispensable to the maintenance of life. For this purpose, and for this purpose alone, no other single therapeutic agent or combination of such can take its place. When we give saline solution, tonics, stimulants, we presume that the hemopoietic organs are in good condition and can stand immediate, and, at times, violent stimulation; if they are not, stimulants and saline solution will not only be of no help, but do damage. On the



FIG. 7.—Position of donor and recipient; irrigator containing warm sterile saline solution for continuous flushing of the bloodvessels.

other hand, transfusion should not be resorted to only when the patient has one foot in the grave, but before the patient is *in extremis*.

The writer reports at the end of this paper some experiments on dogs, which will make clear the value of transfusion in hemorrhages. These experiments show clearly that the first thing to do in cases of severe hemorrhage is to replace as soon as possible the liquid lost. Experiments I and II confirm the opinion of the physiologist that a loss of 4.5 per cent. of the body weight of blood is generally fatal; but in experiment III the animals lost more blood than six per cent. of the body weight and only one out of three died from the immediate effects of the hemorrhage. Of the other two dogs, one died because his hemopoietic organs were unable to replace the morphological elements and active principles of the blood, but probably he would have been saved if transfusion had been resorted to as in experiment IV. These show clear-

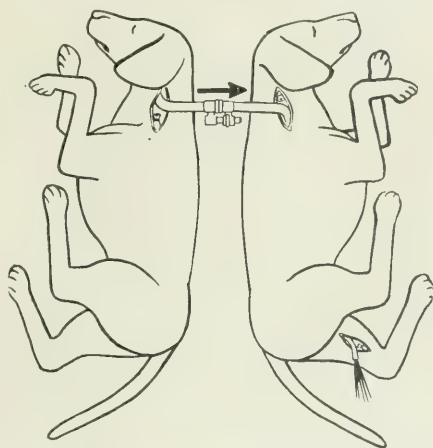


FIG. 8.—External jugular veins anastomosed. Recipient bled by severing femoral arteries. Donor died; recipient in very good condition.

ly that, although the animals can be saved from immediate death by infusing warm physiological saline solution, this is not sufficient to maintain life unless the hemopoietic organs can build up very rapidly the morphological elements and active principles of the blood which the system has lost on account of hemorrhage. The last group of experiments (VI) show that the animal can lose all of his blood, but as long as it is replaced by homogeneous blood, while he is losing his own, the loss is felt very little or not at all. Where transfusion has been done it is shown that veins for donor and recipient can be advantageously used without sacrificing an artery of the donor; and that whenever there is an urgency for liquid, this should be introduced through a vein of the neck, as more rapid and beneficial effects are thus obtained.

It is admitted that transfusion is very successful in cases of hemorrhage, but even then it must be properly applied. The rational treatment of hemorrhage varies with its nature and its gravity *per se*,

and varies also with each patient. The bleeding may come from large bloodvessels easily accessible or not, or there may be oozing from capillaries or tissues as in hemophilia, hemorrhagic diseases of the newborn, ulcers of the stomach and intestines, hemoptysis, bleeding from the liver and biliary tracts after operations, etc. In the former class, after tying the bleeding vessels, the indication is to replace the liquid tissue lost; in the second class blood is transfused, not only as a liquid, but as a hemostatic agent, which is introduced to stop further bleeding.

"When then is saline solution sufficient, and when is direct transfusion indicated?" In hemorrhages caused by a condition which can be absolutely cured surgically, such as a wound of a blood-vessel, ruptured ectopic gestation sac, etc., saline solution is in the greatest majority of cases sufficient. Blood transfusion should be employed only when the loss of blood has been very severe, especially if shock is present, and the hemopoietic organs would be unable to supply in a reasonable time new active elements of the blood to carry on the work of general metabolism. So it is clear, that if the patient is young and strong he will be able to stand a loss of blood greater than a person in poor health and anemic, and the severity of the hemorrhage must be judged on these lines proportionately, i. e., what is very dangerous for an anemic person would hardly be felt by a vigorous, healthy youngster. In this class of hemorrhage the first thing to do is *immediately to supply liquid in the handiest way*; if the hemorrhage has been too severe, too many of the morphological elements have been lost, direct transfusion can be resorted to afterward, as soon as a donor is found. This administration of liquid will benefit both donor and recipient, if direct transfusion is resorted to. When the blood is transfused as a hemostatic, beside being transfused in order to supply at least part of the liquid lost, *transfusion should be resorted to immediately, before having supplied too much liquid*; because, whatever the pathology of hemorrhagic diseases is, it is a fact that the system of the patient does not contain enough of the principles which cause coagulation of the blood. *By injecting saline solutions, these principles, already too scarce, are more diluted and new hemorrhages are favored. So direct transfusion should be the first step in the treatment of such conditions*; when this is accomplished liquids can be supplied parsimoniously, and the patient can be helped in the most dangerous moments by keeping his head low and bandaging the legs and arms, in order to keep as much blood as possible circulating in the organs which need a good supply to maintain life.

Direct transfusion finds useful indications in cases in which the blood is loaded with poisonous products that hamper its physiological functions, such as asphyxia, gas poisoning, pneumonia, etc., *provided that the central nervous system has not already been damaged too much*; in these cases blood letting from a vein, preferably in the leg, while transfusion is going on, is the indispensable condition to a successful transfusion; the system unloads the poisoned blood, while it is taking in

new healthy blood. In pernicious anemia, and anemias caused by malignant diseases or tumors, transfusion is useless; the disease is not in the blood, the pathological condition of which is the result of a faulty metabolism, and unless this is remedied the transfused blood will immediately undergo the same changes, at best, as the blood of the recipient. It would be the same as if a farmer, having a barrel of wine which turned sour, should think that he might improve it by putting in the same barrel some good wine. The only result to be expected is a prolongation of life.

There are patients who are considered unable to stand certain surgical procedures, especially long and bloody ones. Transfusion is indicated in cases, where the hemoglobin is less than fifty per cent. and in patients who would be unable to take nourishment for some time after the operation, especially if this is a bloody and a lengthy one. It is evident that in these cases we supply by transfusion, elements which help the patient in his fight for final recovery, either by preventing, or helping to fight sepsis, or by giving time to the hemopoietic organs to build up new elements of the blood. In some of this class of patients astonishing results have been obtained, while in other transfusion was a flat failure. The most important element which will help the patient is the time at which transfusion is resorted to; *transfusion should be performed during the operation, not before or after*. When it is done during the operation, the patient receives the blood of the donor while he is losing his own, therefore the loss will not be felt (see experiment VI); he receives blood that is in much better condition than his own, because richer in morphological elements and not poisoned by the anesthetic. As the effect of the anesthetic is lessened, shock is either entirely prevented or much lessened. When operating in the region of the gallbladder, postoperative hemorrhage is a very serious complication; in these cases the blood of the donor will act as a hemostatic and prevent fatal bleeding. It is evident that these advantages are not present when transfusion is resorted to either before or after the operation. It is easier to prevent than cure, and transfusion done during the operation is intended to prevent complications. When transfusion is done during a surgical operation, a bloodvessel of the limbs of both donor and recipient can be used, because while the patient is losing his own blood, the blood of the donor flows freely enough into the vein of the recipient; and at times using the external jugular would disturb the work of the surgeon.

REPORT OF EXPERIMENTAL WORK ON HEMORRHAGE.

All of the dogs were anesthetized with morphine and ether; ether was stopped when the animal had lost a certain amount of blood. For brevity's sake, details not bearing on the subject in discussion will be omitted; and experiments repeated several times and giving about the same results will only be mentioned. All dogs were in a good healthy condition.

I.—Male; weight 10.5 kilos. Femoral artery severed and 550 c. c. of blood obtained; after twenty minutes warm saline solution was infused through femoral vein; dog died while infusion was going on and 400 c. c. had been injected.

II.—Female; weight 11.8 kilos; femoral artery severed; 600 c. c. of blood obtained; animal died about ten minutes afterward.

III.—Male; weight 15.5 kilos; femoral artery severed and a glass tube coated with paraffin inserted in its lumen; another glass tube of the same size was inserted in the femoral vein of the same side. Infusion of warm saline solution, with container about five cm. above the level of the bloodvessel, and bleeding were started at the same time, 980 c. c. of blood being obtained. Bleeding and infusion were stopped at the same time, after 1,020 c. c. had been infused. Dog extremely anemic, but still living and improving after three weeks. Dog after fifteen days had lost 4.7 kilos in weight. Same proportion of blood obtained in two other dogs under same circumstances; one animal died in two hours, the other vomiting almost continuously for fourteen days before death occurred.

IV.—Male; weight 13.6 kilos; 900 c. c. of blood obtained in same conditions as dog III, and replaced by 940 c. c. of warm saline solution. Next day dog was vomiting and in very bad condition; transfusion through external jugular vein for ten minutes, using also external jugular vein of the donor was resorted to. No anesthetic was used for the recipient and very little for the donor. Animal greatly improved, well three days later. After fifteen days loss from original weight was 1.8 kilos. Same experiment as IV dog, weight 12.6 kilos; transfusion resorted to after two days, in extremely bad condition; improved after transfusion, but not as rapidly as dog IV. Loss of weight after fifteen days 3.1 kilos.

V.—Two dogs of about the same size; one weighing 12.3 and the other 12.1 kilos, were bled through femoral artery; 450 c. c. of blood was obtained from each; after about five minutes warm saline solution was injected in one through the femoral vein, and he died while this was going on; the other received 500 c. c. of saline solution through jugular vein; animal still living after two weeks having lost 3.8 kilos.

VI.—The external jugular vein of one dog was anastomosed with the external jugular of the opposite side of another dog of about the same size, both animals weighing about eleven kilos. Thus the blood of one dog flowed into the jugular vein of the other (Fig. 8). The femoral artery of the recipient was severed, and blood allowed to flow freely by inserting a small glass tube coated with paraffin. Transfusion and bleeding were started at the same time. Recipient that was losing blood did not show any sign of distress; but the donor after five minutes began to show the effects of an acute anemia. Four minutes later the animal was dying; transfusion was stopped and the donor died a few minutes later. The recipient had lost through his femoral artery 600 c. c., but was in very good condition and two days later was eating and jumping around.

CONCLUSION.

Transfusion should not be resorted to only when the patient is *in extremis*; surgeons should train themselves on animals in conservative surgery of the bloodvessels before attempting transfusion in human beings; vein to vein method is to be preferred, and the use of a vein of the neck of the recipient is the only physiologically correct method to be adopted, except when not suitable during surgical operations. In hemorrhages there must be a distinction between hemorrhages which can be completely checked and hemorrhagic diseases; in the former saline solution should be administered immediately as first resort and during or before transfusion; in the latter, transfusion should be resorted to before other liquids are introduced into the system, because the blood is used as a hemostatic and should not be diluted; in the greatest number of hemorrhages saline solution is sufficient to save the patient and transfusion should be resorted to only when the surgeon thinks that the hemopoietic organs of the patient would be unable to supply, in a reasonable time, the morphological elements indispensable

to life. In diseases in which the blood is loaded with poisonous products, transfusion is very useful, provided that the central nervous system is not too seriously injured and blood is let out during or before transfusion is resorted to. Transfusion is a great help to patients who are considered bad surgical risks, and it must be performed during the operation. A vein for both donor and recipient should be used, anastomosing the distal part of the donor's vein with the proximal part of the external jugular of the recipient. In this way the radial artery is saved and it is easier to find a donor. Obviously there may be cases where it is advisable to use the radial artery of the donor, and transfusion will be very satisfactory; but, when possible, vein to vein should be used, always preferring the external jugular for the recipient.

75 WEST FIFTY-FIFTH STREET.

THE TEMPERATURE AFTER PERINEAL SECTION UNDER SPINAL ANESTHESIA.

BY EDWARD L. KEYES, JR., M. D.,
New York.

AND DAVID W. MACKENZIE, M. D.,
New York.

Operations upon the male perineum offer a peculiarly appropriate field for experiments upon the newer methods of anesthesia, for the circumstances under which such operations are undertaken often increase the risk of general anesthesia by ether or chloroform to a marked degree.

Apart from prostatectomy, amid the dangers of which anesthesia plays a familiar and important rôle, we may enumerate periurethral abscess and infiltration, tuberculous fistula and stricture, and the graver types of gonorrheal and traumatic strictures so often encountered among hospital patients, as conditions combining to a marked degree the perilous features of renal insufficiency, general debility, sepsis, and peremptory need of immediate operation, which features make them peculiarly unpromising cases for general anesthesia.

Many ingenious methods of anesthesia have been employed in the effort to minimize this risk. Among these the most important are nitrous oxide and oxygen, scopolamine and morphine, local anesthesia, and spinal anesthesia. Each of these has its advantages and limitations upon which we need not insist, for our experience has been chiefly with spinal anesthesia.

The advantages of spinal anesthesia may be summarized as follows:

1. It minimizes the danger of postoperative pulmonary complications.
2. It minimizes shock.
3. It spares the kidneys, at least to the extent of not inducing oliguria during the operation, and by materially reducing the quantity of anesthetic to be excreted thereafter.

On the other hand the following disadvantages may be alleged:

1. Failure of anesthesia. We have employed spinal anesthesia at least 150 times and, excepting

only one patient whose spine we failed to enter, we have not once failed to obtain satisfactory anesthesia of the perineum. 2. Shock. A peculiar type of shock characterized by pallor, faintness, and slow or irregular pulse is not uncommon during high anesthesia and abdominal operations. This shock is readily overcome by the injection of two grains of caffeine. It is, moreover, most uncommon during low anesthesia for operations below the groin. The question of postoperative shock we shall consider in detail further on. 3. Toxic complications. We have encountered no unusual toxic complications, unless we include one case of sciatica, beginning four weeks after operation and continuing for several weeks thereafter.

Headache, chiefly by day, and when the patient is out of bed, is the bane of spinal anesthesia. It is said to be due to marked increase or decrease in spinal pressure (in our cases it has seemingly been due to low pressure). It occasionally occurs after spinal puncture for diagnostic purposes, and is therefore perhaps due to leakage of the spinal fluid through the point of puncture after the needle has been withdrawn. This headache proved quite severe, and lasted on the average from ten days to two weeks in about twenty-five per cent. of a series of patients injected with stovaine solution and not included among those reported in this paper. The patients of our present series injected with five per cent. tropacocaine have been singularly free from headache; less than ten per cent. suffering more than a slight annoyance from this.

We believe that intravenous or subcutaneous injection of 100 c. c. of salt solution is likely to relieve the headache in the course of two or three days, but only four of our patients (in a series of over 100) have been sick enough to require this injection.

In spite of our good results, we feel that the accidents occasionally resulting from spinal anesthesia at the hands of competent men forbid us from urging its advantages too insistently. We shall continue to use the injection ourselves, but do not feel warranted in assuming that it is free from graver complications than we have thus far observed. Our technique is that of Professor Bier, of Berlin, communicated to us by Dr. Freeman Allen, anesthetist to the Massachusetts General Hospital, at the suggestion of Dr. Hugh Cabot.

Let us now return to our special point: The advantage of spinal anesthesia for perineal section, as suggested by its effect upon the temperature rise after that operation. We have taken for comparison only those cases operated in at Bellevue Hospital between June 1, 1911, and June 1, 1912, excluding all cases operated in at other institutions and previous to this time, in order that the comparisons might be fair. Our list includes fifty-two cases, twenty-six operated in under ether, and twenty-six under spinal anesthesia.

The reasons for employing ether were mostly of an economic sort, e. g., because the patient requested general anesthesia, because he was a foreigner to whom one could not well explain the situation, or because the apparatus for spinal anesthesia was not at hand. It so happens that the quality as well as the number of cases is about equally divided.

Thus each anesthetic was employed upon three patients with prostatic hypertrophy, seven with fistula, and nine and eleven respectively with abscess of prostate or perineum. Our insistence upon spinal anesthesia for all the worst cases is, however, perhaps best illustrated by a comparison of the patients' ages in the two series. Among those to whom ether was administered the average age was thirty-three years, while but five of them were over fifty years of age, and but two over sixty. On the other hand, the average age of our "spinals" was forty-five years; thirteen of them were over fifty, and five over sixty years old.

All of our patients are alive to-day with the exception of two, one who died of shock the day after perineal section for ancient stricture and extravasation, and one who died two weeks after an attempt to close a tuberculous fistula. Both had been operated upon under spinal anesthesia, to which the death in the second case is directly, if paradoxically, attributable, for we should never have dreamed of attempting to operate therein at all under any other form of anesthesia.

In comparing statistically the cases operated in under ether, with these operated in under spinal anesthesia, our first efforts were confined to the study of pulse rate and blood pressure, especially at the moment of penetrating the deep urethra with the finger, while the patient was under the influence of spinal, compared with general anesthesia. But the figures obtained were utterly contradictory and meaningless. We therefore proceeded in the present series of cases to study the rise of temperature after spinal anesthesia compared with the rise after general anesthesia.

We have used as a basis of comparison the maximum temperature during the twenty-four hours before operation and have compared with this the maximum in the twelve hours immediately succeeding operation and twenty-four hours following this. Thus we have obtained two sets of figures, one showing the change in temperature for the day of operation; the other the change for the first day after operation. The only inaccuracy in our figures is introduced by eight cases which were operated in in such emergency that we have not sufficient details of their temperature for the twenty-four hours preceding operation. The error introduced by these cases appears to us negligible.

As a result of our comparison we find that the rise of temperature in the twenty-six cases operated in under general anesthesia averages 1.4° F., both in the twelve hours succeeding anesthesia and in the twenty-four hours after that. After spinal anesthesia, however, the average rise in temperature was 0.5° F. during the first twelve hours, and 0.8° F. on the day following operation. These figures may probably be interpreted to mean that the elimination of renal congestion accounts for the lower temperature throughout, while the marked difference between the half degree rise following spinal anesthesia, and the one and one half degree immediately following general anesthesia is doubtless due not only to reduction of the renal congestion, but also to an actual blocking of the prostatic-renal reflex by the local anesthesia.

That this is so is suggested by a more intimate

study of the figures. Thus, in the first twelve hours after operation under general anesthesia, only three cases showed a reduction of temperature compared with that of the day before, while eight "spinals" showed such a reduction. On the other hand, eighteen cases operated in under general anesthesia showed a rise of one degree or more in the first twelve hours against nine "spinals"; ten showed a rise of two degrees or more against eight "spinals," and six a rise of three degrees or more compared with one "spinal."

In other words, the marked immediate rise of temperature so characteristic of perineal section done under general anesthesia is absent when the perineal section is done under spinal anesthesia. In our humble estimation this single fact renders spinal anesthesia immeasurably superior to general anesthesia for operations upon the male perineum.

TABLE.

Showing the rise, or fall, of temperature in degrees, Fahrenheit, (A) in the first twelve hours after operation, and (B) on the following day, compared with the maximum temperature during the day preceding operation:

	A		B	
	Spinal.	Ether.	Spinal.	Ether.
+ 4°	1 case	2 cases	3 cases	2 cases
+ 3°	0	4 cases	0	3 cases
+ 2°	3 cases	4 cases	3 cases	4 cases
+ 1°	5 cases	8 cases	5 cases	8 cases
+ less than 1°	5 cases	3 cases	7 cases	3 cases
- less than 1°	7 cases	2 cases	3 cases	3 cases
- 1°	2 cases	0	2 cases	1 case
- 2°	0	0	0	0
- 3°	0	1 case	1 case	1 case

109 EAST THIRTY-FOURTH STREET.

THE GWATHMEY-WOOLSEY NITROUS OXIDE-OXYGEN APPARATUS.

By JAMES T. GWATHMEY, M. D.,
New York.

AND WILLIAM C. WOOLSEY, M. D.,
New York.

EVOLUTION OF THE APPARATUS.

Hewitt was the first to devise an apparatus for the administration of nitrous oxide and oxygen which met with general approval. The uniform supply of the gases necessary for the maintenance of an even anesthesia was accomplished by the equal distention of the two bags holding the respective gases, and by the regulation of the flow by means of valves. The apparatus did not admit of rebreathing, of positive pressure, or of the heating of the gases. After over 17,000 administrations, Hewitt concluded that nitrous oxide and oxygen, as given with his apparatus, should be limited to weak, anemic men and middle aged women, declaring that "to attempt to anesthetize by this system a vigorous, thick set, alcoholic man for a rectal operation would be to court failure."

The Teter apparatus is a great improvement upon Hewitt's. As with the Hewitt apparatus, the even supply of gases is dependent upon the valves and the even distention of the bags. In addition to all the advantages of the Hewitt apparatus, with the Teter it is possible, when necessary, to utilize re-

breathing-and positive pressure and to warm the gases. With these improvements the Teter technique consists in giving an even, uniform supply of the gases at all times, with the expiratory valve slightly open, the pressure being modified according to the requirements of the case. After over 20,000 administrations with this apparatus Teter considers it applicable to all cases that may come to one in surgery, "a vigorous, thick set, alcoholic man" being included in his list.

Coburn's apparatus is modeled along the lines of the Teter apparatus, the same general principles being employed. It is smaller, however, consequently more portable.

To Gatch, as is well known, is due the credit for introducing into nitrous oxide and oxygen technique,

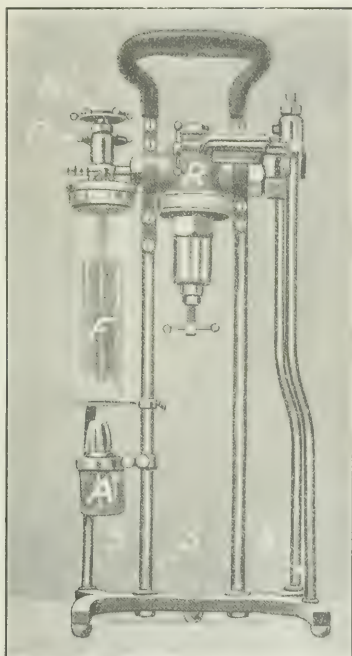


FIG. 1.—Gwathmey-Woolsey nitrous oxide-oxygen apparatus. R, Reducing valve; R', regulating valve for nitrous oxide; V, regulating valve for oxygen; F, sight feed; S, supports; A, alcohol lamp.

utilization of the various benefits of rebreathing. His apparatus is the simplest now employed. Its principal defect is lack of control over the continuous flow of gases; with it, however, a very good anesthesia can be obtained in the vast majority of patients.

The Ohio monovalve apparatus employs a reducing valve for both the nitrous oxide and oxygen, thus enabling the administrator to regulate the flow of gases more accurately than is possible with anything previously devised.

Boothby and Cotton laid down certain principles and devised an apparatus by means of which the gases could be fully utilized, thus enabling one to give a more even anesthesia than was hitherto possible,

and placing the administration of nitrous oxide and oxygen upon a more accurate and scientific basis. With this idea in view, and in addition to the principles that have been found useful in other apparatus, they added a valve for the reduction of the pressure of both the nitrous oxide and oxygen from 1,000 or 1,500 pounds a square inch to ten pounds a square inch. They also introduced a sight feed, so that, in addition to knowing at all times, from the clinical signs, the stage or degree of anesthesia, the administrator may see exactly the proportion of gases the patient is receiving. The apparatus seemed to the authors a distinct step in advance. The principal objection is that it is not portable and cannot be conveniently carried from one room to another. Its dimensions are: Height, seventeen inches; length, twenty-two inches; width, seventeen and a quarter inches; its weight is fifty pounds.

THE GUTHRIE-WOOLSEY NITROUS OXIDE-OXYGEN APPARATUS.

The Guthrie-Woolsey apparatus has been developed in accordance with the principles recognized as essential in the evolution of nitrous oxide and oxygen anesthesia, especially those utilized by Gatch and Boothby and Cotton. The gas supply is conveniently and efficiently furnished, first by two one hundred gallon tanks of nitrous oxide which are in direct connection with the reducer at all times; second, by one forty gallon tank of oxygen, easily and quickly replaced when necessary.

The pressure of the nitrous oxide is reduced by an efficient reducer of small dimensions and light weight, that of the oxygen by a very small valve invented by the instrument maker, Mr. J. Langsdorff. The gases are delivered under low pressure into a combination sight feed and warm water bath, where the administrator can see, on one side of a nickel partition, the nitrous oxide flowing, and on the other the oxygen. This sight feed, as recognized by Boothby and Cotton, is an important feature of any nitrous oxide-oxygen apparatus, inasmuch as it enables the anesthetist to regulate the proportions of the gases to the finest possible point.

This water sight feed is warmed by an alcohol lamp adjustable to its under surface, thus supplying heat and moisture which are valuable assets in the administration of an anesthetic. From the sight feed the mixed gases pass at the top through an exit tube to which is attached the rubber tube running to the rubber bag and mask. The gas cylinders are opened wide into the reducing valves, the flow from these valves being controlled by very sensitive wheels.

The apparatus has been thoroughly tested, and while the reducing valve

seems very small, as does the whole apparatus when compared with others, yet it has been found amply sufficient for all surgical cases. The dimensions are nineteen inches by twelve and one half inches by twelve and one half inches; the weight is twelve pounds.

With the two nitrous oxide tanks and one oxygen tank in place (enough for a two hour administration), the total weight is under forty pounds, not too much for one man to carry a short distance, or to shift without assistance from one place to another. When the smallest sized cylinders are used, one oxygen cylinder, weighing thirty-five and three quarters ounces and holding about eight gallons, with one nitrous oxide cylinder weighing eight and three quarters pounds and holding 100 gallons of the gas (a total of less than eleven pounds for the cylinders, enough for one hour's anesthesia) the total weight is twenty-three pounds. In hospitals, where the supply is obtained from large tanks or from a generator in the cellar, the delivery hose from these sources may be attached to the apparatus. If the operation is of less than thirty minutes' duration, enough gas for this length of

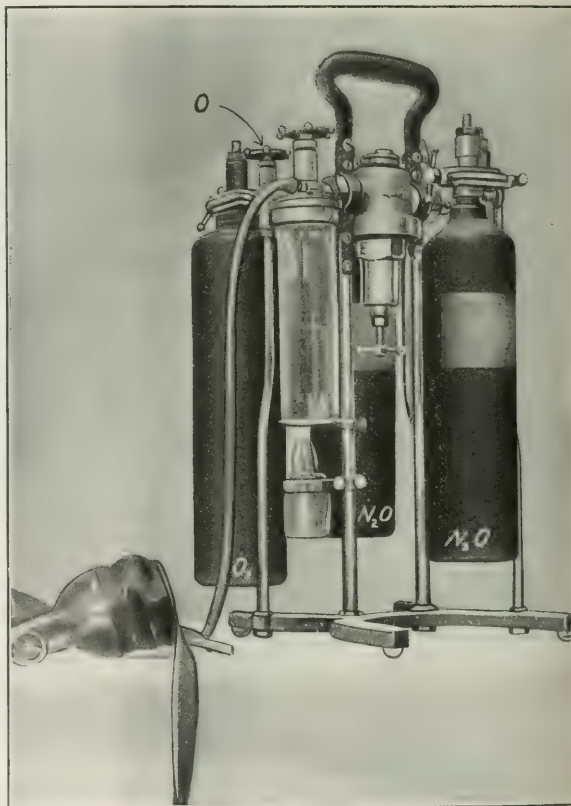


FIG. 2.—Guthrie-Woolsey nitrous oxide-oxygen apparatus, with tanks in place. O, regulating valve for oxygen; O₂, oxygen tank; N₂O, nitrous oxide tanks.

time can be carried in three of the small containers having a combined weight of seven and one half pounds, making the total weight of the apparatus, cylinders, and gas nineteen and one half pounds.

THE GWATHMEY-WOOLSEY MASK.

The Gwathmey-Woolsey mask is an anatomical one made to fit the bones of the face. A rubber collar, devised first by Gatch and later used by Boothby and Cotton, is retained as an essential feature of the mask. The fit and adjustment of this collar, to the absolute exclusion of all air, is considered one of the important features of the technique.

ETHER.

In the small number of cases in which it is necessary to give ether in combination with gas and oxygen it may be introduced by placing an ether chamber directly on the mask and between the mask and bag, as is usual with all gas-ether apparatus. The chimney piece of the Gwathmey gas-ether apparatus, to which the gas bag is attached, has been retained. This contains the inspiratory and expiratory valves upon a sliding cuff. With this cuff, the anesthetist has full control of the patient's breathing, through valves, partly through valves, rebreathing entirely, or, as is generally the case, rebreathing with the expiratory valve slightly open.

POSITIVE PRESSURE.

The authors of this paper have found five mm. of mercury pressure in the rebreathing bag a very great help in those subjects usually considered unsuitable for nitrous oxide and oxygen. In fact, by using this minimum of pressure to deepen the anesthesia when necessary, or with vigorous alcoholic subjects at all times, we have been enabled practically to eliminate the necessity of employing ether at any time.

ENDOTRACHEAL INSUFFLATION.

The apparatus was especially devised by one of us (Woolsey) for endotracheal work. It has been found most acceptable wherever endotracheal work is needed, the constant flow of the gases insuring an even anesthesia without danger. When used in this way no bag is necessary, the connection being made directly with the tube in the trachea. The cases in which it has been used have been entirely satisfactory. The patient is anesthetized in the usual way, the catheter is inserted in the trachea, and a glass connecting tube is placed in the catheter, joining it with the rubber tube from the apparatus.

A mercurial manometer which automatically "blows off" at twenty-five mm. of mercury pressure is attached for endotracheal work. For the usual anesthesia, a safety valve set for a pressure of ten pounds protects the glass "sight feed."

NASAL ANESTHESIA FOR AURAL SURGERY.

For such operative procedure the bag can be dispensed with and the general principles outlined by Teter allowed to govern the technique. The Teter auxiliary tube for the mouth, to prevent spattering when the volume of gas is too great through the nasal passages, is also used. This method is entirely satisfactory in cases of adenoids and tonsils.

ANALGETIC WORK.

With the nose piece in position, a great many surgical operations, especially dental work, may be done with ease during the analgetic stage of nitrous oxide-oxygen anesthesia. The absence of the bag, or any impediment around the patient's head, is a very

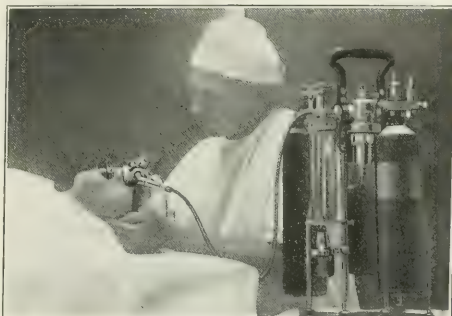


FIG. 3.—Apparatus with nasal tube attached for oral surgery.

great advantage. The automatic action of the apparatus after once the flow of gases is started is a great help. It is now an acknowledged fact that dentists can do their work more acceptably to the patient and with greater satisfaction to themselves when using nitrous oxide and oxygen for painful dental work than without this help, or with only a local anesthetic.

Two cases in which the analgetic stage was employed as outlined above were twelve and fifteen minutes long, and are worthy of notice. The dental work was unusually painful. While all the reflexes were present, the patients neither moved nor flinched during the operation. A good color was maintained throughout. They did not afterward complain of having experienced pain. During the



FIG. 4.—Apparatus as used in general surgery.

operation their eyes were slightly open and the eye-lash reflexes were especially sensitive.

OBSTETRICAL CASES.

Guedel (*Indianapolis Medical Journal*, October, 1911) reports a number of cases with apparatus for the self administration of nitrous oxide and air in obstetrical cases. The analgetic properties of nitrous oxide and oxygen have not been tested in

this field. It would seem, however, to be preferable to nitrous oxide and air in virtue of the absence of the slightest asphyxiation and the presence of a more prolonged stage of analgesia, the idea being to suppress all pain without completely subduing muscular effort. The nasal administration, although more wasteful than the usual method of mask with bag, is the most agreeable and most satisfactory method for these cases, inasmuch as it leaves the face entirely uncovered. The patient can thus answer questions, which is sometimes necessary in order to avoid passing from analgesia to anesthesia.

TECHNIQUE OF ADMINISTRATION FOR GENERAL WORK.

The mask, with the cuff turned up, is placed upon the patient's face and held in position until unconsciousness ensues. The cuff is then turned down and fastened around the neck; it now becomes self retaining. If the patient is a vigorous alcoholic or a nervous individual the bag should be partly filled with nitrous oxide alone. When the gas is turned on, from two to six breaths, according to the patient, should be allowed through valves, the sliding cuff is then pulled out, and rebreathing instituted, the expiratory valve being left very slightly open, say one sixteenth of an inch. As signs of anesthesia appear, oxygen should be allowed to bubble through in about the proportion that will be maintained throughout the operation. For the first five minutes the bag should be slightly overdistended, thus insuring a deeper anesthesia. After that seven eighths distention will meet all conditions. It is unnecessary to manipulate the valves after the patient has been anesthetized five minutes, a slight increase or decrease in the oxygen, or a slight increase or decrease in the nitrous oxide, according to the requirements of the patient, being all that is necessary. Quite often the patient will continue to be satisfactorily narcotized for ten or twenty minutes without the supply valves being touched. Five mm. pressure will relax resistant patients sufficiently for all surgical operations.

There is thus a continuous flow of nitrous oxide and oxygen, with continuous rebreathing. There is slight escape of the exhalations at all times. The patient's color reflex should be maintained, and duskiess should not be allowed. Stertor should be avoided whenever possible by the anesthetist sustaining the lower jaw with the hand or lessening the amount of nitrous oxide.

To summarize, the advantages of the Gwathmey-Woolsey apparatus are:

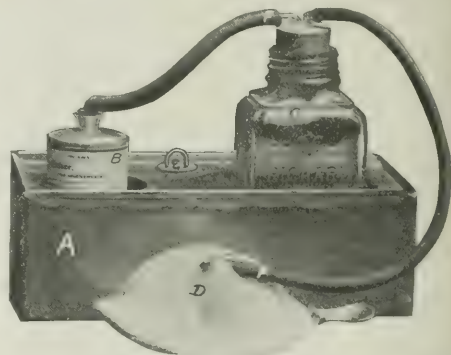
1. Absolute and perfect control of the gases flowing at a low pressure.
2. The gases are easily warmed whenever the patient's condition demands it.
3. Small amounts of ether can be added whenever necessary.
4. It is especially adaptable for endotracheal anesthesia, solving the problem of the administration of nitrous oxide and oxygen by this method.
5. An even, automatic flow of gases, opening up a new field especially for using the analgetic properties of the gases.
6. Small size and portability of the apparatus.

40 EAST FORTY-FIRST STREET, MANHATTAN.
88 LAFAYETTE AVENUE, BROOKLYN.

SOME CONSIDERATIONS OF GENERAL ANESTHESIA.*

BY CLIFFORD R. HERVEY, M. D.,
Oswego, N. Y.

The general public is to be congratulated that the medical profession seems alive and awake to the importance of improved technique in general anesthesia, since for about two generations inhalant narcosis has rested upon its brilliant general results to the neglect of refinements in application. But while this long period has been fruitful in sifting out doubtful and dangerous agents, and in establishing the merits of others, it offers no excuse for the neglect of mitigating modifications of what has always been, at best, a most trying ordeal. Therefore, unless improved methods are understood, adopted, and insisted upon by surgeons and physicians, anesthesia will stand in the same position in the future as it did in the past, when Cooper's invention for administering warmed ether vapor was neglected or when Sir Humphrey Davy's suggestion for the use of nitrous oxide as an anesthetic was unheeded and Faraday's similar suggestion in regard to his discovery of ether was disregarded or when Wells was scoffed into suicide or Edmund Andrews's use



Hervey's ether machine. A, copper tank, capacity two quarts; B, 100 grammes can ether; C, wash bottle for hot water and essential oil of orange; D, gauze and gutta percha mask; E, opening to tank; F, rubber tubing connecting with glass tubing, from ether to mask.

of nitrous oxide and oxygen for prolonged anesthesia was ignored.

The past, however sterile in advancement, is at least fruitful in experience, and several widely used anesthetics have been gradually relegated to restricted fields of usefulness. Chloroform, "A. C. E. mixture," ethyl chloride and bromide, and somnoform, as well as stovaine for spinal anesthesia, are fast taking their places with the nepenthe of Homer, the hemp of Herodotus, and the mandragora of Pliny, leaving the two oldest in point of modern discovery masters of the field.

Experience with these is placing nitrous oxide and oxygen in an advanced rank as an anesthetic for general surgical use, and its advocates are seeking to discredit ether in its favor, adopting, in some instances, a certain air of superiority. Improvements in ether administration have, however, ad-

*Read before the Fifth District Branch of the Medical Society of the State of New York, at Oswego, N. Y., October 3, 1912.

vanced step by step. The open drop method has largely displaced the barbarous cone, and this method is, in turn, yielding to the warmed ether and water vapor, and, that progress halts not, this combination is modified to taste, and we have an ether, denatured of odor, and disarmed of offence, by the scent of oranges,¹ a coincidence of a possibly sentimental Mother Nature, that the marriage associations and the operating table might have, in fancy as well as in fact, a common bond of union.

Between the two anesthetics mentioned the points of advantage as advanced by their advocates will be briefly summarized: Enthusiastic users of nitrous oxide and oxygen assert for it results approaching the ideal. It does not affect the opsonic index, decrease the coagulation time, cause hemolysis or anemia, but produces a quiet anesthesia without preliminary struggle, and without contributing to subsequent shock. It does not irritate the lungs or kidneys. Some do not hesitate to use it in heart lesions or arteriosclerosis, since it does not materially raise the blood pressure if plenty of oxygen is used. The morphine habitué and the alcoholic, never good subjects, can be handled as well as under ether. Past masters in its use assert that patients may be, in all cases, sufficiently relaxed for all abdominal and rectal work. Consciousness returns quickly, and vomiting is infrequent. It can be continued for an astonishing length of time without harmful results. Animals resist shock producing trauma far better under nitrous oxide than under ether. These enthusiasts proclaim its advantage in the aged and the young, and patients reduced by hemorrhage and disease. They have given it in actual pneumonia, to anemics, empyemics, pyogenic patients, in shock and actual collapse. The tendency to postoperative neuroses is diminished, muscular tone is far better, and the microscopic appearance of the nerve cells of animals shows less change after nitrous oxide than after ether. Millions of administrations are pointed to with an almost negligible ratio of death.

In the face of these brilliant achievements, unquestionably demonstrated, it would seem that ether is left scarcely a leg to stand on. But its advocates humbly suggest that statistics of nitrous oxide gleaned from dental practice, where all anesthesia is transitory, are no fair criteria of its safety in protracted operations.

I have perused no article on the subject that does not continually emphasize the need of great skill in the administration of nitrous oxide and oxygen, both for safety and for relaxation. If this great skill is needed, is it not premature to discard ether, since mortality rates may appear when as many unskilled give one as the other? Already death rates are appearing. Gwathmey,² of New York, asserts that many unreported deaths have occurred, and Cotton and Boothby,³ of Boston, affirm that reports of deaths are rapidly coming in. But when, I ask for information, has a report of death from ether been recently recorded?

In weighing the claims of these anesthetics it

must be recognized that cumbersome apparatus and large expense, as well as great skill, attend the administration of nitrous oxide and oxygen. There are a vast and unknown number of operations being done in small towns, villages, in the country, in private homes, and in small, unendowed hospitals. Unskilled assistance must be relied upon here as a rule. It costs from three to six dollars an hour to administer the gases. Who is to meet this expense when we know that a large proportion of these operations are works of charity, and another proportion are done for a nominal fee?

Advocates of the retention of ether point out that absence of nausea is no great distinction, since ninety per cent. recover without it after ether, when the same grade of skill is used in its administration; and that struggling in the initial stages is largely a matter of faulty technique, due to vapor plugging, the other factor being loss of mental control, due to intoxication and fear.

Objections to ether are that the blood deteriorates, and the lungs and kidneys are irritated. It is true that it decreases the coagulation time and lowers the phagocytic power of the leucocytes, and slightly diminishes the hemoglobin. The reasons for this are thought to be understood, and the loss of prestige to ether is small, for an effective and simple remedy has been applied. This action of ether is probably due to its forming a loose chemical combination with the lipoids of the cells, probably the lecithin. Evarts Graham and Ferguson have found that, if a ready supply of lipid material is furnished after the operation, the balance is largely restored to the cells, and this is practically accomplished by a postoperative enema of pure olive oil.

As to the respiratory passages, it is an undetermined question whether the irritating action of ether is due to its chemical qualities or its algridity. When given warm with water vapor, little if any irritation is observed. Postoperative pneumonia is now largely attributed to autogenous infection, and Mikulicz found quite as many or more postoperative pneumonias in long series of major operations done under local as were done under general anesthesia. No conscientious operator will minimize the risk of ether to the kidneys. Cases must still be selected and cared for with the same precautions as hitherto exercised, and nitrous oxide would be welcomed to this or any field when practical, but this factor has doubtless been favorably affected by the reduction of ether amounts during operation.

Again, those who are loath to relinquish ether, point out that the claims for nitrous oxide and oxygen are somewhat confusing. With some a little ether is necessary for relaxation along with the nitrous oxide and oxygen; with others it is superfluous. Tongue trouble with some is unknown, with others extremely common, and a stitch through the tongue has been recommended to hold it forward, as the mask cannot be lifted, but must fit the face. The signs of danger are not recognizable to the tyro, and the danger of overdistending the lungs by increased pressure has been experienced.

It will, therefore, probably be worth while, for some years, to consider the refinements and uses of ether anesthesia. It is interesting to note that im-

¹See editorial article in our issue for September 14th, page 543.
²Jas. C. Gwathmey. Up to Date Methods of Anesthesia, *Journal of the American Medical Association*, lvi, 7, p. 466.
³Cotton and Boothby: Nitrous Oxide Oxygen-Ether Anesthesia, *Surgery, Gynecology, and Obstetrics*, xv, 3, p. 285.

provements in ether administration include some steps backward to procedures of earlier days. Morton, the institutor of ether as an anesthetic agent, commonly applied it on a saturated cloth. As early as 1883, Sherman Cooper patented a device for giving ether vapor warm. In the specifications forming part of *Letters Patent, No. 287,098*, Cooper claims as follows: "Quick production of anesthesia, little loss of material by evaporation, absence of nausea, and vomiting, due to natural inhalation and mixture with atmospheric air, this tending to lessen liability to fatal results to a patient in a weakened condition, and increasing the rapidity of recovery after administration."

During the succeeding years many devices for administering ether warm, or by mixtures with other anesthetics, and with air, or oxygen, have been invented, and it is a reproach to the medical profession that they have been neglected. The advanced methods which are evoking the enthusiasm of to-day measure only a trifle beyond what Cooper suggested thirty years ago. Some learned writer possibly lauded the ether cone, and thereby sealed the avenues of progress, and some erudite pathologist may have "thrown the haunt" of respiratory paralysis across the professional mind, and there it has lain, the explanation of struggles of outraged Nature, in breath holdings, cyanosis, and salivation, due to the vapor plugging of impossibly dense cone saturation.

Without discussing the advantages of applying ether on a gauze mask by the drop, or, as suggested by Irwin, sprayed through a needle hole in the lid of the can, or dropped upon gauze direct as it lies over the face, it may be affirmed that the drop method possesses two disadvantages. Open evaporation under forced draught contributes to low temperature of the vapor, and the anesthetist is apt to get an unpleasant amount of ether, which I believe to be injurious when many anesthetics are induced. Some investigation of these temperatures has been made at the Oswego Hospital during the past year, to determine their register and their effect upon the surgical patient.

It must be recognized that temperatures of the ether mask, and of its cavity when in use, vary according to amounts of ether used, the rapidity of breathing, and the temperature of the patient. As a basis of comparison, a gauze mask was saturated with ether and allowed to evaporate in a still room. This was to determine what ether was capable of doing unassisted. It was found to register a temperature of $+16^{\circ}$ F.

During operation the temperature of the gauze of the mask while breathing was in process, was found to register a minimum of $+25^{\circ}$ F., and a maximum of $+40^{\circ}$ F. Care was taken not to favor the bulb of the thermometer in applying the drops. Within the cavity of the mask, where inspired cold and expired warmth mingle, the mean temperature was about 80° F.

As I do not possess a thermometer sufficiently delicate to register the temperature of the inspired vapor, which is the most important object of such investigation, we can only estimate it approximately as somewhere between $+25^{\circ}$ and $+80^{\circ}$ F., possibly in the fifties. Whether this low temperature

contributes to shock by loss of heat would be a delicate matter to determine, since it would have to be estimated apart from heat loss due to sweating and to surface exposure. I believe, however, that the alidity of the vapor produces the respiratory secretions and disturbed breathing commonly ascribed to ether's irritating qualities, and that it contributes to subsequent nausea.

Just why restriction of secretions in the throat should limit vomiting is an unsettled question. Yet all operators know that in dry anesthetics there is little vomiting. If ether vomiting were wholly due to intoxication, as in the case of its cognate, alcohol, we should expect it to be unrestricted. If it is due to ether laden secretions being swallowed and irritating the stomach, we should expect ether drinkers to abandon their beverage. If it is due to stimulation of the vomiting centre, we should expect it in all methods of administration. Each mentioned factor may contribute a share, yet the local condition of the throat aggravates it. The taste function may share the responsibility. And it is conceivable that the ether, absorbed into the watery contents of the mucoid cells, and evaporating slowly for hours and days, may be responsible for a local effect in the region most sensitive to afferent vomiting impulses, the concentrated vapor of the cone favoring this absorption, while the warm ether vapor, already water saturated, may not be absorbed, or the membranes, unchilled by cold, may preserve more of their eliminative ability.

With the application of warm ether vapor at a temperature of 96° F., there is little, if any, abnormal respiratory secretion. The anesthesia is dry throughout. Activities, struggles, and rigidity of the alcoholic patient are not met ideally by this or any other method. An alcoholic resists any procedures, but after he is conquered, warm vapor of ether will insure a quieter and more satisfactory anesthesia than any method of which I am cognizant. In all ordinary cases, with the extremely young and the aged, I have used it with growing satisfaction. I have never seen breath holding, cyanosis, tongue dropping, or throat swelling from its use, and I have rarely seen subsequent vomiting after return to consciousness, and indeed little vomiting at all that could not be fairly attributed to stress at operation, or to diathesis, say in neurotics, and in victims of sick headache, or those who have suffered shock, either surgical or through preoperative fear. I am under the impression that this is also the observation of those who have had far greater experience than I lay claim or pretend to. The complicated machinery of supply houses, and of puzzle headed inventors, has discouraged the use of this method by disseminating the impression that it is attended with difficulty and expense.

A method which I believe to possess some hitherto unapplied features, has been in use in the Oswego Hospital for about a year. The motive power to convey the ether to the patient is its own evaporative force when heated. This is supplied by a copper tank holding two quarts of hot water. From the upper surface of this tank a tube, cup, or sink is let down to near the bottom, so that it is surrounded by the hot water. Into this a 100 gramme can of ether loosely fits. In a similar cup, a wash bottle

of eight ounce capacity is set. Three ounces of hot water and one ounce of oil of orange are placed in it. The evaporating ether is conveyed by perforated cork, glass, and rubber tubing from the can, through the water and oil of the wash bottle, on to the mask. The cost of this apparatus is about \$1.75.

It might be supposed that care should be taken in regard to the temperature of the water in the tank, since ether boils at a temperature of 98.6° F., and is capable of explosive violence. It was found, however, that it was necessary to fill the tank with boiling water, and that the rapidity of evaporation could be instantly controlled by raising the can, or interposing some gauze between it and the copper, and its evaporation accelerated when the water cools, by adding a few drops to the cup in which the ether is set, to favor the transmission of heat.

Under such conditions a 100 gramme container of ether will occupy an hour to an hour and thirty-five minutes in evaporating. A special mask is necessary, for the warm ether is extremely diffusible. I enclose a sheet of gutta percha tissue between two layers of gauze, and this is sewed to the chloroform mask, making it air tight. A small hole in the top serves for the introduction of the tube conveying the ether. The flow of ether gas is sufficiently rapid to drive out exhalations, and rebreathing is negligible.

The essential oil of orange, as suggested by Gwathmey, and expounded in the public prints, and commented upon editorially in the *NEW YORK MEDICAL JOURNAL* for September 14th, has been used now in several anesthetics. It is possible to report that it promises to vindicate the contentions of its originator. The odor of the ether is largely disguised. All anesthetics so far have been very tranquil, and I am able, I believe, to anesthetize patients in less time, but whether this is due to any anesthetic properties of the oil of orange, or to the allaying of noxi associations, as presented in Crile's theory of shock, or to the simple experience common to man, that pleasant odors are breathed with greater ease and volume than unpleasant, I am unable to state. It should be remembered, however, that the essential oil of orange deteriorates with age and develops a disagreeable terebinthine odor.

It has been suggested that the dryness of the membranes under warmed ether vapor, is partially due to the preoperative exhibition of morphine and atropine. I have never noted any difference in this respect in patients anesthetized by this method, without such medication. Patients so treated, however, resign themselves to the anesthetic with less perturbation, and, I believe, experience warrants the conclusion that preoperative fear contributes to troubled anesthesia, struggling, vomiting, and shock. It is suggested that complications might result, and disturbance of the pupillary reflex mask a valuable index of ether overdosing. Experience, however, seems to show that these substances do not intensify each other's action, that less ether is used because the patient is already partially narcotized, and that the anesthetist may accurately estimate the condition of the patient without reference to the pupil. Personally, however, I should not care to administer anesthetics for inexperienced

surgeons who adopt this as a routine procedure.

A further discussion of the subject of general anesthesia would lead to many interesting subjects, to which, as never before, the professional mind is devoting itself. These include: The minute technique of administration; methods of meeting complications; the relations of the anesthetist to the surgeon, the patient, and the law; the choice of anesthetics in individual cases; the claims of the anesthetist as a distinct specialist; the nurse as an anesthetist; the after care of the patient; the value of statistics of complications and mortality; and, possibly, fatherly talks to the surgeon by his anesthetist. A glimpse only of these subjects would protract discussion far beyond the limits of your time or endurance.

The primary object of this somewhat random discourse, however, is to impress the point that we as surgeons and general practitioners must realize that the long day of anesthesia indifference, with its tortured victims of emesis, thirst, and shock, is passing, and no longer may we with good conscience look upon this troubled vision of suffering as a necessary part of human misfortune, or select at random those who preside over this function, or neglect the application of improved expedients, of whatever nature, to alleviate it. The urgings of self interest demand this much, but the higher obligations of duty to those who intrust themselves to our care, considerations of pity, and the precepts of the golden rule render it imperative.

63 WEST BRIDGE STREET.

OPERATIVE TREATMENT FOR CANCER OF THE BREAST,

*A Discussion of Its Present Status, Based upon
One Hundred and Thirty-seven Cases,*

BY JAMES SPENCER BROWN, M. D.,
Montclair, N. J.,
Surgeon in Chief, Mountainside Hospital.

Probably the most momentous problem confronting the medical profession to-day is that of cancer. Within the last quarter of a century our knowledge of methods for preventing or curing so many other diseases has increased to such an extent that the average span of life of the present generation will exceed by several years that of any preceding generation in the world's history. This is all very good, and on the credit side of our ledger.

But when we turn to the opposite page—the one that records cancer—we are confronted by the appalling fact that this disease is increasing, and at the very time when so many others are on the decline. In twenty-four years the death rate from cancer in the city of Boston has increased three times; in San Francisco it has increased seven times in thirty-two years; and in New York twice in eleven years. Perhaps these figures are not as bad as they appear on their face, as they concern urban populations only, and must include many cases which rightfully belong to outlying districts, since it has become customary for cancer patients to flock to the cities for treatment. But this assumption is refuted by the statistics which include the

entire population of a country such as Germany, where the death rate from cancer has increased seven times in the last thirty-three years. Obviously, then, cancer is on the increase in the western hemisphere. And this increase must be due to one of two things; either the disease is increasing in virulence, or human beings are becoming more susceptible to its attack. But whatever the explanation, our hard fight against cancer has thus far been a losing one.

That this is true as regards cancer of the female breast, the record of my personal experience with 137 cases will demonstrate, if ultimate recovery is considered the only test of success. In presenting these cases I have made no attempt to juggle the statistics by classifying the favorable and less favorable cases; and no case has been declined where, in my opinion, there was a fair chance of completing a radical operation. And if, on their face, the results of these operations seem less favorable than those reported by others, they are honest and without any attempt to exaggerate or belittle the surgical treatment of cancer.

I have been fortunate in being able to keep in touch with a majority of the patients presented here, who are summarized as follows: Of the 137 patients examined, 131 were operated upon. There were eighty-nine operations of the left breast; forty-one operations of the right breast, and two for supposed cancer of both breasts. Of these last two, in one the diagnosis was found to be correct, the other was a cancer of the right and Schimmelhush disease in the left breast.

There was a history of trauma in only thirty per cent. of the cases. The youngest case was in a girl of twenty-two years, and the oldest patient was seventy-nine. There were only fifteen patients under thirty-five years, while there were eighty-four patients between thirty-eight and forty-six years, and thirty-three between forty-six and seventy-nine years.

The ten cases that were operated in previous to 1894 were subjected to a less radical procedure than those operated in since that time—that is, the pectoralis major and minor were not removed, and consequently no attempt was made to remove the gland bearing fascia between these muscles, or clear out the infraclavicular and supraclavicular spaces. Since 1894, however, a very radical operation has been performed in all cases, and there has been no mortality from the operation. Only two patients have had recurrence in the scar since 1896; and there has been metastasis in the long bones in but two cases.

Of the eighty-five cases whose postoperative history I have been able to trace, there was recurrence of the cancer in six cases within a year; recurrence in forty-six within two years; recurrence in twenty-two cases within three years; and recurrence in ten cases within five years. There was a single patient alive after fifteen years. So it appears that if I had lost track of these cases at the end of one year my records would show nonrecurrence in over ninety-five per cent.; if my records had ceased at the end of two years this proportion would have been reduced to about thirty-nine per cent.; at the end of four years it would have fallen to thirteen per

cent.; and it would have dwindled to a mere 0.012 per cent. by six years. And this 0.012 per cent. represents the actual proportion of recoveries after fifteen years.

On their face these figures are discouraging if we are only considering complete cure as the ultimate goal. But when we consider the virulence of breast cancer, its certain fatality if surgical procedure is not tried, and the fact that every day of prolonged life for the patient is a day's credit, we can find some satisfaction and make some helpful deductions from the records.

There can be no question that cases operated in when the tumor is small and without glandular metastasis will give a relatively high percentage of cures for three or four years. These are the cases usually called "early." But the new-old cry for early operation is rather misleading as such. With our imperfect knowledge of cancer in general, what are we justified in calling "early"? Is it the small tumor? If the theory of Cohnheim, or Ribert or Beard, is correct, the small tumor represents a relatively late, rather than an early development. The most minute tumor when it has reached a size where it may be detected macroscopically, is a focus from which the lymph channels may have been distributing toxic matter to every part of the body for months or years. And this will be equally true if the irritation, or parasitic or chemical theory is correct.

We do not know how long the tumor has been carried before it is possible to distinguish it from the gland. We do not know whether the precancerous stage (whatever that may mean) precedes the tumor by days, months, or years. And we do not know whether trauma produces the disease, or simply excites to activity a tumor which was present. But those who are on "the firing line" know from experience, if not from the etiology of the disease, that there should be no delay in operating in what we usually call early cases. For it not infrequently happens that these apparently incipient cases prove to be well advanced ones on the operating table, as the following case illustrates:

CASE I. Mrs. B., aged forty-six years, married, three children, came to me in October, 1909, with a small tumor on the inner side of the left breast, which she had discovered that morning. The tumor was small and firm, freely movable, but with a slight dimpling of the skin. As her mother had died from inoperable scirrhus of the breast, she manifested a desire for radical operation. The axilla was quite free; but the chain of lymphatics along the vein was blocked by cancer nests. The neck was opened and the supraclavicular space cleared out. But there was a prompt recurrence in the liver in eighteen months.

I cite this case as showing what a great injustice is being done the general practitioner by the cry of the surgeon for earlier diagnosis. Here was a woman who, warned by her mother's fate, was watching apprehensively for the first sign of tumor. She sought operation the day the discovery was made. Yet the cancer proved to be well advanced even at that time.

This case and similar cases lead me to believe it probable that all cancers are operated on late in the disease, and that very early diagnoses are seldom made. Only on two occasions have I been able to make an early diagnosis of breast cancer, and in both instances it was while operating for benign tu-

mors (Schimmelbusch disease) of some years' standing. In these cases I found commencing malignancy upon section. Both were discovered while the patients were still on the operating table, and a complete radical procedure was carried out. Both patients are alive without recurrence, one three, and one seven years after operation.

These cases illustrate typically the difficulty of diagnosis before the gland is excised. A correct diagnosis can only be made in about seventy-five per cent. of the cases (Rodman and Murphy). If this is true, and as it is a well established fact that benign tumors take on malignancy easily, there is no excuse for delay in removing every tumor of the breast, benign or malignant, as soon as it is discovered. Theoretically we should be able to diagnose every malignant tumor; but practically I, for one, cannot. The following case bears out my assertion:

CASE II. Miss T., aged forty-two years, unmarried, consulted me in 1906, for a hard, indurated tumor of the right breast. I made the unqualified diagnosis of malignancy, which was confirmed by two other surgeons, and did a radical operation. But that afternoon in my laboratory I was chagrined to find a breast that was the seat of cystic degeneration, with two deep seated inflamed retention cysts. Eighteen months later the same patient presented herself with what I took to be a small cyst of the left breast. I simply removed the gland on this occasion, but was again chagrined to find upon section commencing malignancy. This patient lived nineteen months, but long enough frequently to remind me of my error.

It is a well known fact that some persons succumb quickly to small cancers, while others live for years with large ones. Is this because the toxicity is greater in some cancers, or that certain persons are better able to resist it? Until we know more about the cause of cancer we cannot answer this question with certainty. My own judgment leads me to believe, however, that it is the resistance of the patient, not the difference in the virulence of the disease. We know that some mice resist inoculation with cancer, while others succumb quickly to inoculation with the same tumor.

In this connection it may be pointed out that, coincident with the influx of people into the cities of this country there is a corresponding increase in cancer. City life undoubtedly lessens the disease resistance in the individual; hence the inference that lowered resistance accounts for the increase of cancer. But as yet this is inference only. It is true that operations upon small tumors without glandular involvement give best results; but some patients with considerable involvement make good recoveries. Two patients, operated upon by me two and four years ago, who had extensive involvement along the lymphatics which accompany the vein, are still alive without recurrence.

I have operated in several cases in which, had I realized the extent of the invasion, I should never have started the operation. For these partial excisions stimulate the malignancy (or lower the resistance?) and the recurrence is not only prompt, but tremendously toxic, and the decline is very rapid. On the other hand, these patients sometimes live for years without meddlesome surgery. I now have under my care a lady whom I saw eight years ago with a hard, ulcerated schirrus of the breast which I believed inoperable. This patient is still

alive and seems to feel well. I have known another patient to live nine years after a diagnosis had been made.

For some time I have had a very decided feeling that the neurones play a part in the etiology of cancer. Cancer of the human body is cancer of some selective tissue, and no matter where the metastasis takes place it is always of the same cellular structure as the original cancer. This is one reason why the microbic theory fails to make much headway. But this does not antagonize the theory of a chemical irritant. And as no chemical action of the body can take place without the action of the nervous system, we may take one step backward and suspect that the neurones play some selective part in the cancer problem. Some time ago we exposed the posterior nerve roots of six rats and injected them with a certain toxic ingredient of the human body. In the course of three to seven weeks, small tumors appeared at the terminal nerve filaments. These tumors were rat cancers. But I have never been able to repeat the experiment, and I now fear that the rats were infected by other carcinomatous rats.

It seems to me that if my experience teaches me anything, it is that we should always give a very guarded prognosis in any operation for cancer of the breast. It brings less disgrace on surgery to say "I don't know," than to have a disappointed family say "I told you so." Here is an illustrative case—one in which any one would have given a hopeless prognosis:

CASE III. Mrs. H., aged fifty-two years, married, seven children, came to me in 1907 with large schirrus of the left breast. She had known of the tumor for one year. Operation complete, cancer nests along vein into the neck, infraclavicular and supraclavicular spaces cleared out, too deep beneath clavicle to remove all. Schirrus verified on macroscopical and microscopical examination. Recurrence in neck in one year. Second operation followed by entire disappearance of symptoms until October, 1912. Patient now dying of cancer of the liver and bile ducts.

SOME IMPORTANT POINTS IN THE RADICAL OPERATION.

Enough has been said by competent observers about the technique of the operation. There are, however, certain points which present themselves to each man's mind which to him seem to make either a success or a failure of every procedure.

1. Any breast operation to be radical must sacrifice the pectorales, major and minor, but in some cases the upper clavicular portion of the pectoralis major may be left, and in so doing we get better arm function.

2. If you are attempting a radical procedure all connecting lymphatic chains should be removed, as has been shown by many observers. This may require wide work, as the lymphatics drain the breast in all directions, even to perforating between the intercostal spaces.

3. No one method of incision is applicable in all cases. It is always necessary to remove large areas of skin, and grafting must be resorted to in a minority of cases.

4. All late cases that are on the border line between operable and inoperable cases should be x-rayed to determine the possibility of metastasis in the long bones. Especially is this true if the patients suffer any neuralgic pains in certain joints.

I have never been able to demonstrate to my own satisfaction that the x ray treatment, either before or after operation, had any effect whatsoever. During the last two years all my cancer patients have had a Wassermann reaction tried, but in none, except those with a history of syphilis, have we been able to get any reaction. About thirty per cent. of patients have edema of the arm following operation. This is not simply due to cicatricial contraction and compression of the vein in the axilla (Murphy), but also to lymphatic stasis (Carwardine, Henle, and others).

It is a fact of practical importance that severe edema rarely occurs except after recurrence.

THE CURE OF PROLAPSE OF THE UTERUS AND BLADDER BY PLASTIC OPERATION.*

By L. GRANT BALDWIN, M. D.,
New York.

That opinions widely at variance with each other on this subject are so frequently seen in the medical press and heard in papers read and discussed in the medical societies can be taken as proof that the ideal procedure has not yet been devised. The operation described and done by Doctor Emmett many years ago, somewhat modified by me, is the one for which I desire to make a plea. Some changes in the technique have been made, which in my hands have been helpful and satisfactory. The operation, as described below, is applicable to *all* degrees of vesical and uterine prolapse; from the small egg shaped tumor appearing at the introitus, composed of the anterior vaginal wall, to the worst cases of complete inversion of the whole vagina, with the uterus, bladder, and vagina between the patient's thighs, with or without the anterior wall of the rectum. Since returning to this method of treating these conditions I have found *only one* case in which a satisfactory result could not be obtained. In this patient the condition had existed for many years and an unusual degree of hypertrophy of the mucous membrane was present which made an infolding of it impossible.

The operation is best suited to patients beyond the childbearing age. I have, however, practised it on a few before that time. I have not personally attended any of my operated patients in childbirth, but know of four who have been delivered by others; in the practice of one of my coworkers, one such case went through her delivery without damage and convalesced with the uterus and bladder in position.

The factors that maintain the uterus in the normal position of anteversion are often the subject of discussion, and there is a wide diversity of opinion on this anatomical point. In considering the forces and injuries causing prolapse of the uterus and bladder, it must be borne in mind that influences other than childbearing are not infrequently the cause, among them continued and severe con-

stipation, masturbation, and the habitual practice of withdrawal as a preventive of conception. It is true, however, that the injuries associated with parturition are responsible in the vast majority of instances, and of these injuries the most important is the forcing down of the cervix, and with it the anterior vaginal wall, before the occiput, tearing away the attachments above and in front. This can and should be prevented in most cases by pushing the dilated cervix up with the finger over the occiput during the uterine contractions. One thing is certain; so long as the uterus remains in the position of normal anteversion, it cannot become proident, although a considerable degree of cystocele may develop without the uterus leaving its normal position in the pelvis.

The ideal treatment of any malady is to restore the abnormal to the normal. Can this be accomplished in the cases under consideration? Undoubtedly the answer must be in the negative, but our aim should be to attain it as nearly as possible, always considering the postoperative morbidity as well as the psychic condition of the patient. In other words, a woman relieved of her suffering, her uterus and bladder retained within the introitus, and the vagina restored to its normal length and size, is a better member of society than her sister with one or more of her otherwise healthy viscera removed.

No one of the many operations proposed for the relief of this condition, possibly with the exception of the old Sims operation, is easy to perform, the one I advocate being perhaps the most difficult of all. The important first step in this operation is that the uterus must be replaced and retained in its normal position of anteversion, the cervix pointing backward and downward into the hollow of the sacrum. This should be done with the patient on her back, but to retain it during the subsequent stages of the operation, and until the sutures are secured, a change to the Sims position is necessary. There is also material advantage in having the patient's head slightly lower than her hips. A Cleveland speculum, *second size*, is the best retractor for the perineum. If the patient is not past the menopause, the uterus should always be curetted and any lacerations of the cervix should be repaired. If the cervix is too long, as is often the case, it should be amputated. Ulcerations must be scraped down to healthy tissue or cut away. So much can be done with the patient on her back; if she is on the side care must be taken to insure the proper position of the fundus. A stitch of silk or silkworm gut is now passed through the anterior lip of the cervix, or its remaining stump, then through the fenestrum in the point of the speculum, and tied, thus drawing the cervix to an exaggerated position in the hollow of the sacrum. The cystocele is now pushed forward into the bladder until the redundant tissue disappears, this condition being maintained by an assistant. Now will be apparent the points in the vagina which are to be brought in apposition.

First: In the left lateral sulcus find a point which can be drawn with some degree of force to the centre of the cervix; some force is necessary on account of the stretching of the parts by the specu-

*Read at a meeting of the Brooklyn Medical Association, May 1912.

lum. This point must be located slightly higher up in the vagina than the normal position of the cervix, but not in the exaggerated position where it is held by the stitch through the speculum. This point

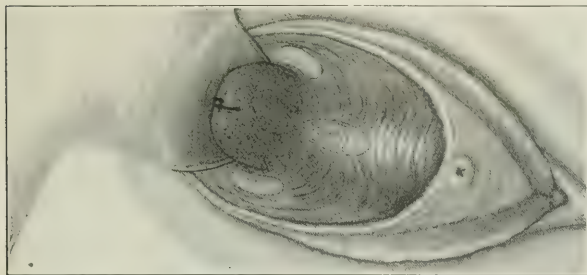


FIG. 1.—Showing points in vagina to be brought in apposition.

having been carefully determined, a denudation is made measuring about one half by three fourths of an inch, its actual extent varying with the redundancy of the tissues. If there is much tendency on the part of the vaginal walls to fold on themselves, it is well to pass a catgut suture through the edge

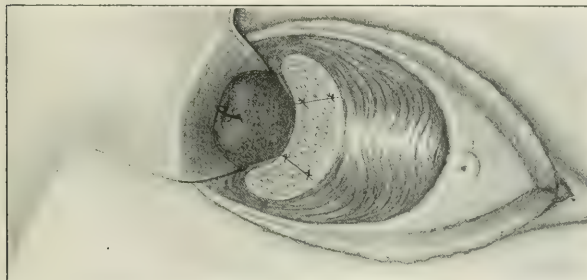


FIG. 2.—Showing denuded area, continuous from one lateral suture to the other.

of the denuded area for future identification. Next a denudation is made on the anterior vaginal wall, one and one half time as wide as the lateral denudation and of the required length, just external to the cervix and about one half inch from its anterior lip, through which the fixation stitch has been passed. A point in the right sulcus is now located,

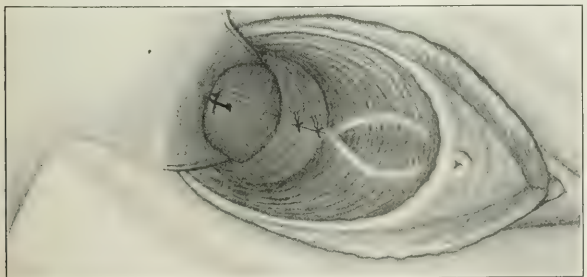


FIG. 3.—Showing two folds on the anterior vaginal wall, extending from the base of the urethra in crescentic shape to the more external of the two silver wire sutures.

corresponding to that in the left and a similar denudation is made. These denudations must be made *through the entire mucous membrane* and care must be taken to have them at equal distances from the central denudation. A fine catgut (No. 0) is used to approximate the edges of the lateral denudations to the central one, i. e., the right edge of the left one to the left edge of the central one, and the left edge of the right one to the right edge of the central one. This procedure spreads out the denuded area, making it continuous from one lateral sulcus to the other.

Two silver wires are now passed under the entire denuded area, care being taken to pull out, with a tenaculum or forceps, the lateral areas toward the cervix, so that the sutures can be passed sufficiently deep to secure a firm hold on all the tissues. These sutures are twisted while an assistant makes pressure with a sound over the central denudation to facilitate the apposition. For this purpose No. 26 or 24 silver wire is not too large. The anterior vaginal wall will now fold in toward the bladder instead of in the opposite direction; if it does not, when very redundant, it may be made to do so by the assistant. Now will be made apparent the parts to be brought together, down to the external limit of the cystocele. Two folds on the anterior vaginal wall can be easily identified, extending from the base of the urethra in crescentic shape up to the more external of the two silver wire sutures already twisted.

The edges of these folds are next denuded and the proximal edges united with fine catgut. This being done the spread out denuded area is united by silver wire (No. 27 or 28.) The sutures are to be passed so as to draw up the vaginal wall as much as possible toward the cervix; to accomplish this they must be passed *slanting* from above downward on the right side to the line of catgut suture in the centre, continuing through the left side with a corresponding slant.

The fixation suture through the cervix and the fenestrum of the speculum is now cut and the speculum withdrawn; a small Sims's speculum is substituted and the silver sutures twisted. Some catgut sutures may be necessary to approximate the mucous membrane between the silver. Silkworm gut may be used, but it is more apt to cut through the tissues, and the apposition of the edges of the wound cannot be as well regulated as with silver wire. If there is a urethrocele it cannot be included in the operation on the anterior wall and must be treated by itself. The posterior vaginal wall, obviously, must be re-

paired by some method which will as far as possible cause it to hug and support the anterior wall. If there is a large rectocele a flap splitting operation will best secure the desired result. Here more than anywhere else must the operation for repair be selected according to the injury found, always being careful to repair the damage *inside* the natural location of the hymen.

It is here appropriate to direct attention to the difference in technique above described from the operation as originally done by Emmett. The use of the Cleveland speculum with the fixation stitch through the cervix, is invaluable in retaining the cervix in the hollow of the sacrum and thereby the fundus in an exaggerated position of anteversion, until the first two sutures are twisted and the others in place, ready to be twisted. The spreading out of the denuded areas by means of the fine catgut sutures uniting the proximal edges of these areas, is also important, as it insures a broad, raw surface sufficient to secure a firm union and a band which will keep the cervix from again being forced toward the pubic bone and into a position parallel with the vaginal canal. Again, this procedure makes more certain the firm hold under the lateral areas, which is absolutely imperative, for from these two points must come the support which will keep the cervix in place. The slight Trendelenburg position suggested is a material aid in securing the reduction of the displaced bladder.

Among the advantages of this method are that it, as nearly as possible, restores to the normal the size and shape of the vaginal canal, an item of no small importance. It is free from operative mortality and is attended by an inconsiderable amount of suffering on the part of the patient. Last, it achieves a large percentage of symptomatic and anatomical cures. It has been a source of considerable surprise to me to observe the degree of involution and retraction which takes place in all the involved tissues, three or four months after operation. This is especially true in regard to the structures directly implicated in the cystocele, the posterior bladder wall in many instances returning to practically the normal position. Vesical symptoms immediately after the operation and after the patient is up and about are strikingly absent.

Among the objections urged against this operation are the length of time it takes to complete it, and the possible irritation from the infolding of so much undenuded mucous membrane. It is true that the operation cannot be done in less than an hour of hard work. I have never had a report of trouble from the infolding of the undenuded surfaces.

From October, 1895, to January, 1909, I operated by this method, fifty-six times upon patients with

varying degrees of uterine and vesical prolapse, the majority having complete procidentia. The patients were sent these questions with the request that they answer them or present themselves for examination:

1. Have you had any return of prolapse? 2. Have you had any return of pain, or bearing down sensations? 3. Have you had any trouble with bladder or bowels? 4. Do you consider yourself cured,

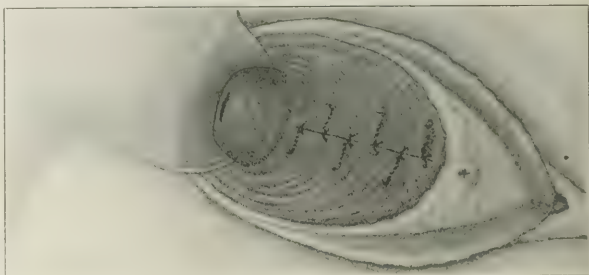


FIG. 5.—Showing approximation of the mucous membrane.

improved, or not improved? 5. Have you since had any operation for the same condition? 6. Have you had any children since the operation?

Of the fifty-six letters twenty were returned by the postal authorities. Of these the majority had been addressed to hospital patients—eighteen, of whom no trace could be found by personal search. Of the remaining thirty-six, answers were received from twenty-eight, and eight were examined personally. Of the twenty-eight answers two were from relatives stating that the patients had died, one from gallstones, the other from pneumonia, but that in both the prolapse had been cured.

The other replies were as follows:

In reply to question 1: No, 24; yes, 2.

In reply to question 2: No, 20; yes, 4; slight, 2.

In reply to question 3: No, 20; yes, 3; slight, 3.

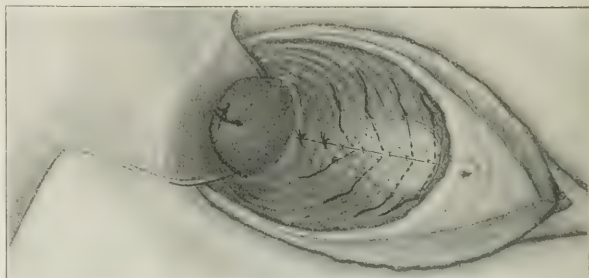


FIG. 4.—Showing sutures slanting from above downward.

In reply to question 4: Cured, 20; improved, 4; not improved, 2.

In reply to question 5: No, 26.

In reply to question 6: No, 25; yes, 1.

Of the two patients answering "not improved" one had borne two children. Of the eight patients presenting themselves for examination, two had

slight cystocele; they both had originally complete procidentia. A third patient who had a bad retroversion showed no bulging of the anterior or posterior walls, but had a marked retroversion which had prolapsed halfway down the vagina.

Of thirty-six cases then, there were two failures, all others being improved or cured. One was an immediate failure, owing to my not having carried the denudation far enough down the anterior wall. The patient returned five months later for a second operation, when I corrected the mistake. She has since remained cured—over a period of two and a half years, from January 1, 1909, to April 1, 1912. I have operated upon fifty-nine similar patients, many of whom have been seen and are known to be cured. One operation was an immediate failure from infection, but a second operation had a perfect result. No special canvass of these fifty-nine cases has been made and none of them is included in the series.

28 SCHERMERHORN STREET, BROOKLYN.

LANE'S KINK OF THE ILEUM.*

With Report of Six Cases.

By C. F. KIVLIN, M. D.,

Troy, N. Y.

Surgeon, St. Joseph's Maternity Hospital.

This condition derived its name from that illustrious English surgeon, Arbuthnot Lane, who has done wonderful work in the correction of this deformity. It is surprising to see how fast and how numerous the surgical profession finds cases when their attention has been called to some new condition; therefore it is of no wonder that we are to-day reading so much in the literature of Lane's kink or Jackson's membrane. We all can recall cases which in the retrospect were passed by with little or no thought, but now that the new area has been begun gives us great concern and we are looking, ever on the alert for this condition and rightfully enough we should, because it is the solution of many, but not all of the failures we have encountered after the removal of the appendix, to have the same condition of the patient from a symptomatic standpoint as we had before the operation.

Lane describes his kink as follows: There develops on the surface of the mesentery of the last few inches of the small intestines a new band, which at first forms part of the under surface of the mesentery. Later it forms a ligament distinct from the mesentery. This ligament contracts and deforms the ileum, producing a kink or obstruction of this portion of the intestines, especially in the erect posture of the trunk.

In consequence of this kink, the small intestine becomes very much distended and this dilatation may extend up as far as the pylorus. The symptoms produced by this obstruction are superficially very much like those of appendicitis, and in consequence a large number of normal appendices have been removed to bring about the cure of symptoms resulting from this obstruction, needless to say, without any particular benefit or advantage to the

patient. The symptoms produced by this type of obstruction are very definite and need not be mistaken for those which result from a kink in the appendix. This kinking of the appendix is frequently associated with the kinking of the ileum;

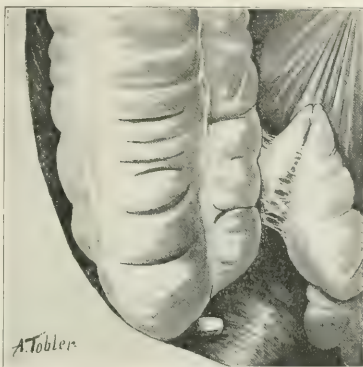


FIG. 1.—Drawing from Martin's case, representing condition found in Case I.

they are the result of the same cause, namely, the effort of Nature to keep the cecum as much in its place and out of the pelvis as it can.

ETIOLOGY, OUTLINED BY MARTIN.

The different conditions I have observed accompanying pathological kinks of the last six inches of the ileum are as follows: 1. An extreme prolapse of the ileum and ascending colon, resulting in an inverted V shaped kink, the apex of the bend being four inches from the ileum's attachment to the cecum with the right arm of the V adherent

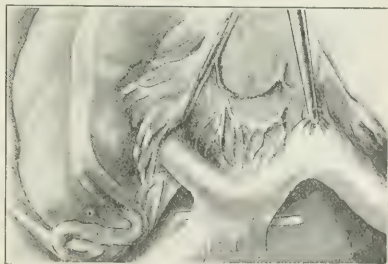


FIG. 2.—Drawing from C. H. Mayo's case, representing Cases II to VI.

to the colon, the two arms of the V being closely approximated and adherent, with their two portions of mesentery adhered together, resulting in a marked narrowing in the lumen of the bowel.

2. Extreme prolapse of the stomach with transverse colon prolapsed beneath the stomach, the small intestines filling the pelvis and lower abdomen underneath the stomach and colon, resulting in a definite, right angle kink of the ileum near its attachment to the cecum, and a V shaped bend, with its apex attached to the broad ligament, with the

*Read before the Rensselaer County Medical Society, March 12, 1912.

two arms, three inches in length, approximated, and three mesenteries thickened, and adherent to each other and to the walls of the intestines.

3. Cases in which both cecum and small intestine are prolapsed, and where a tendency to general visceral prolapse is present, resulting in a variety of kinks in the last six inches of ileum, due to pull upon its short mesentery; the shape and direction of the bend depending upon the particular influence exerted upon it by the abnormal position of the viscera surrounding it.

A very common form of kink that I have observed in these cases is a horseshoe bend with a three inch curve, the concavity of the curve looking toward the diaphragm, and the bowel at the centre of the curve attached to, and rolled in the left leaf of its mesentery, materially obstructing its calibre.

The kinks or bends, in my opinion, are due therefore to a decided displaceability, not only of the cecum, but of all the viscera surrounding the last three inches of the ileum, traumatizing it by undue pulling on its distal end in the case of the cecum, on its proximal end in the case of the remainder of the ileum, or by pressing upon it and its attached mesentery, and grinding their opposing forces together in case of marked displacement of the superimposed viscera, such as the right kidney, the liver, or stomach.

SYMPTOMS, DESCRIBED BY CONNELL.

They are those common to general enteroptosis, such as malaise, headache, backache, anorexia, nausea, eructation of gas; sometimes vomiting, pain, or sense of fullness after eating; loss of weight and of muscular tone. Constipation may be very obstinate and may be the first symptom mentioned, but there may be brief periods of diarrhea. There is frequently a sensation described as "coals of fire," and the right iliac region may become exquisitely tender and so oversensitive that even the weight of bedclothes becomes intolerable, which naturally suggests the diagnosis of hysteria. The pain varies greatly, from a mere sense of discomfort, to that which may demand morphine. The severe colics come on at irregular intervals, and the pain and tenderness are usually located in the right iliac fossa and in the region of the umbilicus. There may be a swelling, due to gas in cecum. There is no increase in the temperature, and the attack is terminated or greatly relieved by recumbency, diet, enema, and lavage, one or all, hence the temporary relief following appendectomy. These attacks are repeated until there is a constant pain in the right side of the abdomen, which makes a chronic invalid of the patient. Later there develops an autointoxication with greatly impaired nutrition, with the foul breath, clammy extremities, muddy skin, the functional changes in the heart, and neurasthenia, all so well described by Lane under the caption "chronic intestinal stasis," which is frequently a preliminary stage in anemia, tuberculosis, and cancer.

TREATMENT.

Treatment is continued in its infant and evolutionary stage as regards the true surgical solution, and until the etiological factors have been proved positive it will be varied as the individual surgeon sees it from different mechanical standpoints.

Laparotomy, kinks sought for, division of the adherent structure so that the ileum will be free as when it was normal, any other pathological condition present to be treated at the same time, also appendix removed, whether it is in a normal or pathological condition. Such is the common routine. I believe this in a great number, in fact, in most of the cases, will insure recovery. More particularly will this be so in the future, from the fact that the condition will be treated earlier than in the past, thus insuring recovery before the condition has progressed so far that it is futile merely to separate the bands, which cause symptoms that make life almost unbearable. When the condition has progressed thus far, Lane's ideas and teachings will have to be considered more forcibly than they have up to the present. Lane believes that the condition invariably returns, and that the only radical cure is ileocolostomy.

CASE I. Mrs. —, patient of Doctor Gray, Arlington, Vt. Condition found on operation, adherent appendix, cyst of right ovary, size of a cocoanut, inverted V shape Lane's kink of the ileum, almost identical with Martin's case, which is shown in the photograph. Operation, at Troy Hospital, ovariectomy, appendix removed, division of the band by scissors close to the ileum.

CASE II. Miss —, eighteen years old, patient of Doctor Sulzmann. Condition found on operation, slight cystic change in right ovary, appendix kinked, Lane's kink of ileum. Operation, at Leonard Hospital, Troy, N. Y., ovary punctured, appendix removed, band removed with scissors close to the ileum, adherent band tied and cut away.

CASE III. Miss —, aged twenty-two years. Condition found on operation, a previous operation for appendicitis, Lane's kink of the ileum, left cystic ovary, size of an orange. Operation at Troy Hospital, ovariectomy, removal of band with scissors close to ileum, adherent band tied and cut away.

CASE IV. Miss —, aged thirty years, patient of Doctor Archambault. Condition found on operation, retroversion of uterus, appendicitis, Lane's kink. Operation, at Maternity Hospital, Troy, N. Y., sacrouterine ligament shortened, appendix removed, band removed with scissors close to the ileum, band tied and cut away.

CASE V. Miss —, aged thirty-four years, patient of Doctor Dwyer, of Amsterdam, N. Y. Condition found on operation, retroflexion of the uterus, appendicitis, Lane's kink. Operation, at Amsterdam Hospital, Amsterdam, N. Y., curettement, removal of appendix, removal of band close to the ileum with scissors, band tied and cut away.

CASE VI. Miss —, aged twenty-six years, patient of Doctor Sulzmann. Condition found on operation, Lane's kink, appendix normal. Operation, at Troy Hospital, removal of appendix, destruction of Lane's kink, band removed close to ileum with scissors, bands tied and cut away.

NASAL DEFORMITY CORRECTED BY AUTOIMPLANTATION OF THE SEPTAL CARTILAGE.*

By OTTO GLOGAU, M. D.,
New York,

Chief, Ear, Nose, and Throat Department, St. Mark's and Bronx Hospital Dispensaries.

CASE. Mr. J. M., twenty years of age, was referred to me by Dr. Fritz Neumann, February 27, 1912.

Previous history: Patient fell, four years ago, and broke his nose. Since that time he had been unable to breathe through the nose. The visible deformity however was the only cause why he presented himself for treatment.

* Read before the Section in Rhinology of the New York Academy of Medicine, May 22, 1912.

Present condition: Patient was, except for the nasal trouble and its immediate consequences, in perfect health. His appearance was marred by a typical saddle nose with the special feature of the tip of the nose projecting more conspicuously than usual.

Intranasal examination revealed a multiple fracture of the cartilaginous septum with the convexity of the deviation toward the right side. The bony septum was also deviated toward the same side. The uppermost part of the cartilaginous septum consisted of mucous lining exclusively, the cartilage having been pushed downward by the injury.

As the patient had an unsuccessful paraffin injection done a year ago, another method had to be



FIG. 1.—Before operation

resorted to. The patient would not consent to have the deformity corrected by Carter's method of transplanting a part of the rib. It occurred to the writer, therefore, to correct the nasal obstruction and external deformity simultaneously by

implanting a part of the cartilage removed intranasally into the gap.

Securing the assistance of Doctor Shrier, the septum was prepared as for submucous resection by applying a twenty per cent. cocaine solution and a one to 5,000 epinephrine solution, with cotton pledgets to the Schneiderian membrane. The usual incision was then made on the right side, but the knife was carried right through the cartilage toward the mucous lining of the left side without, however, injuring the latter. The cartilage was then elevated from the mucous lining on the left side, and by means of a strong pair of scissors an incision was made at its upper and lower margins. The cartilage flap, covered by the mucous lining of the right side, was thus attached at its posterior part only. The nostrils were now plugged with



FIG. 2.—After operation

a piece of cotton, and the back of the nose cleaned aseptically. A 0.5 per cent. cocaine solution, containing a few drops of epinephrine was then injected hypodermically at the middle of the nose toward the tip. A transverse incision of about fifteen mm. was then made at the lower end of the nasal bones. Through this incision, by means of a knife, the subcutaneous tissue was separated along the back of the nose down to the tip. A sharp spoon was then introduced into this pocket and the cartilage at the tip of the nose curetted. The external wound was then covered by a piece of gauze. The cartilaginous flap was now severed

from its posterior attachment and put into a physiological salt solution. By means of a Bier's skin grafting knife, the superficial epithelial layers of the mucosa were then removed, and the cartilage, covered by its perichondrium, shaped by means of a pair of scissors to fit into the deformity. The cartilage was then inserted into the deformity, and the transverse incision closed. The wound was covered by a small piece of iodoform gauze and adhesive plaster.

The mucous lining over the bony part of the deviated septum was then elevated on both sides, and the bony deviation removed by the writer's submucous saws. The septal mucous lining of the left side remained intact, while on the right side there was a loss of substance corresponding to the piece of cartilage removed with its rightsided mucoperichondrium. The nasal cavities were then painted with a ten per cent. oily solution of iodine and packed in the usual way.

The intranasal packing was removed after forty-eight hours, and the dressing of the external wound was changed every day. After the fourth day the ligature began to suppurate and the wound opened again. Healing by granulation took place. The inserted cartilage became permanently attached, and the deformity may now be considered to be corrected.

1320 MADISON AVENUE.

CAUSE, PREVENTION, AND CARE OF WEAK AND FLAT FEET.*

The Foot as a Shock Absorber.

By W. W. STEVENS, M. D.,

Clinical Assistant, Orthopedic Outpatient Department, Jefferson Medical College Hospital, Philadelphia.

I find it very difficult adequately to describe my conception of the physical (mechanical) principles that maintain the integrity of the tarsus and the offices and actions of its component parts. However, a proper appreciation of its varied structures, their complex and compensating relations in the many different positions which they are called to assume while performing their efficient work, is necessary if one wishes to understand the etiology of weak and flat feet.

To my mind the subject is as much one of mechanics or physics as of anatomy and pathology. Nature usually provides with a lavish hand, otherwise the crimes which may be laid at the door of our modern shoe, would land us all on crutches, if not in the hospital.

There are some feet which very early assume a position of planus; some continuously painful or not which gradually lose their proper contour; and some particularly robust which, thanks to the amount of reserve strength, remain unaffected by the abnormal conditions which the modern shoe imposes. It is of the second of these classes I wish to speak.

Whitman, Ellis, and others very fully describe the interesting particulars of the facets of the

*Since this article was written new facts particularly bearing on my deductions have been discovered, which the author hopes to embody in a new communication to be published at a later date.

astragalus and the other bones which make up the tarsus, the lines of force, the strengthening of the foot by the muscles, tendons, and ligaments, etc., all of which must be well in mind when considering this matter. I want, however, to approach the subject from a different standpoint than is usually taken. The bones, muscles, and ligaments have been thoroughly and exhaustively studied and their actions beautifully described. In this paper, the foot, as a whole, and the soft structures forming the sole, looked at *en masse*, as a necessary and important unit, will receive the major part of our attention.

The sole may be studied as to its shape, quality (resiliency), need, office, and effectiveness. It should be, as to shape, sufficiently thick to fill in the gap under the tarsal and metatarsal bones, permitting them, as is intended, to bear part of the weight when both or either the heel and ball are in contact with the ground. As to quality, its yielding consistency permits a gradual advance of weight bearing from heel to toe, thus avoiding the jerk on the midtarsal joints. Its need is obviously to protect the bones, and by acting as a cushion to add effectively to the foot as a shock absorber. As the foot acts as a shock absorber to the body, so the sole, by its compressibility, acts in the same capacity to the foot. As a swell of the ocean raises and lowers a great ship without shock, the sole permits a wave pressure from heel to toe. This may be appreciated by experiencing the absence of jar of rubber tired vehicles as compared with iron tired ones.

Although I believe the principal feature of the peculiar construction of the foot to be its shock absorbing quality, I wish to suggest, and this point is either not mentioned or fails to be emphasized in works on orthopedics, that our feet are, in the first instance, intended to walk on uneven ground, where the middle of the sole frequently has to bear as much weight as the heel or ball; so that the assertion of some, that the longitudinal and transverse arches are specifically arranged to protect the vessels, will not hold. It is my belief that they are specially intended to give stability to the station by properly fitting and grasping the slope or inequality of the surface.

That the outer half of the middle of the sole is intended to bear pressure all of the time, and a greater pressure some of the time, is a cardinal point in the theory I advance, that the shank of a shoe is its greatest physiological defect, giving no proper support to the tarsal joints, failing, as it does, to hold up the sole underlying them and the base of the fifth metatarsal bone. To the base of the fifth metatarsal bone, lying in the same plane under pressure as the os calcis and distal end of the first metatarsal I wish to call attention as a specific foundation of the inner arch.

In other words, the principle emphasized in a flexible shank shoe having a heel, is physiologically incorrect for standing or walking on hard and even surfaces, i. e., floor or sidewalk; while minus the heel, or even with the heel, it is correct if used to progress over sticks and stones, sod, and the natural uneven surface of the fields, where such minor elevations fit into the middle of the sole and make it for the nonce a weight bearing portion.

Instead of the body weight being supported on a

yielding bridge—our modern shoe—the body ought to have between these two points at all times the support of the outside of the sole and the base of the fifth metatarsal bone resting on as rigid a substance as is provided for the heel and front sole.

In contemplating a fallen arch in masonry, we find the keystone farthest removed from its proper position, but the foundation of the pillar or pillars weak and inadequate through not resting on a firm base, though responsible for the catastrophe, remaining close by their original places. And so the sagging of the base of the fifth metatarsal causes, first, a stretching of the plantar fascia, and when this is accomplished, unintended strain on the joints of the tarsus, functional disturbance, and later, displacement, the base of the fifth metatarsal remaining apparently unaltered.

In parenthesis, permit me to say that this pulling on the string of the bow, the plantar fascia, if responsible for irritation exostoses of the os calcis and metatarsalgia, is relieved by this same support.

This brings us to a consideration of the bones in their relation to weight bearing, or thrust, in the act of walking. I wish to call attention to the fact that we have to deal with the effect of weight, not only on putting the foot to the ground, but also when raising and sustaining the body while carrying the elevated foot to an advanced position, and this, I believe, creates the greater strain on the tarsal joints, inasmuch as the general reinforcing contraction follows, while in lowering the weight it precedes the point of greatest strain. This is obviously a fine point, but the whole body mechanism consists of fine points, as is illustrated by the beautiful arrangement for increasing and decreasing the convexity of the lens, the wonderful protection afforded the trachea by the epiglottis, and the very fine adjustment of the nerves of the semicircular canals, which permit us to maintain our equilibrium. And though our feet are not very highly honored members, yet an intimate knowledge of them reveals interesting qualities of complex action with precision. An Irish physiologist told his class that the reason the heart could work all the time was because it was only working half the time. And so we walk with only one foot; the other is resting half the time.

The foot arrangement for walking is an application of the principle of the lever, power, fulcrum, and weight. The power is furnished by the calf muscles; the fulcrum by the metatarsophalangeal articulation; the weight by the body. The lever, in the case of the foot, is of many pieces, and in very intricate arrangement. Each joint or articulation must stand the strain approximately of the full amount of power to which the whole is subjected.

The midtarsal joint of a 150 pound man must stand the strain of 150 pounds at every step, and it very often fails under modern conditions on account of the dissipation of the resiliency of the sole and the middle support or pillar foundation, the base of the fifth metatarsal bone, being entirely ineffectual on account of its resting on a sagging base, the yielding shank of a leather shoe.

In the experiments I have made, I find that the weight bearing or pressure of a 168 pound man, when standing balanced on both bare feet, is as follows:

Both feet.

Os calcis	23	lbs.
Distal end, 1st metatarsal	13½	lbs.
Base, 5th metatarsal	5½	lbs.

One foot.

Os calcis	47½	lbs.
Distal end, 1st metatarsal	23	lbs.
Base, 5th metatarsal	12½	lbs.

Coming down from standing on toes of both feet the base of the fifth metatarsal exerted a pressure of seven and a half pounds, while the same manœuvre from a balance on the toes of one foot exerted a pressure of twenty-six pounds. Pulling on a rope fastened to the floor, with the resistance concentrated on one foot, the result was as follows:

Os calcis	100	lbs.
Distal end, 1st metatarsal	68	lbs.
Base, 5th metatarsal	50	lbs.

These figures conclusively show that the considerable weight, five and a half pounds, twelve and a half pounds, seven and a half pounds, twenty-six pounds, and fifty pounds, which would normally, bare footed, be transferred to the ground through the base of the fifth metatarsal bone, is all extra strain thrown on the tarsal joints on account of the insufficiency or absence of any support to that portion of the sole while wearing a modern shoe.

It has been thought that the height of the heel created this condition, but such seems not to be the case. On the contrary, though it displaces the os calcis (Bradford, 1911), a high heel rather adds to the stability of the foot by tilting the articulating, weight bearing facets of the tarsal bones to a more nearly horizontal plane, thus relieving the strain on the ligaments.

The height of the heel is not a factor. Any heel at all, as the way shoes are at present constructed, furnishes no support for the midsole. The important condition is, the length of the unsupported foot sole, which depends on the distance from shoe heel to the ground contact portion of shoe sole, and the rigidity or flexibility of the shank. At first glance it would seem that a perfectly rigid shank would meet the conditions, and barring minor matters, which we will not now consider, it would do so if another and very important cause of stress on the tarsus was not caused by this absence of material from the bearing surface of the shoe. I refer to the fact of its causing two points to receive the impact instead of one, which in damaging effect is similar to that caused by the removal of a portion of the periphery of a wheel, causing a flat wheel, the strain and wear of which to itself and the parts above are well known.

As to treatment, in addition to exercise to strengthen the muscles, raising the inner edge of sole is required in order to change the line of force. Permit me to suggest doing away with the effect of the heel by filling in the space under the shank, so as to furnish a firm foundation for the first stone of one of the pillars of the arch, the base of the fifth metatarsal bone, and to form a continuous tread to prevent the jerk on the joints of the tarsus.

It is interesting to note that the soles of the feet in the act of walking describe very closely sections of the rim of a wheel in motion.

MORTALITY OF LOBAR PNEUMONIA IN ALCOHOLIC SUBJECTS.¹

BY CHARLES K. STILLMAN, M.D.,
Mystic, Conn.

As a result of the exhaustive study which the subject has received during the past quarter century, the outcome in most cases of uncomplicated lobar pneumonia can be predicted with considerable accuracy. For a lobar pneumonia complicated by chronic alcoholism, however, this statement does not hold true, because it is nearly impossible to determine beforehand to what extent degenerative changes in the tissues have taken place. While the expert is sometimes able from experience to form a more or less successful guess as to outcome, the private practitioner has to depend chiefly on the published mortality statistics in forming his prediction. It follows that these should in no sense be misleading.

The prevailing impression with regard to the mortality figures of alcoholics with lobar pneumonia is shown by the following extracts taken from the literature; thus Cohen (1), one of the pioneers in the study of "alcoholic pneumonia" reported that of fifty-four such patients treated at the Breslau Hospital, twenty-four died. Rénon (2) gives a mortality of forty per cent. Albutt (3) after giving 21.8 per cent. as a general hospital average in lobar pneumonia, goes on to state that the mortality is much higher in drunkards and heavy drinkers, "but that it is difficult to express the greater mortality in figures because of the impossibility of defining a heavy drinker for purposes of statistics." He remarks that "if we say chronic alcoholism doubles the mortality we are well within the truth." Radin (4) says that alcoholism, especially if chronic, is generally a death warrant if pneumonia supervenes. The last named writer thus seems to regard the condition as more serious than the published figures would indicate.

The present study was undertaken in order to solve a doubt as to the accuracy of the mortality statistics as given in some textbooks. Our conclusions are based on the findings in 200 cases of lobar pneumonia in individuals who showed well marked symptoms of chronic alcoholic poisoning. These cases were drawn from the alcoholic and medical wards of Bellevue Hospital and many of them were seen and studied by the writer in person. Very mild cases of alcoholism were not included in the series, since their clinical interest seemed wholly negative.

In accordance with the customary usage, our first step after collecting the material was to group the cases according to the degree of their alcoholic manifestations. There seemed to be little difficulty in making out two well defined clinical groups. These will be referred to as: 1, Free drinkers; and, 2, excessive drinkers. The distinctions were made as follows:

¹These statistics were obtained in the course of certain investigations. (See Edema of the Pia arachnoid, etc., *Archives of Internal Medicine*, viii, pp. 193-237, 1911) carried out under the auspices of the Department of Pathology of Bellevue Hospital, Charles Norris, director, and owing to their clinical nature were regarded as suitable for separate publication. I wish to thank Doctor Norris for a critical reading of this paper.

1. *Free drinkers.* Patients included in this class showed well marked tremor of the fingers, coated tremulous tongue, exaggerated reflexes, general nervousness, and usually signs of chronic gastritis. They were generally well nourished, often strong and muscular, and without signs of pronounced cardiovascular changes. They habitually used from three to ten glasses of whisky and from five to fifteen glasses of beer per diem, the average being from four to six whiskeys and from six to eight glasses of beer. This group was largely composed of the type of individual who finds his chief relaxation in the social atmosphere of the saloon, but who, being vigorous and able to work, can contribute to the support of his family.

2. *Excessive drinkers.* The clinical signs of alcoholism in patients included in this class were similar to, though usually more pronounced than in those of the preceding class. In addition, they frequently showed signs of cardiovascular changes, frequent irregularity of the heart, pallor, and more pronounced signs of degeneracy as shown by changed facial expression and listlessness of demeanor. A large proportion were poorly nourished individuals. In this class were included all who had been readmitted to the alcoholic wards, and those in whom lobar pneumonia developed in the course of an apparently primary attack of delirium tremens.² It was found that they habitually used over eight glasses of whiskey a day, the average being twelve to fourteen, and running as high as twenty in individual instances. One drank "all he could get" while another who had the Peruna habit, confessed to having imbibed the contents of more than five hundred bottles. In this class were fewer beer drinkers. Their daily average, however, was from ten to fifteen glasses.

The importance of taking into consideration the degree of alcoholism when compiling mortality figures for pneumonia, has previously been recognized. Thus Smith (5), in 1899, found that fifty-seven cases of pneumonia which he described as "markedly alcoholic" had a mortality of seventy per cent., while 161 described as moderately alcoholic showed a death rate of only thirty-two per cent.

Of the 200 cases collected by me, 121 were "free" and seventy-nine were "excessive" drinkers. Of the 121 free drinkers, twenty-two died, a mortality of 18.1 per cent. Of the seventy-nine excessive drinkers, fifty-two died, a mortality of 65.8 per cent.

The mortality figures for the two classes are thus far apart; that of the first, in fact, approximates the general hospital figure for lobar pneumonia³ while the figure for the second is considerably higher than that which is usually quoted for alcoholic pneumonia. Smith's figure for the "mark-

edly alcoholic," it will be noted, corresponds very closely with my mortality figure for excessive drinkers, while his figure for the "moderately alcoholic" is somewhat higher than the death rate given by me for free drinkers.

Of the seventy-nine excessive drinkers in my series, already mentioned, the ages in four were uncertain. In sixteen cases between the ages of twenty-one and thirty years there were ten deaths, a mortality of 61.8 per cent. In twenty-nine cases between the ages of thirty-one and forty there were eighteen deaths, a mortality of sixty-two per cent. In seventeen cases between the ages of forty-one and fifty there were eight deaths, a mortality of forty-seven per cent. Between the ages of fifty-one and sixty years there were eight cases all of which ended fatally. Between the ages of sixty-one and eighty years there were four cases, all fatal.

An analysis of the foregoing figures leads to some very interesting conclusions. Most striking of these is the evidence presented that youth does not make for a low death rate when the subject is excessively alcoholic. The mortality, 61.8 per cent., for young men from twenty-one to thirty years of age is staggering when contrasted with Frankel and Reich's figures⁴ for nonalcoholic pneumonia at the same age period. Our figures seem to indicate that the inebriate of twenty-five years has no better chance of recovery than the toper of middle age.

The results for elderly men are hardly less interesting, showing, as they do, a 100 per cent. mortality for those whose age exceeded fifty years. A larger series would perhaps show some survivals in this class, but the figures given here undoubtedly warrant an extremely unfavorable prognosis. It is interesting to note that among fifteen free drinkers of similar age, in our series, only five died. This is, of course, an unusually low figure.

The inference to be drawn from this study is that chronic alcoholism does not of itself alter the mortality figures for lobar pneumonia unless present in extreme degree. Chronic alcoholism sufficient to produce delirium tremens may oftentimes exist without affecting a patient's chances of recovery. In fact, in our series of free drinkers, there was hardly an individual who had not more or less of the characteristic cerebral excitation, yet this complication alone did not seem to influence the death rate.

It thus appears that signs of fairly well marked chronic alcoholism do not in themselves justify a gloomy prognosis. In any given case an attempt should first be made to determine whether or not the patient is a confirmed drunkard. In all others the alcoholic factor need not be too seriously regarded.

The generally quoted mortality figures for pneumonia in alcoholics (forty to fifty per cent.) are accurate in a sense as they are drawn from the general run of cases included under the heading of chronic alcoholism. They are, however, misleading, since they do not recognize the very important

²The diffuse lobular pneumonia due to assonation that frequently arises during an attack of delirium tremens may be mistaken for lobar pneumonia. Care has been taken to exclude this type of case from the present article.

³Smith (*Twentieth Century Practice*, xvi, pp. 70, 71, 1899) gives a mortality in lobar pneumonia of 28.8 per cent. for males, and 31.2 per cent. for females (223 Presbyterian Hospital cases). McRae (J. C. Fische, and W. E. Ainley, Report of 486 Cases from Montreal General Hospital, *American Medicine*, vii, 4, 135-138, 1904) reports a mortality of less than twenty per cent. in males and more than twenty-five per cent. in females. Oslet (*Practice of Medicine*, 131, 1901) quotes various hospital statistics showing a variation of between twenty and forty per cent.

⁴Statistics accumulated by Frankel and Reich (Maragliano, *Gazzetta degli ospedali*, xix, 1898) show a mortality of 8.70 per cent. for the period between twenty-one and thirty years, of 24.70 per cent. for the period between thirty-one and forty years, and of 39.30 per cent. for the period between forty-one and fifty years.

distinction to which attention has been directed in this article.

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A PUSTULAR SYPHILODERM IN A NEGRESS SIMULATING VARIOLA.

By J. L. KIRBY-SMITH, M. D.,
Jacksonville, Fla.

In the secondary manifestations of syphilis, the pustular syphilide does not occur very frequently, or at least this form is not seen as often as the other cutaneous symptoms of the disease, due,

doubt to the fact that as a rule the infection is recognized early, and proper treatment instituted. When occurring, this form of syphiloderm on a superficial examination may closely resemble dermatitis medicamentosa (pathiodides), pustular acne, or variola, especially so when there is an absence of, or an obscurity of the usual accompanying symptoms of syphilis, and no definite history of an initial lesion. In the occurrence of a pustular eruption in the presence of an



FIG. 1.—Pustular syphiloderm in a negress simulating variola.

epidemic of variola, special care and observation may at times be necessary before making a positive diagnosis. The following history of a case of a pustular syphiloderm in a negress is illustrative; in this particular case the lesions were of the large, acuminate, pustular type which occasionally simulates variola.

CASE. Jeanette J., unmarried, light colored negress, aged twenty years, referred by Dr. A. R. Parrott, of Jacksonville, Florida, for diagnosis and treatment.

At this time variola was prevalent, and, as there were quite a number of cases being reported to the local board of health, occurring mostly among the colored race, compulsory vaccination had been instituted. The patient in this report was first seen by the physician of the family in which she was employed, when he was about to perform vaccination, and it was at this time that he noticed the skin disease. Owing to the history of the eruption, and the distribution of the lesions, he would not make a diagnosis, though at the time the character of the eruption was very similar to that of variola. When first seen by me, May 20, 1912, the eruption was of three weeks' duration. It was of the large, acuminate, pustular type, though some lesions were in all stages of development, from the small papular to the foregoing. The distribution of the lesions was at once noticeable; there was an absence of lesions from the dorsal surfaces of the hands, there were only a

few scattered lesions on the face and forehead, also the upper part of the body, while the extremities were greatly involved, as is well seen in the accompanying photograph. This shows also the multiform character of the eruption, lesions in various stages of development, from that of the papular to that of the large pustular, some drying, others with the crust separated, and the pigmented scars. Lesions were also in the palms of the hand and in the soles of the feet, and a few in the scalp.

By a general examination of the patient, other positive symptoms of syphilis were found; there was a general adenopathy, mucous patches in the mouth, the pharynx was congested, although the patient did not complain of this. In fact, at this time the only subjective symptoms were slight headache and some bone pains at night. She stated that she had not been inconvenienced by her illness, other than by a slight itching from the skin disease. She denied any venereal infection, and examination of the genitals did not reveal a chancre, although there was a considerable leucorrhoeal discharge from the vagina. It was ascertained that no medicine of any description had been taken for several weeks before the eruption first appeared, and no topical application had been made of any drugs or chemicals. A serological examination made at this time was strongly positive. Further to strengthen the diagnosis, a bilateral iritis developed subsequently to the serological report.

Under antisyphilitic treatment the iritis and the cutaneous lesions promptly disappeared. An intravenous injection of 0.6 gramme of salvarsan was given, followed by mercury protiodide, grain one quarter, three times a day.

25 WEST CHURCH STREET.

Therapeutical Notes.

Treatment of Morphinomania.—W. K. Anderson, in the *Practitioner* for June, 1912, reports a case of morphine habit in which the administration of hyoscine to the point of producing delirium made it possible to remove permanently the craving for morphine in a period of four days. The daily amount of morphine having already been reduced in the course of several weeks from six or ten grains to 1.33 grain, and the craving demanding immediate relief, the first dose of hyoscine hydrobromide, 1/100 grain, was given hypodermically. Altogether the patient received 47/200 grain of hyoscine, in approximately hourly doses, in a period of sixty-four hours. After the first ten doses the craving still asserted itself, but with a few more injections the patient came well under the influence of the hyoscine, a wild delirium supervening. The pulse on several occasions became slightly irregular and weak, but upon administration of strychnine there was immediate response. A course of injections of pilocarpine was finally given. Chloral hydrate and sodium bromide were used in certain periods of restlessness and sleeplessness which had become habitual during the prolonged use of morphine. On the morning of the fourth day after the beginning of treatment, the patient voluntarily surrendered his hypodermic syringe. No further craving for the drug was felt thereafter.

Treatment of Heat Stroke.—Chastaing, in *Quinzaine thérapeutique* for July 25, 1912, is credited with the statement that the method of treating heat stroke commonly advised, viz., by cold baths and rubbing of the body with ice, often proves but of slight value. After an extensive ex-

perience in treating heat stroke among the crews of vessels sailing in warm latitudes, including those cases encountered among stokers, he believes that the chief aim in the treatment should be to re-awaken activity of the respiratory and circulatory centres, and recommends for this purpose baths at a temperature of 38° C., raised gradually, if necessary, to 40° or 42° C. Cold water is simultaneously applied to the head and vigorous rubbing and flagellation practised over the precordial region. The warmth of the bath at once excites reflex action, acting on the respiratory centres in particular, and lowers the temperature in the interior of the body by bringing blood to the periphery. When the patient has partially regained consciousness and the respiration is more regular, the subject is transferred from the bath to his bed, where he is left without covering. A copious perspiration then almost always sets in, and the patient is fanned by the attendants. He often falls into a quiet sleep, but should be kept under watch, in order that if the pulse and respiration again become irregular, the treatment may be renewed. In all cases thus treated the period of danger from heat stroke was quickly passed over; none of the patients relapsed or showed any evidences of lung congestion. Injections of ether or caffeine were found useful to sustain the stimulation previously obtained with the baths.

A Diuretic Mixture.—Huchard, in *Paris médical* for May 4, 1912, is credited with the following preparation, to be used for diuretic purposes:

℞ Pilocarpinæ nitratis, 0.005 gramme;
Scilla,
Resinæ jalapæ, ... } ana 0.05 gramme.
Resinæ podophylli, ... }
M. ft. in pilulam No. i. Da tales No. xl. Sig.: Take four to six pills daily for four to six days, as directed by physician.

Treatment of Acute Anterior Poliomyelitis.—Paul McIlhenny, in the *Boston Medical and Surgical Journal* for July 18, 1912, states that he has procured most satisfactory results in five cases of poliomyelitis by the induction of active hyperemia of the spinal region early in the disease. His procedure is as follows: The alimentary canal is thoroughly cleansed, the limb or limbs kept warm by light cotton bandaging, and a stimulating liquid diet given together with strychnine in small doses. Cups are applied intermittently to both sides of the spine, and directly over the posterior processes from the sacrum to the cervical region, for one hour daily, and this is continued regularly until muscular soreness has disappeared and voluntary motion in the affected muscles begins to return. The bandages are then removed, massage begun, gradual return to a general diet allowed, and the cupping continued. Where it is possible to begin the treatment a day or two after the initial attack, one may look for a diminution of the muscular soreness about the fourth day, and a slight return of voluntary motion about the tenth or twelfth day, according to the extent of the inflammation when treatment was begun and the amount of hyperemia the patient can bear. Improvement will be more rapid as the patient becomes accustomed to the treatment, which should be continued until the

muscles have regained their tone. The author believes that where the treatment is applied before the fourth day it will, in many cases, prevent the occurrence of paralysis.

Treatment of Minor Injuries and Superficial Foci of Suppuration.—Bruno, in *Quinzaine thérapeutique* for July 25, 1912, is credited with the statement that the application of a tincture of green soap to minor inflammatory lesions or ordinary small wounds, will result in more rapid healing than is obtained by the use of the antiseptics customarily employed. The formula used by him is:

℞ Alcohol, 200 grammes;
Soft soap, 100 grammes.
M. ft. tinctura. The solution is kept on a water bath at 60° C. for twenty-four hours, then filtered.

In using the preparation, a quantity of gauze of suitable size and two or three mm. in thickness, is moistened with it and applied directly to the involved area. Further coverings of thin adhesive material, cotton, and a bandage, are superposed. The dressing is not to be removed for twenty-four hours. In over one hundred cases in which this procedure was employed in naval practice, including furuncles, discharging abscesses, small infected wounds, and glandular inflammations, the results were always gratifying.

Treatment of Dermic Ulcers.—B. F. Ochs, in the *American Journal of Dermatology* for July, 1912, advises that leg ulcers be packed as tightly as possible with zinc oxide powder. Over this should be placed a gauze pad about one sixth of an inch thick and a gauze bandage. The whole is to be kept wet continuously with a saturated solution of boric acid. Every other day the dressing should be renewed; the zinc powder is, however, not to be disturbed, and more added only where it has fallen out or settled down in the ulcer. The bandage need not be applied tightly. The powder causes slight temporary pain, owing to pressure on the ulcer, but healing takes place more promptly than with any other treatment the author has tried. After complete cicatrization the use of a rubber stocking is to be advised.

Treatment of Paroxysmal Tachycardia.—Emil Kraus, in *Prager medizinische Wochenschrift* for June 27, 1912, reports a case of paroxysmal tachycardia of many years' standing, finally progressing to marked dilatation of the organ, with low blood pressure and pronounced dyspnea, in which an intravenous injection of one milligramme of amorphous strophanthin, given as a last resort after other remedies had lost their efficiency, resulted within two hours in a complete transformation of the patient's condition. The size of the heart was quickly reduced from that denoting extreme dilatation to the normal, the rate of its beat brought down to seventy-four, and dyspnea and cyanosis so severe as to suggest a fatal termination of the case were entirely relieved.

Treatment of Impetigo of the Nostrils.—H. Bourgeois, in *Progrès médical* for June 29, 1912, states that the local treatment of this condition must have several objects in view; viz., cure of the chronic rhinitis usually associated, removal of the

crusts, and healing of ulcerations. Where the lumen of the nostrils is greatly narrowed, the crusts must first be attended to. Absorbent cotton moistened with boiled boric acid or sodium bicarbonate solution should be inserted into the nostrils three or four times daily and allowed to remain half an hour. Later, a solution constituted as follows should be similarly used:

R Zinc sulphate,1.0 gramme;
Copper sulphate,3.5 grammes;
Camphor water,100 grammes;
Boiled water,200 grammes.
M. ft. solutio.

In the intervals the skin involved should be freely covered with the following ointment.

R Yellow oxide of mercury,1 gramme;
Hydrated wool fat,5 grammes;
Petrolatum,15 grammes.
M. ft. unguentum.

Or, if the skin is very easily irritated, with

R Zinc oxide,1 gramme;
Petrolatum,10 grammes.
M. ft. unguentum.

After a few days recurring fissures at the commissures will alone be present. These may be touched with silver nitrate, either in twenty per cent. solution, or in the form of a pearl fused on the extremity of an applicator.

The rhinitis should be treated, as soon as the crusts have been removed, by sprays of boric acid or some alkaline solution, followed by the application of some antiseptic ointment, balsam of Peru, sulphur, etc. In particularly obstinate cases silver salts are to be used.

General treatment consists in overcoming morbid intestinal fermentation, if present, administering codliver oil and iodide of iron, and improving the general hygienic conditions.

Crude Coal Tar in the Treatment of Skin Affections.—Ernst Müller, in *Deutsche medizinische Wochenschrift* for June 6, 1912, relates his experiences with crude coal tar in the Breslau skin clinic. The tar was painted in a fairly thin layer on various sorts of lesions, allowed to dry, and covered with a muslin bandage. When well borne the application was repeated in twenty-four hours, and again two or three days later, according to indications. Removal of the tar, when desired, was effected by means of a dressing of zinc paste or ichthyol zinc paste.

In chronic eczema Müller obtained results which lead him to class crude tar as indispensable in the treatment of this affection. Itching was relieved, the lesions were rendered dry and anemic, infiltration was reduced, and the growth of epithelium favored. He warns, however, against beginning the use of tar too early in the disease. Good results were likewise obtained in dermatitis lichenoides pruriens, and in true or Hebra's prurigo, though in psoriasis the remedy proved ineffective.

Treatment of Phosphaturia.—Umber, in *Therapie der Gegenwart* for March, 1912, calls attention to the fact that most patients suffering from phosphaturia complain of excessive acidity in the stomach. The withdrawal of so much acid from the general metabolism through the hyperchlorhydria tends to favor the precipitation of phosphates in the

urine, and the danger of the formation of phosphatic concretions consequently arises. With these facts as a working basis, Umber has administered atropine to phosphaturic patients, with good results. The initial dose was 0.005 gramme; this was increased to 0.003 per diem (0.001 after each meal), and the treatment continued for three or four weeks. The urinary acidity rose considerably under the influence of these doses, even in normal individuals. It is also recommended by the author that the intake of calcium be reduced as much as possible in phosphaturia.

Treatment of Scarlet Fever.—Mills Sturtevant, in *Journal of the American Medical Association* for August 24, 1912, states that for the relief of discomfort during the rash, the skin may be anointed with cacao butter or cold cream; for excessive itching, however, nothing is so effective as gentle sponging with liquor cresolis compositus in 0.5 per cent. dilution. Itching of the scalp during the first three weeks is to be treated and prevented by washing with alcohol and rubbing in a small amount of white petrolatum; later, the hair and scalp should be washed with tar soap, then with the following lotion:

R Hydrargyri chloridi corrosivi,0.5 gramme;
Acidi borici,20 grammes;
Glycerini,30 c. c.;
Alcoholis,120 c. c.;
Aque,q. s. ad 125 c. c.

M. ft. lotio.

The hair and scalp are then dried well and a hair tonic containing quinine and castor oil is rubbed in.

The care of the throat consists essentially of maintaining cleanliness, which is best accomplished by irrigations of a four per cent. solution of sodium bicarbonate, of lime water, or of normal saline. The irrigations should be given at a temperature of 110° F. with a fountain syringe, the bag of which is held about one foot above the patient's head. The solution is allowed to run over first one, then the other tonsil.

The nose should never be irrigated unless both middle ears are involved. The secretions are best kept fluid for ready evacuation, by placing in each nostril white petrolatum, previously rendered more liquid by putting the tube in hot water. For congestion and swelling of the nasal mucous membrane spraying with one per cent. of eucalyptol and menthol in liquid petrolatum or, if required, swabbing with epinephrine chloride or an inhalant containing it, are useful.

Enlargement of the cervical lymph nodes is to be treated by application of an ice bag to the throat during the first week of the disease, though occasionally a patient will do better with hot poultices. For cases refractory to hot or cold applications, large wet dressings of the following mixture, kept on the enlarged nodes continuously, may be used:

R Plumbi acetatis, ...
Aluminis pulveris,ana 60 grammes;
Alcoholis,250 c. c.;
Glycerini,120 c. c.;
Aque,1,000 c. c.

M. Sig.: "Shake well."

These dressings are most efficacious at the temperature of melting ice.

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CHARLES E. DE M. SAJOUS, M. D., LL. D.,
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THE CLINICAL CONGRESS.

The clinical congresses of surgeons have proved to be an admirable idea admirably carried out; nothing is more valuable to the surgeon than this annual stirring up of his ideas, this opportunity to see the work of others, and to admire silently or to criticise, both admiration and criticism being equally welcomed by men who assume no more than to be their fellows.

Successful as the former congresses have been, there can be no doubt, we think, that that which begins next week will possess numerous unique features unobtainable elsewhere in the United States. Few visitors to New York ever get the idea of its vastness and immensity of resource that will be impressed upon our visiting colleagues, for most of our callers confine their attention to the comparatively small island of Manhattan, forgetting the bustling Bronx, picturesque Richmond, and the truly vast borough of Brooklyn, which in itself might constitute the fourth city of the land. Fortunately indeed are those of our colleagues who may be guests of Brooklyn hosts, for they alone will get an idea of the real New York, its enormous distances, its unique charities; they alone will see many of its finest public buildings, a magnificent park unknown to millions of its own inhabitants, treasures

of art almost equally unknown, and make some acquaintance with two thousand of their colleagues working in a comparative obscurity that is entirely of their own desire, drawing indeed upon immense Long Island for a clientele, but permitting to remain almost unknown to the West some of the boldest and most progressive surgical work of the day. We hope our visitors will make a point of spending one day at least away from the heavily advertised palace hospitals of Manhattan to visit the equally wonderful if less widely known clinics of Brooklyn and the Bronx.

In nicety of technique and perfection of method our friends will obviously see nothing unfamiliar. It is the scale upon which things are done in New York that should impress; where a laparotomy or other capital operation in a smaller centre is the cause of a mild sensation, in many of our larger hospitals veritable processions of patients may be seen passing through the theatres, and, if a surgeon knows where to go he may find at the proper hour almost any operation known to surgery under way at some hospital within our limits.

Nearly two thousand surgeons, we understand, registered in advance, a fact that promises an attendance far in excess of either of the previous meetings. New York can engulf twice the number mentioned without a ripple. Unless, perhaps, for their look of unusual intelligence, the visitors will pass to and fro unobserved among our quarter million of other visitors. They will be warmly welcomed, however, by our surgeons who will show them that New York has comfortable and hospitable homes and kindly and agreeable citizens.

A glance at the clinical programme on page 971 of this issue of the JOURNAL will show that forty-six hospitals are ready to entertain and instruct the visitors; a feast awaits them that will probably not be duplicated until they decide to visit New York again. All the partitions, real and imaginary, between our various schools are down and a resulting amphitheatre is ready, the like of which one must travel far to find.

SURGICAL MASSAGE OF THE HEART.

Massage of the heart is increasingly asserting itself as a valuable procedure, even where in the course of extensive surgical operations the factor of shock is added to those of respiratory and cardiac failure incident upon the use of an anesthetic. This applies, however, only to abdominal heart massage, the thoracic method having proved less efficient; it applies also to massage with the diaphragm interposed between the fingers and the

heart and not to cases in which an incision through the diaphragm has been practised to insure a firmer grasp of the organ. The subdiaphragmatic method gives its best results, moreover, when aided by artificial respiration, the patient being in the Trendelenburg position. Associated measures of great value are the endotracheal insufflation of Meltzer, the intravenous or endoarterial injection of adrenalin or possibly parahydrocyptrenylethylamine or the injection of barium chloride into the heart muscle. The likelihood of resuscitation depends obviously upon the time elapsed between cessation of the heart beat and the massage, but a remarkable case, reported by W. Wayne Babcock at the meeting of the American Therapeutic Society, has greatly lengthened this period, the patient having been recalled to life by repeated efforts at subdiaphragmatic cardiac massage aided by the intravenous use of saline solution and forced artificial respiration through a tracheal opening, *twenty-five minutes* after the heart had ceased to beat. Spontaneous respiration was not resumed, however, for thirty-five minutes, or ten minutes after the heart itself had started. That cardiac arrest had actually occurred was clearly shown by the fact that the hand, repeatedly introduced through the incision to the abdominal aorta, found the latter to be pulseless and the heart without contraction, the operation being an abdominal one. Although the patient lived but two days, her death was due to a complication, pulmonary edema.

A new method of cardiac massage is also suggested by the same surgeon. Massage through the thoracic wall, as usually practised, being time consuming and requiring the turning back of a flap of the chest, while exposing the patient to the danger of pneumothorax, Babcock, to avoid this danger, has suggested a simple method of cardiac massage, using a single finger, introduced through a stab wound, to the left of the heart. The puncture is made one inch to the left of the sternum in the fourth interspace; the finger is then instantly pushed through the intercostal space and hooked around the left edge of the heart which is intermittently compressed against the overlying sternum. This procedure has brought about resuscitation in three cases.

THE SIGNIFICANCE OF CHEMICAL EXAMINATIONS OF THE URINE.

If you should ask a man what was the color of a house, and he should answer, "It is all right; there is nothing the matter with it"; and you asked him again what was the color of the house, and he

said, "There is no leak in the roof, and the plumbing is all right"; you would get just about the same amount of information about the color of this house as the student of cardiovascular disease gets from the reports brought to him by patients of the results of uranalyses made by most observers who have not paid particular attention to cardiovascular disease.

The chemical observation of the urine in cardiovascular disease should reveal the nature of the chemistry of the body, and not simply whether the kidney or the amount of nitrogenous excretion is right or wrong. From our persistent questioning as to the color of the house, we do not want to know whether it is a good or a bad house, or whether the roof leaks; we want to know the color.

Most patients come with the story that they have been examined and that their uranalysis is "all right." As a matter of fact, very few people past middle life can be said to have kidneys that are all right, yet, fortunately, very few kidneys are all wrong. Uranalysis solely for the detection of kidney disease is a very crude conception and should have been banished from internal medicine a decade ago. We all know of the almost universal presence of casts in small number, and of a faint trace of albumin under conditions of strain or dietary errors; that the excretion of nitrogen is more dependent upon the intake than any other cause; and that the nitrogen retained in the body from food is very small in amount and also obscure as to destination and function.

There is a great future for biochemistry, and analysis of the urine will play no small part therein. Undue emphasis has been laid in the past upon microscopical findings, and not enough work has been done on the chemical end. A single examination gives a flashlight picture which, while of extreme value, cannot be compared with the moving picture of repeated and continuous examination. The chemistry of the blood serum and that of the urine have a close relationship which, when understood, will help immensely in the study of dietetics.

We have long since outgrown the conception of Bright's disease as a condition localized in the kidneys, and the liver is beginning to be understood as the possible culprit in the various diseases for which the kidneys have so long been blamed. If some of the research money that is so lavishly spent on bacteriology and infectious disease can be turned to the elucidation of problems of biochemistry—problems that are so obscure that their very existence is hardly known—much could be done. The cry, "Save the babies," appeals to the people, but the cry will be heard by and by, "Save the man between sixty and seventy." Saving young people

is a problem of infection and bacteriology; saving older and useful workers in the world is a problem of biochemistry. Many good men die in the late fifties and early sixties because of the unrecognized chemical errors of the body. When the significance of chemical examination of the urine is appreciated, and it is applied to apparently healthy individuals in time, as much will be accomplished in saving life during the last natural decade of life as has been done during the first decade.

TRAUMATIC ABSCESS OF THE LIVER.

Suppurative processes arising in the liver are generally supposed to result from some intestinal infection, such as typhoid, appendicular inflammation, or dysentery. To these should be added abscesses having a septicemic or angiocholitic origin, which are less frequent. Braquehaie once described (*Tunésie médicale*, February 15, 1911) suppurative hepatic processes occurring after traumatism in healthy subjects, the injury probably favoring the local development of pathogenic bacteria coming from the intestine.

Traumatic abscess of the liver is not uncommon, numerous cases being found in the literature. Morehead, however, is of the opinion that traumatic abscess of the liver is rare, because he found only four instances out of a total of 318 hepatic suppurations. Out of thirty cases of abscess of the liver operated in by Braquehaie, only three were traumatic in origin. Nevertheless, it appears that abscess of the liver due to trauma is not quite so exceptional, since Edler reports twenty-three cases of suppuration out of a total of 203 instances of contusion of the hepatic gland. Moncorno and Oddo state that it is particularly common in children.

These traumatic abscesses are always superficial and seated at the point of injury. Their cavity is always regular and smooth, facts which are important to know because they explain the rapid recovery after incision. The symptoms are distinctly inflammatory, the patient never presenting that cachectic look indicating serious systemic involvement, so often encountered in dysentery. One is dealing with a decidedly local and superficial process, with early and manifest signs of suppurative. The evolution is more frequently acute, but may be latent, resembling, in this respect, a tuberculous collection.

The prognosis in traumatic abscess of the liver is also quite unlike that in dysenteric abscess. If the primary contusion is not serious and has not caused rupture of the liver, the prognosis is good. The general health not being depressed by any disease, one is dealing with a healthy subject having all his

resistance. Consequently, after incision of the abscess, the wound rapidly cicatrizes and there is no recurrence because the walls are composed of healthy tissue.

THE SPECIFICITY OF BACTERIAL VACCINES.

In the therapeutics of immunity a *sine qua non* is the strict specificity of the therapeutic agent, whether this agent be a serum or a vaccine. In fact, there is reason to believe that this specificity sometimes restricts the action to groups within groups, so that specific bodies may be produced against different strains of the same species. All this is so well known that comment upon the subject appears to be superfluous. That the practical application of this knowledge is not clearly understood, however, by at least some of the manufacturers of remedies of this character, is proved by the advice which is sent to physicians as to the use of some of the bacterial vaccines.

For instance, we observe that the practitioner is advised to administer gonococcus vaccine in gonorrheal rheumatism, but to shift to streptococcus vaccine if the first treatment is not efficacious, otherwise treating the case as one of ordinary rheumatism. There is no suggestion that the first step in the use of the vaccines be a careful determination of the nature of the infection. The same flatly empirical method is followed in recommending the use of mixed vaccines in the treatment of inflammatory conditions of the pelvic organs and the abdominal viscera, also in the treatment of chronic rheumatism and arthritis deformans. Such advice as this places the treatment of bacterial vaccines on the same plane as the old fashioned shot gun prescription, with all the difference in favor of the latter, for whether or not these prescriptions were helpful they were at least harmless, which cannot be said of subcutaneous injections of mixed bacterial vaccines.

The great value of the bacterial vaccines has been firmly established, but they should be used only after the nature of the infecting organism has been determined; clinical reports based upon their use where the infected organism has not been identified, are absolutely valueless, not to say misleading, as a guide to the practitioner.

STRANGULATED HERNIA IN INFANTS.

Rushton Parker, of Liverpool, in a letter to the *British Medical Journal* for October 26, 1912, draws attention to the fact that many textbooks make no mention of strangulated hernia in infants, one exception being the *Traité de chirurgie* of Duplay and

Reclus. Parker cites one case of his own in which operation was interesting because the parts involved were "no larger than those of a tomcat." It is important to remember that the condition is not very uncommon in infants and it should always be thought of when a child is obviously in great pain.

MALARIA FOLLOWING SURGICAL TRAUMA.

As reported in *Presse médicale* for October 23, 1912, Sabadini, of Algiers, discussed before the twenty-fifth congress of the Association française de chirurgie, held in Paris, October 4th to 12th, the occurrence of malarial paroxysms, controlled however by quinine, after the operation of splenectomy. It was Verneuil who first drew attention to this phenomenon which was now fully confirmed. Out of thirteen patients operated upon, four suffered from subsequent fever; there was but one death, that of a patient in whom peritonitis had occurred from a torsion of the pedicle existing before operation. Sabadini added that he considered splenectomy preferable from every point of view to exosplenopexy.

SURGEONS WANTED IN THE BALKANS.

The *Lancet*, in its issue for October 26, 1912, calls editorial attention to the value of the training in surgery to be obtained during the present war in Turkey and the Balkans; moreover, it is officially reported that heavy casualties with which the existing military medical services are inadequate to cope have already occurred. Those who desire to offer their services may communicate at once with the secretary of the British Red Cross Society, 9 Victoria Street, S. W., London, England. We should imagine, from all accounts, that this war offers experiences likely to be unique for a long time to come, owing to the extraordinary amount of hand to hand fighting which seems to have characterized the engagements.

THE TRANSFUSION OF BLOOD.

The reasons for failure in the transfusion of blood, which has always seemed *a priori* to be so ideal a procedure, have probably never been thoroughly understood. The communication in this issue of Dr. A. L. Soresi will therefore be read with interest; attention to the precautions emphasized by the writer would apparently make transfusion a safe and trustworthy procedure and save many a life that might otherwise be forfeited.

Obituary.

ROBERT MAITLAND O'REILLY, M. D.,
of Washington, D. C.

Doctor O'Reilly, surgeon general of the United States army from 1902 to 1909, died at Washington, Sunday, November 3d, of Bright's disease. He was born in Philadelphia, January 14, 1845, received

his academic and medical training at the University of Pennsylvania, leaving during his studies to act as a medical cadet in the Civil War, and in 1867 joined the army as an assistant surgeon, whence he eventually rose to the rank unique for a medical officer, of Major General. Doctor O'Reilly saw heavy service during the Indian wars, was chief surgeon of the fourth army corps during the Spanish war, and a member of the evacuation commission at Havana thereafter. In 1877 he was with the regular troops at the strikes around Baltimore, Pittsburgh, and other railroad centres. Later he had much to do with the introduction of compulsory antityphoid inoculation into the army. He is survived by a widow and an only daughter.

Medical Law.

VIII. CIVIL MALPRACTICE.

In the case of Donoghue vs. Shaw, 136 Northwestern Reports 367, a Michigan jury gave the plaintiff a verdict of \$300 for injuries sustained by her as a result of professional services rendered to her by defendant, a dentist. The defendant, after administering an anesthetic, extracted twenty-two or twenty-four teeth; when the patient recovered consciousness she found that she could not close her mouth. The defendant stated that her condition was natural after having so many teeth pulled, as a result of the contraction of the muscles of the jaw; but that in a few hours after the effects of the chloroform wore off, the jaw would close. The plaintiff testified that she suffered intensely; that being unable to close her mouth, she went to the dentist again, eight days later; that he examined the jaw and said that it was not "out"; he advised her to rub her face with liniment several times a day, as that might relax the muscles; he also advised her to try to relax the muscles by chewing gum; that he could not do anything about taking an impression until the mouth closed, and that there was no necessity for her coming to see him again until it closed. She further testified that she continued to suffer greatly and that about two and a half months after the extraction of the teeth she again called upon the defendant; that he called in another doctor who at once said the jaw was dislocated, that it was a "forward dislocation"; plaintiff then went to a hospital and had the dislocation reduced by manipulation. The physician who reduced the dislocation testified:

That he immediately detected that the jaw was dislocated, upon seeing her; that she had her mouth open, and lips apart. Upon cross-examination he testified: That dislocation of the jaw was not frequent, but that it did sometimes occur in extracting teeth. That he would not say, from his experience with reference to the dislocation of the lower jaw, that it would be an indication of improper treatment on the part of a dentist, that is, not necessarily. If upward of twenty-two teeth were extracted at this one sitting, it might be difficult to detect readily the fact that the jaw was dislocated; that the jaw might be dislocated after the extraction of that many teeth, and still it might not be perceptible to a lay person. It might be that immediately after such an operation, as the extracting of teeth, a doctor could not detect a dislocation of the jaw. That the fact that she was under chloroform at the time

the teeth were extracted, and that the muscles of the jaw were, consequently, relaxed, would make the tendency greater for the jaw to become dislocated. That he diagnosed dislocation just as soon as he saw the plaintiff, without putting his hand on her to find the dislocation.

The defendant and his wife both testified that defendant did not examine plaintiff eight days after the teeth were extracted, as testified by plaintiff, or in fact that any examination took place until April 2nd, when the dislocation was discovered; that plaintiff did not call for an examination until April 2nd, although defendant told her to come in from time to time so he could look at her mouth.

A number of experts testified for the defendant with the result that the question left to be determined by the court was whether or not defendant had been guilty of negligence in failing to discover and reduce the dislocation. This question the trial judge submitted to the jury with the following instructions:

Now gentlemen, in this case I think I should say to you, the mere fact, alone, that this woman's jaw was dislocated—if you find it was dislocated during the pulling of those teeth—does not alone raise any question of negligence on behalf of this doctor, for you will recall, from the undisputed testimony of experts here produced, that it is not an unusual occurrence. But, gentlemen of the jury, I think I should say the same thing, possibly with a little modification, as to the failure of this physician to afterward discover that this jaw was dislocated. Possibly there are some cases where that failure to discover a dislocation would be pardonable and justifiable; other cases in which it would not. I think that question is peculiarly for you, gentlemen, to determine. I think, after all, that that is the one and only inquiry in this case. If there has been any negligence on the part of this physician, as I have outlined my idea of negligence, it is in the failure to have discovered this condition, if he brought it about in the first place, and that, gentlemen, will be your inquiry, and upon that, gentlemen, will depend your verdict. If you find, therefore, gentlemen, that this man did cause this dislocation, and that he was negligent, as I have outlined to you, in failing to discover this dislocation, and therefore a condition resulted which has been detailed to you, then he is liable, and you will pass to a consideration of the question of what amount of money will compensate this plaintiff for the damage which she sustained.

Upon this instruction the verdict rendered for plaintiff assessed her damages at \$300.

In reviewing the action of the jury, Mr. Justice Stone, of the Supreme Court, said:

If the jury believed the testimony of the plaintiff that defendant made an examination of her mouth on the eighth day after the teeth were extracted, we think that it was a fair question for the jury whether the defendant was not negligent in failing to discover the dislocation at that time. That question appears to have been fairly and clearly submitted to the jury in the language above quoted.

X. THE PHYSICIAN AS WITNESS.

In the case of *Moran vs. Dake Drug Co.*, 134 N. Y. Supp. 996, the plaintiff testified that he had asked a clerk in the drug store of the defendant for triple bromide tablets, the clerk testified that he had asked for bichloride of mercury tablets and that he accordingly gave him that kind of tablets. Plaintiff took one of the tablets and by the timely aid of a stomach pump succeeded in surviving, although he suffered serious injuries.

The jury apparently believed the testimony of the plaintiff for they gave him a verdict of \$3,000.

The defendant appealed, and among other things

assigned as error the permitting of the testimony given by the plaintiff's expert witnesses as to the permanency of the injuries to stand. Mr. Justice Clark disposed of this question with the following words:

Assuming that plaintiff's theory was the correct one, and that he was free from negligence, and that defendant was negligent as the jury found, plaintiff having unquestionably been made ill by taking the poisonous tablet which had been delivered to him by defendant's clerk, there must be some way whereby a party thus injured can establish his damages, and I do not know of any other way to do it in a case of this character than by permitting medical experts to give their opinion as to future effects of such poison, when such testimony is based upon facts which have been established in the case.

The hypothetical question asked of the medical experts on behalf of plaintiff seems to have been prepared with much care, and covered substantially all matters which had been testified to during the trial, and I think no substantial right of defendant's was violated when these witnesses were permitted to answer that question. The fact that plaintiff's stomach had been injured by taking the bichloride tablet had been sufficiently established, and, that being so, it seems that it was quite proper to receive evidence as to the effect and probable duration of the injuries.

The fact that the witnesses said that the ulcer formed in plaintiff's stomach was "apt" to reopen, and that the scar was "liable" or "likely" at any time to become an open sore, instead of stating that such condition was "probable," I regard as of no importance whatever. Courts have been much criticised because of a seemingly too zealous effort to observe technical rules instead of getting at the real merits and justice of a controversy, and this seems to be a good case in which to adopt the theory that it makes no real difference whether the witnesses said that the plaintiff's ulcer was "likely" to reopen, or was "apt" to reopen, or that it "probably" would reopen. It is not wise that in our zeal to stand up for technical rules we carry it so far as to go over backward, and deny justice to parties seeking to recover for wrongs claimed to have been suffered, and in permitting the testimony of plaintiff's medical experts to stand after they had answered a carefully prepared hypothetical question, no serious error was committed.

XI. PRIVILEGED COMMUNICATIONS.

In the case of *Weil vs. Weil*, reported in 136 N. Y. Supplement, 190, the Special Term of the Supreme Court, in New York county had dismissed an uncontested action for the annulment of a marriage. The Appellate Division reviewed the action of the Special Term and affirmed the order dismissing the suit, basing its conclusion upon the fact that the only evidence of the infirmity of the defendant was the testimony of a physician, which was privileged and should not have been received, even though defendant was not present to object. Mr. Justice Scott speaking for the court said:

Section 834 of the Code of Civil Procedure provides that a physician "shall not be allowed to disclose any information which he acquired in attending a patient in a professional capacity, and which was necessary to enable him to act in that capacity." That is precisely what the physician was allowed to do in the present case. It is of no consequence that the defendant was not present to object to the evidence. The Code does not provide that such evidence may be received, if not objected to. The prohibition is absolute, that the physician shall not be allowed to testify, and it remains effective unless the provisions are expressly waived on the trial by the patient. Section 836, *Code Civ. Proc.* The Court should have refused to receive the evidence, and, if it was received inadvertently, should have disregarded it. If it was disregarded, there was no evidence in the case to uphold the allegations of the complaint.

News Items.

A Memorial to a Late Professor.—The unveiling of the memorial to the late Professor D. B. St. John Roosa, M.D., will take place at the New York Post-Graduate Hospital on Thursday, November 7, at 4 p. m.

Harvey Society Lecture.—Professor Joseph Erlanger, of George Washington University, Washington, D. C., will deliver the next lecture in the course this evening at 8:30 o'clock, at the New York Academy of Medicine, his subject being the Localization of Impulse Initiation and Conduction in the Heart.

A Hospital for Contagious Diseases in Evanston, Ill.—Mr. James A. Patton has offered to build a hospital for contagious diseases in Evanston, Ill., provided an endowment fund of \$100,000 to maintain the institution is raised. The work of collecting this fund is in the hands of the North Shore Contagion Hospital Association, which has already collected nearly \$50,000.

Tioga County Medical Society.—This society has elected the following officers to serve for the ensuing year: President, Dr. W. A. Moulton, of Candor; vice-president, Dr. C. W. Chidester, of Newark Valley; secretary, Dr. Charles J. V. Redding, of Owego; treasurer, Dr. J. M. Barrett, of Owego. Dr. C. L. Stiles, of Owego, was elected delegate to the meeting of the sixth district branch.

Society of Medical Jurisprudence.—A regular meeting of this society will be held on the evening of November 11th, at the New York Academy of Medicine, under the presidency of Dr. Reynold Webb Wilcox. The paper of the evening will be read by H. L. Hollingsworth, Ph.D., of the Department of Psychology, Columbia University, his subject being the Relation of Psychology to Medicine and Law. Dr. J. J. MacPhee will open the discussion.

Medical Society of the Borough of the Bronx.—A stated meeting of this society will be held at the Bronx Masonic Temple, 177th Street and Washington Avenue, on Wednesday evening, November 13th, at 8:30 o'clock. Dr. M. S. Kakels will present three patients showing the result of arthrocentesis of the knee joint, and Dr. W. S. Gottheil will present a patient with generalized scleroderma. Papers will be read by Dr. Charles Herrman on Teething as a Cause of Disease, and Dr. A. J. Rongy on the Indications for Pylotomy.

Mississippi Valley Medical Association.—At the thirty-eighth annual meeting of this association, held in Chicago on October 22d, 23d, and 24th, under the presidency of Dr. Louis Frank, of Louisville, Ky., the following officers were elected to serve for the ensuing year: President, Dr. Albert E. Sterne, of Indianapolis; first vice-president, Dr. D'Orsay Hecht, of Chicago; second vice-president, Dr. Hugh Cabot, of Boston; secretary, Dr. Henry Enos Tuley, of Louisville; treasurer, Dr. Samuel C. Stanton, of Chicago. New Orleans was selected as the place for holding the next meeting.

Common Drinking Cups.—On account of the frequent spread of disease by the use of common drinking cups, Interstate Quarantine Regulations have been amended by the addition of the following paragraph:

PARAGRAPH 13. Common carriers shall not provide in cars, hotel cars, vessels, or conveyances operated in interstate traffic, or in depots, waiting rooms, or other places used by passengers traveling from one State or Territory or the District of Columbia to another State or Territory or the District of Columbia, any drinking cup, glass, or vessel for common use. *Provided*, that this regulation shall not be held to preclude the use of drinking cups, glasses, or vessels which are thoroughly cleansed by washing in boiling water after use by each individual, nor shall it be held to preclude the use of sanitary devices for individual use only.

Radiology and Gynecology at the Seventeenth International Congress of Medicine.—The bureau of the Seventeenth International Congress of Medicine, which will be held in London, August 5 to 12, 1913, has asked Dr. Foveau de Courmelles, of Paris, to make a report on X Rays and Radium in Gynecology, for the presentation of which a special meeting will be held of the Sections in Radiology and Gynecology. Doctor de Courmelles, therefore, begs his confrères, who may have any detailed observations to report, to write him at the earliest possible moment, as his report must be in the hands of the bureau not later than February 1, 1913. His address is 26 rue de Châteaudun, Paris.

Fifth District Medical Society.—At a meeting of the Fifth District Branch of the Medical Society of the State of New York, held in Oswego on October 3d, the following officers were elected: President, Dr. Otto Pfaff, of Oneida; vice-president, Dr. H. P. Marsh, of Fulton; secretary, Dr. Fred H. Flaherty, of Syracuse; treasurer, Dr. J. M. Barnett, of Watertown. The meeting next year will be held in Oneida.

A Merger of the Birmingham Medical College with Howard University Under Consideration.—The question of merging the Birmingham Medical College with Howard University is now being considered by a special committee appointed by the board of trustees of the latter institution, and a report will be submitted to the president of the board as soon as possible. The board of trustees of the University of Alabama have still under consideration a similar proposal, but it is the general opinion that the best disposition of the school would be to consolidate it with Howard University, such a merger adding strength to both institutions and giving Birmingham a university of the first class.

Compulsory Reports of Industrial Accidents and Diseases.—According to a report issued Friday, November 8th, by the American Association for Labor Legislation, the movement for compulsory uniform reports of industrial accidents and diseases has made distinct progress during 1912. Seven States have passed new laws or strengthened old ones relating to the notification of accidents, and two States, Maryland and New Jersey, have joined the six States which require physicians to report occupational diseases. Regulations for the purpose of preventing industrial injuries by the use of safety devices on dangerous machinery and exhaust hoods over poisonous fumes are also numerous.

Clinical Conference at the Children's Hospital.—The medical board of the Children's Hospitals and Schools on Randall's Island held a clinical conference on Tuesday afternoon, October 29th. The following topics, with illustrative cases, were discussed: Radical mastoid operation in children; ethmoiditis in children; effects of oophorectomy upon the mentality of girls; reconstruction of the hip joint by bone grafting; value of the open air treatment of pneumonia; chronic purulent conjunctivitis; flaccid cerebral diplegia; goitre complicating cretinism; panniculus adiposus and marked enteroptosis relieved by resection of the abdominal muscles; complete hysterectomy and appendectomy under spinal anesthesia. These clinics are open to the medical profession.

Gifts and Bequests to Hospitals.—By the will of Nathan F. Strauss, who died last December, Mount Sinai Hospital will receive \$5,000 and the Montefiore Home and the Hebrew Orphan Asylum each \$2,000.

Mr. James B. Brady, of New York, recently a patient at Johns Hopkins Hospital, Baltimore, has presented to that institution \$500,000 in appreciation of its work and for the extension of its activities.

Announcement is made of a gift of \$25,000 to the Joseph E. Schoenberg Memorial Hospital, Denver, dedicated on October 27th. The gift will constitute an endowment fund.

By the will of Mrs. May Cossitt Dodge, Lincoln Hospital will receive \$25,000 and the Adirondack Cottage Sanatorium \$10,000.

The will of Frank Lindsay, late of Chambersburg, Pa., contains a bequest of \$5,000 to the Chambersburg Hospital, to endow a bed in memory of his mother.

Treatment of Fractures of the Long Bones.—The American Surgical Association has appointed a Committee on the Treatment of Fractures of the Long Bones, whose duty it will be to collate information on the operative and nonoperative treatment of closed and open fractures of the long bones and the value of radiography in the study of these injuries, and to submit a report on the subject. Surgeons who have published papers relating to this subject within the last ten years are requested to favor the committee with two reprints, or, if no reprints are available, to furnish the titles of the articles and the places of publication. Dr. John B. Roberts, 313 South Seventeenth Street, Philadelphia, is chairman of the committee, and all communications should be addressed to him. Other members of the committee are Dr. William L. Estes, of South Bethlehem, Pa.; Dr. Thomas W. Huntington, of San Francisco; Dr. John B. Walker, of New York, and Dr. Edward Martin, of Philadelphia.

Association for the Study of Pellagra.—The second triennial meeting of this association was held in Columbia, S. C., on October 3d and 4th, under the presidency of Dr. J. W. Babcock. The presidential address was delivered at the first session, Doctor Babcock's subject being the History of Pellagra in the State of South Carolina. The programme contained over sixty pages dealing with the various phases of pellagra, covering the etiology, epidemiology, statistics, local history, diagnosis, laboratory investigations, clinical features, treatment, and miscellaneous aspects of the disease. At the first evening session Surgeon General Rupert Blue, of the Public Health Service, delivered an address on the Problem of Pellagra, in which he emphasized the need of men and money adequate to meet the difficulties of a very perplexing subject, and urged upon the States the necessity of making the disease reportable. The Thompson-McFadden Commission, which has been at work in South Carolina, presented papers on the bacteriology and epidemiology of pellagra. Officers for the ensuing year were elected as follows: Passed Assistant Surgeon C. H. Lavinder, Public Health Service, president; Captain Joseph F. Siler, Medical Corps, United States Army, first vice-president; Dr. C. C. Bass, of Tulane University, New Orleans, second vice-president; Dr. J. W. Babcock, superintendent of the State Hospital for the Insane, Columbia, S. C., secretary; Dr. J. A. Hayne, State health officer of South Carolina, treasurer. The time and place for the next meeting of the association were not decided upon.

Personal.—Dr. S. Adolphus Knopf, of New York, has been elected honorary president of the medical board of the Bruchesi Institute of Tuberculosis of Montreal, and consulting physician to the institution. Dr. Eugene Grenier, a former pupil of Doctor Knopf, is director of the Bruchesi Institute, which is doing splendid work among the tuberculous French Canadian population. Besides a well equipped dispensary, in which ambulant cases are taken care of, it has a preventorium situated some distance from Montreal, and does a good deal of educational work by means of popular lectures and social workers.

Medical Director Henry G. Beyer, United States Navy, was placed on the retired list of Monday, October 28th, having reached the age limit for active service. For the past two years he has been in charge of the Naval Medical School, in Washington.

Dr. Walter A. Rullman, of Annapolis, Md., has accepted the position of assistant to Dr. Edwin Field, chief surgeon of the Monmouth Hospital, Red Bank, N. J.

Dr. George S. Bliss, superintendent of the Maine State School for the Feeble Minded since its foundation several years ago, has resigned to accept a similar position in the Indiana School for the Feeble Minded, at Fort Wayne.

Dr. Stanley F. Duncan, of Baltimore, Md., has been appointed assistant surgeon at the Malden, Mass., hospital.

Dr. W. C. Turnbull, for the past ten years in charge of one of the State tuberculosis dispensaries in Philadelphia, has been appointed medical director of the new Cresson Tuberculosis Sanatorium, which will be opened about the first of the year. Doctor Turnbull is also assistant instructor in medicine at the University of Pennsylvania.

Dr. Howard G. Holloway, bacteriologist to the Florida State Board of Health, has been appointed pathologist to the State Hospital for the Insane, at Chattahoochee.

Dr. George B. Shattuck, of Boston, was elected president of the Massachusetts Charitable Eye and Ear Infirmary, at the recent annual meeting of the board of directors of the institution.

Dr. Charles P. Small, physician to the University of Chicago since the founding of that institution, has resigned in order to devote his time to private practice.

Dr. Charles Lincoln Edwards has been appointed professor of embryology and histology in the medical department of the University of Southern California.

Thomas Wingate Todd, M.B., F.R.C.S., lecturer in anatomy at Victoria University, Manchester, England, has been appointed Henry Willson Payne professor of anatomy in the medical department of Western Reserve University, and will assume his new duties about December 10th.

Dr. Anthony Bassler has been appointed clinical professor of medicine in the New York Polyclinic Medical School and Hospital.

Kentucky State Medical Association.—The annual meeting of this association, held in Louisville last week, was marked by the heaviest registration in the history of the organization, 687 members attending. A contest for the convention next year was made by the delegates from Lexington and Bowling Green, the latter winning. Officers were elected as follows: Dr. W. O. Roberts, of Louisville, president, Dr. D. O. Hancock, of Henderson, being named president to serve for the current year; vice-presidents, Dr. J. H. Hendren, of Carey; Dr. T. C. Holloway, of Lexington, and Dr. J. Paul Keith, of Hopkinsville; two-year delegates to the American Medical Association, Dr. A. T. McCormack, of Bowling Green, and Dr. J. W. Kincaid, of Catlettsburg; orator in medicine, Dr. T. Atchison Frazer, of Marion; orator in surgery, Dr. W. E. Senour, of Bellevue; councillors from the first, second, and tenth districts, for five years, Dr. W. W. Richmond, of Clinton; Dr. Cyrus Graham, of Henderson, and Dr. R. A. Shirley, of Winchester. At a meeting of the House of Delegates, a resolution was adopted making Dr. John A. Witherspoon, president elect of the American Medical Association, an honorary life member of the Kentucky State Medical Association. The prize of \$100 for the scientific exhibit of highest educational value to the general practitioners of Kentucky was divided between Dr. J. H. Hendren, of Carey, for his pellagra exhibit, and Dr. Martin H. Fischer, of Cincinnati, for his exhibit on Bright's disease. Diplomas of honorable mention were awarded to Dr. Vernon Robbins and Dr. Leo Bloch, of Louisville, for their exhibits on cerebrospinal meningitis. The thanks of the association were given to Surgeon General Rupert Blue, of the United States Public Health Service, for his hygiene exhibit, and to Assistant Surgeon Joseph Goldberger, of the service, who demonstrated in the hygiene exhibit.

Seventeenth International Congress of Medicine.

The Seventeenth International Congress of Medicine will be held in London, August 6 to 12, 1913, under the patronage of King George V. The opening meeting will be held on Wednesday, August 6th, at 11 a. m. in Albert Hall, Prince Arthur of Connaught presiding. A general session will be held in Albert Hall on each day except Saturday, at 5:30 p. m., at which the following addresses will be delivered: Wednesday, August 6th, Address in Medicine, by Professor Chauffard, of Paris; Friday, August 8th, Address in Pathology, by Geheimrat Professor Paul Ehrlich, of Frankfurt; Tuesday, August 12th, Address on Public Health, by the Hon. John Burns, M. P., president of the local government board; Address in Surgery, by Professor Harvey Cushing, of Harvard University; Address on Heredity, by W. Bateson, F.R.S. The work of the congress has been divided into the following sections: Section i, Anatomy and Embryology; section ii, Physiology; section iii, General Pathology and Pathological Anatomy; subsection iii, Chemical Pathology; section iv, Bacteriology and Immunity; section v, Therapeutics, including Pharmacology, Physiotherapy, and Balneology; section vi, Medicine; section vii, Surgery; subsection vii (a) Orthopedics; subsection vii (b), Anesthesia, General and Local; section viii, Obstetrics and Gynecology; section ix, Ophthalmology; section x, Diseases of Children; section xi, Neuropathology; section xii, Psychiatry; section xiii, Dermatology and Syphilology; section xiv, Urology; section xv, Rhinology and Laryngology; section xvi, Otolaryngology; section xvii, Stomatology; section xviii, Hygiene and Preventive Medicine; section xix, Forensic Medicine; section xx, Naval and Military Hygiene; section xxi, Tropical Medicine; section xxii, Radiology; section xxiii, History of Medicine. A preliminary programme has been issued of the discussions and names of reporters, so far as they have been arranged. This programme also contains the rules governing the congress and the work of the sessions, as well as much useful information concerning traveling facilities and hotel accommodations. All correspondence should be addressed to the offices of the congress as follows: The Hon. General Secretary, Seventeenth International Congress of Medicine, 13 Hinde Street, London W., England. The officers of the congress are: President, Sir Thomas Barlow, M.D., F.R.S.; treasurers, G. H. Makins, C.B., F.R.C.S., and Sir Dye Duckworth, M.D.; chairman of the executive committee, Sir Alfred Pearce Gould, M.S., F.R.C.S.; general secretary, Dr. W. P. Herringham.

CLINICAL CONGRESS OF SURGEONS

OF NORTH AMERICA

A Programme of the Clinics to be held in the Hospitals of the Greater City of New York, during the

THIRD ANNUAL SESSION, NOVEMBER 11 to 16, 1912

Headquarters: Waldorf Apartments and Grand Ballroom of the Waldorf-Astoria.

Members are reminded of the necessity of securing a membership card for presentation before admission to clinics.

SURGICAL CLINICS.

MISS ALSTON'S SANATORIUM	
26 West 61st Street, New York.	
Nov. 11—SURESI, A. L.....	9
Nov. 14—SURESI, A. L.....	9
BABIES' HOSPITAL	
135 East 53th Street, N.w York.	
Nov. 15—DOWNS, W. A.....	2
BELLEVUE HOSPITAL	
First Avenue and 26th Street, New York.	
Nov. 11—HOTCHKISS, L. V.....	9
Nov. 11—HARTWELL, JOHN A.....	9
Nov. 12—ROGERS, JOHN.....	9
Nov. 12—HOTCHKISS, L. V.....	9
Nov. 13—WALKER, JOHN B.....	9
Nov. 14—WALKER, JOHN B.....	9
Nov. 14—HARTWELL, JOHN A.....	2
Nov. 15—HOTCHKISS, L. V.....	9
Nov. 15—WOLFEY, GEORGE.....	9
BETH ISRAEL HOSPITAL	
Monroe, Jefferson and Cherry Streets, New York.	
Nov. 11—ISAACS, A. E.....	morning
Nov. 11—SILVER, H. M.....	morning
Nov. 13—SILVER, H. M.....	2 to 4
Nov. 16—SILVER, H. M.....	2 to 4
Nov. 16—ISAACS, A. E.....	afternoon
BROOKLYN HOSPITAL	
Raymond Street, Brooklyn.	
Nov. 11—WOOD, W. C.....	10 to 12
Nov. 11—JENNINGS, J. E.....	2 to 4
Nov. 14—JENNINGS, J. E.....	2 to 4
Nov. 15—WOOD, W. C.....	10 to 12
Nov. 16—FRANK, CLAUDE A.....	10 to 12
HILDEN'S HOSPITAL	
Randall's Island, New York.	
Nov. 11—PEET, EDWARD W.....	9 to 12
Nov. 11—FORD, CHARLES M.....	9 to 12
Nov. 13—BAINBRIDGE, WM. S.....	9 to 12
Nov. 13—FRANK, CLAUDE A.....	9 to 12
ITY HOSPITAL	
Blackwell's Island, New York.	
Nov. 13—DAWARN, ROBERT.....	2 to 6
Nov. 13—FOOTE, E. M.....	2 to 6
Nov. 13—COLLINS, H. D.....	2 to 6
ONEY ISLAND HOSPITAL	
Ocean Parkway, Brooklyn.	
Nov. 11—BOGART, A. H.....	2 to 4
Nov. 12—FISKE, E. H.....	2 to 4
Nov. 13—MURPHY, J. P.....	2 to 4
Nov. 14—LACKEY, W. H.....	2 to 4
JMBERLAND STREET HOSPITAL	
105 Cumberland Street, Brooklyn.	
Nov. 12—WALMSLEY, R. F.....	1 to 3
Nov. 12—PALLISTER, S. W.....	3 to 5
Nov. 14—RITCH, O. S.....	1 to 3
Nov. 14—WELLS, G. H.....	3 to 5
OWER HOSPITAL	
Stern Boulevard and 63d Street, New York.	
Nov. 12—BISHOP, W. H.....	2
Nov. 16—HELMUTH, W. T.....	2
ORDHAM HOSPITAL	
Southern Boulevard, New York.	
Nov. 11—HIGGINS, J. J.....	10 to 12
Nov. 11—HEALY, WILLIAM P.....	2
Nov. 12—TAYLOR, A. S.....	10 to 12
Nov. 12—NICOLL, ALEXANDER.....	2
Nov. 13—HIGGINS, J. J.....	10 to 12
Nov. 13—HEALY, WILLIAM P.....	2
Nov. 14—TAYLOR, A. S.....	10 to 12
Nov. 14—NICOLL, ALEXANDER.....	2
Nov. 15—HIGGINS, J. J.....	10 to 12
Nov. 15—HEALY, WILLIAM P.....	2
Nov. 16—TAYLOR, A. S.....	10 to 12
Nov. 16—NICOLL, ALEXANDER.....	2

FRENCH HOSPITAL	
450 West 34th Street, New York.	
Nov. 12—POOL, EDUGNE.....	2
Nov. 13—TUBREUX, DAVID.....	2
GENERAL MEMORIAL HOSPITAL	
2 West 140th Street, New York.	
Nov. 13—DOWNS, W. A.....	11
Nov. 13—DOWD, CHARLES N.....	2:30
Nov. 15—DOWD, CHARLES N.....	9:30
GERMAN HOSPITAL (NEW YORK)	
Park Avenue and 77th Street, New York.	
Nov. 11—KILIANI, O. G. T.....	9
Nov. 11—FISCHER, HERMANN.....	9
Nov. 11—FOR K. FRANZ.....	2
Nov. 12—KILIANI, O. G. T.....	9
Nov. 12—FISCHER, HERMANN.....	9
Nov. 12—FOR K. FRANZ.....	2
Nov. 12—WALASSE, J. P. (Brooklyn).....	10 to 1
Nov. 12—MYER, WILLY.....	4
Nov. 12—REHLING, M.....	4
Nov. 13—MYER, WILLY.....	9
Nov. 13—REHLING, M.....	9
Nov. 13—KAMMERER, F.....	2
Nov. 13—SILFEN, DEWITT.....	2
Nov. 14—FOR K. FRANZ.....	9
Nov. 14—KILIANI, O. G. T.....	9
Nov. 14—FISCHER, HERMANN.....	2
Nov. 14—WALASSE, J. P. (Brooklyn).....	10 to 1
Nov. 14—MYER, WILLY.....	4
Nov. 14—REHLING, M.....	4
Nov. 15—FOWLER, R. S. (Brooklyn).....	10 to 1
Nov. 16—KAMMERER, F.....	9
Nov. 16—SILFEN, DEWITT.....	9
Nov. 16—MYER, WILLY.....	9
Nov. 16—REHLING, M.....	2
HARLEM HOSPITAL	
Lenox Avenue and 130th Street, New York.	
Nov. 11—LUCKETT, W. H.....	1:30
Nov. 12—HAYNES, I. S.....	1:30
Nov. 13—LUCKETT, W. H.....	1:30
Nov. 14—HAYNES, I. S.....	2:15
Nov. 15—LUCKETT, W. H.....	1:30
Nov. 16—HAYNES, I. S.....	2:15
HOLY FAMILY HOSPITAL	
155 Dean Street, Brooklyn.	
Nov. 12—DOWNEY, J.....	2 to 4
Nov. 13—FISKE, E. H.....	2 to 4
Nov. 14—SULLIVAN, R.....	2 to 4
HUDSON STREET HOSPITAL	
67 Hudson Street, New York.	
Nov. 11—MURRAY, F. W. and staff.....	2:30
Nov. 13—MURRAY, F. W. and staff.....	2:30
Nov. 15—MURRAY, F. W. and staff.....	2:30
JEWISH HOSPITAL (NEW YORK)	
270 E. Broadway, New York.	
Nov. 11—DUFFIELD, W. L. (Brooklyn).....	9 to 12
Nov. 11—LINDER, W. (Brooklyn).....	2 to 4
Nov. 13—LINDER, W. (Brooklyn).....	9 to 12
Nov. 13—DUFFIELD, W. L. (Brooklyn).....	2 to 4
Nov. 15—LINDER, W. (Brooklyn).....	2 to 4
KINGS COUNTY HOSPITAL	
Clarkson Street, Brooklyn.	
Nov. 12—BRISTOW, A. T.....	10 to 12
Nov. 14—ROWE, J. B.....	10 to 12
Nov. 16—BARBER, C.....	9 to 11
LEBANON HOSPITAL	
Westchester and Central Avenues, New York.	
Nov. 11—SYMS, PARKER, and staff.....	10 to 2
Nov. 13—SYMS, PARKER, and staff.....	10 to 2
LINCOLN HOSPITAL	
741st Street and Concord Avenue, New York.	
Nov. 14—TILTON, P. T.....	8:30
Nov. 14—PUTNEY, C. R. L.....	11
Nov. 14—MILLIKEN, SETH, JR.....	2
LONG ISLAND HOSPITAL	
Pacific and Amity Streets, Brooklyn.	
Nov. 11—RUSHMORE, J. C.....	9 to 12

Nov. 13—BRINSMADE, W. B.....	10 to 12
Nov. 15—BRISTOW, A. T.....	10 to 12
METHODIST EPISCOPAL HOSPITAL	
7th Avenue and 6th Street, Brooklyn.	
Nov. 11—BOGART, A. H., and J. B.....	9 to 11
Nov. 12—STENCE, I. B.....	9 to 11
Nov. 12—CAMPBELL, W. F.....	11 to 1
Nov. 12—FOWLER, R. S.....	2 to 4
Nov. 13—BOGART, A. H., and J. B.....	9 to 11
Nov. 13—GOODRICH, C. G.....	11 to 1
Nov. 13—SHERWOOD, W. A.....	11 to 1
Nov. 14—SPENCY, T. B.....	9 to 11
Nov. 14—GOODRICH, C. G.....	11 to 1
Nov. 14—CAMPBELL, W. F.....	11 to 1
Nov. 15—BOGART, A. H., and J. B.....	9 to 11
Nov. 15—SHERWOOD, W. A.....	11 to 1
Nov. 16—STENCE, I. B.....	9 to 11
Nov. 16—CAMPBELL, W. F.....	11 to 1
Nov. 16—FOWLER, R. S.....	2 to 4
METROPOLITAN HOSPITAL	
Blackwell's Island, New York.	
Nov. 11—HARRINGTON, G. S.....	2
Nov. 13—HONAN, W. F.....	2
Nov. 14—HARRINGTON, G. S.....	2
Nov. 15—HONAN, W. F.....	2
MIDWOOD HOSPITAL	
18 Park Side Avenue, Brooklyn.	
Nov. 11—HARRINGTON, G. S.....	9 to 12
Nov. 13—HARRINGTON, G. S.....	9 to 12
Nov. 15—HARRINGTON, G. S.....	9 to 12
MT. SINAI HOSPITAL	
100th Street and 5th Avenue, New York.	
Nov. 12—BERG, A.....	9
Nov. 12—WARE, A.....	9
Nov. 12—GERSTER, A. G.....	9
Nov. 13—MOSCHOWITZ.....	9
Nov. 13—LEWISohn, RICHARD.....	9
Nov. 15—ELSBURG, C. A.....	9
Nov. 15—BLICKER, W. M.....	9
Nov. 15—LILIENTHAL, H.....	9
Nov. 16—WIENER, J.....	9
NEUROLOGICAL INSTITUTE	
149 E. 67th Street, New York.	
Nov. 12—FISHER, C. A.....	2
Nov. 14—TAYLOR, A. S.....	2
Nov. 14—ELSBURG, C. A.....	2
Nov. 14—TAYLOR, A. S.....	2
NEW YORK HOSPITAL	
8 West 16th Street, New York.	
Nov. 11—HARRINGTON, G. S.....	2:30
Nov. 11—DOWNS, W. A.....	2:30
Nov. 12—HARTLEY, FRANK, and staff.....	9:30
Nov. 13—JOHNSON, A. B.....	9:30
Nov. 13—DOWNS, W. A.....	2:30
Nov. 14—HARTLEY, FRANK, and staff.....	9:30
Nov. 16—HARTLEY, FRANK, and staff.....	9:30
NORWEGIAN HOSPITAL	
4th Avenue and 46th Street, Brooklyn.	
Nov. 11—DELATOR, H. B.....	9 to 11
Nov. 12—FERRIS, E. D.....	10 to 12
Nov. 14—DELATOR, H. B.....	9 to 11
Nov. 14—FERRIS, E. D.....	10 to 12
PILCHER PRIVATE HOSPITAL	
145 Gates Avenue, Brooklyn.	
Nov. 11—PILCHER, L. S. and P. M.....	9 to 12
Nov. 13—PILCHER, L. S. and P. M.....	9 to 12
Nov. 15—PILCHER, L. S. and P. M.....	9 to 12
POLYCLINIC HOSPITAL	
341 West 50th Street, New York.	
Nov. 11—WYETH, JOHN A.....	11
Nov. 11—LYNCH, JEROME M.....	1:30
Nov. 12—BAINBRIDGE, WM. S.....	11
Nov. 13—BODINE, JOHN A.....	11
Nov. 13—LYNCH, JEROME M.....	1:30
Nov. 14—LYLE ALEXANDER.....	11
Nov. 15—BAINBRIDGE, WM. S.....	11

Nov. 15—ERDMANN, J. F. 11
Nov. 16—RODINE, JOHN A. 11

POST GRADUATE HOSPITAL

105 East 30th Street, New York.
Nov. 11—MEYER, WILLY 19
Nov. 11—LYOYD, SAMUEL 2
Nov. 11—GANT, S. G. 3 30
Nov. 12—LYOYD, SAMUEL 10
Nov. 12—MEYER, WILLY 2
Nov. 12—ERDMANN, J. F. 3 30
Nov. 12—DE GARMO, W. B. 4 30
Nov. 13—ERDMANN, J. F. 10
Nov. 13—MORRIS, R. T. 2
Nov. 14—MORRIS, R. T. 10
Nov. 14—LYOYD, SAMUEL 2
Nov. 14—DE GARMO, W. B. 3 30
Nov. 15—GANT, S. G. 2
Nov. 16—MORRIS, R. T. 2

PROSPECT HEIGHTS HOSPITAL

Washington Avenue and St. John's Place,
Brooklyn.
Nov. 11—RITCH, O. M. 1 to 5
Nov. 13—PALISTER, S. W. 3 to 5
Nov. 14—ROBINSON, N. 3 to 5

ROOSEVELT HOSPITAL

58th Street and 9th Avenue, New York.
Nov. 12—CONNELL, KAREL 9
Nov. 11—BROOK, GEORGE 2
Nov. 12—PECK, CHARLES H. 0
Nov. 12—BREWSTER, GEORGE E. 2
Nov. 13—DAVID, CHARLES N. 9
Nov. 13—BARUCH, WILLIAM 2
Nov. 14—PECK, CHARLES H. 9
Nov. 14—AUBREY, FRED 4
Nov. 15—LAMBART, A. V. S. 9
Nov. 15—RUSSELL, JAMES 2
Nov. 16—PECK, CHARLES H. 9
Nov. 16—BREWSTER, GEORGE E. 2

SKIN AND CANCER HOSPITAL

2d Avenue and 19th Street, New York.
Nov. 11—BALNBRIDGE, WM. S., and staff. 9 to 1
Nov. 12—TOREK, FRANZ, and staff. 9 to 11
Nov. 13—BALNBRIDGE, WM. S., and staff. 4 to 6
Nov. 13—TOREK, FRANZ, and staff. 4 to 6
Nov. 14—BALNBRIDGE, WM. S., and staff. 9 to 11
Nov. 15—TOREK, FRANZ, and staff. 9 to 11
Nov. 16—BALNBRIDGE, WM. S., and staff. 9 to 11

ST. CATHERINE'S HOSPITAL

Bushwick Avenue and Maujer Street,
Brooklyn.
Nov. 12—MCENTEL, E. J. 0 to 12
Nov. 14—HUGHES, P. 0 to 12
Nov. 15—FRIGIERI, S. 9 to 12

ST. FRANCIS'S HOSPITAL

122d Street and St. Ann's Avenue, New York.
Nov. 11—ROGERS, JOHN 2 30 to 5
Nov. 12—DOWNES, W. A. 2 30 to 5
Nov. 13—ROGERS, JOHN 2 30 to 5
Nov. 15—ROGERS, JOHN 2 30 to 5
Nov. 16—DOWNES, W. A. 5 30 to 12

ST. JOHN'S HOSPITAL

103 Park Avenue, New York.
Nov. 12—SIMMONS, W. S. 10 to 12
Nov. 13—DELLATOUR, H. T. 9 to 12
Nov. 14—DELLATOUR, H. T. 9 to 12
Nov. 15—BRINSMAD, W. B. 9 to 12

ST. LUKE'S HOSPITAL

13th Street and Amsterdam Ave., New York.
Nov. 13—MARTIN, V. 2 to 4
Nov. 13—GREEN, B. W. 4 to 9
Nov. 15—ABBE, ROBERT 2 to 1
Nov. 15—SCHLEY, W. S. 4 to 6

ST. MARK'S HOSPITAL

179 2d Avenue, New York.
Nov. 13—TILTON, B. T. 9
Nov. 13—PUTNAM, C. R. L. 2

ST. MARY'S HOSPITAL (NEW YORK)

411 West 34th Street, New York.
Nov. 11—SULLIVAN, J. P. (Brooklyn) 9 to 12
Nov. 12—KENNEDY, J. C. (Brooklyn) 9 to 12
Nov. 12—DOWD, CHARLES N. 2 30
Nov. 13—MATHEWS, F. S. 9 30
Nov. 13—KENNEDY, J. C. (Brooklyn) 9 to 12
Nov. 14—PARKER, E. A. 9 to 12
Nov. 15—GORDON, O. A. (Brooklyn) 9 to 12
Nov. 16—DOWD, CHARLES N. 2 30
Nov. 16—LEE, J. A. (Brooklyn) 9 to 12

ST. VINCENT'S HOSPITAL

7th Avenue and 11th Street, New York.
Nov. 11—BISSELL, JOSEPH B. 2
Nov. 13—STEWART, GEORGE D. 2
Nov. 14—BISSELL, JOSEPH B. 2
Nov. 15—STEWART, GEORGE D. 2
Nov. 16—ASBURY, J. 8 30

SWEDISH HOSPITAL

Rogers Avenue and Sterling Place, Brooklyn.
Nov. 11—CHAPMAN, W. L. 10 to 12
Nov. 13—LYNCH, L. A. 10 to 12
Nov. 15—SIMMONS, W. S. 10 to 12

TRINITY HOSPITAL

50 Varick Street, New York.
Nov. 16—CAMPELL, W. F. 12 to 15

WILLIAMSBURG HOSPITAL

Bedford Avenue and St. 3d Street, Brooklyn.
Nov. 12—MORRISON, R. J. 9 to 12
Nov. 12—BODKIN, M. L. 2 to 4
Nov. 14—PARKER, E. A. 2 to 4
Nov. 15—DICKERT, J. 10 to 12

J. HOOD WRIGHT HOSPITAL

131st Street and Amsterdam Avenue, New York.
Nov. 15—CHASE, GEORGE T. 10

LARYNGOLOGICAL CLINICS.

MISS ALSTON'S SANATORIUM

20 West 61st Street, New York.
Nov. 13—COAKLEY, C. G. 8

BETH ISRAEL HOSPITAL

Monroe, Jefferson and Cherry Streets, New York.
Nov. 15—FREUDENTHAL, W. 1 to 5

BROOKLYN EYE AND EAR HOSPITAL

64 Livingston Street, Brooklyn.
Nov. 14—RAYMOND, F. C. 2 to 4
Nov. 14—STERS, W. H. 2 to 4
Nov. 15—ARROWSMITH, H. 1 30 to 3 30
Nov. 15—TUCKER, F. L. 1 30 to 3 30

BROOKLYN HOSPITAL

Rymond Street and Dekalb Avenue, Brooklyn.
Nov. 12—CRANE, C. G. 2
Nov. 12—LASHER, F. H. 2

CUMBERLAND STREET HOSPITAL

105 Cumberland Street, Brooklyn.
Nov. 11—PAINE, C. E. 2 to 3

GERMAN HOSPITAL (BROOKLYN)

Nov. 14—DROEG, J. H. 2 to 4
Nov. 14—ABERHILL, R. L. 3 to 4

GERMAN HOSPITAL (NEW YORK)

Park Avenue and 77th Street, New York.
Nov. 12—GELLSMAN, J. W. 3 30
Nov. 12—OEN, J. E. H. 3 30

JEWISH HOSPITAL (BROOKLYN)

Clarkson and St. Mark's Avenue, Brooklyn.
Nov. 12—STURGES, P. H. 2 to 3
Nov. 12—HOWE, A. C. 2 to 3

KINGS COUNTY HOSPITAL

Clarkson Street, Brooklyn.
Nov. 11—HARRISON, S. C. and assistants. 3 to 4

LONG ISLAND COLLEGE HOSPITAL

Pacific and Amity Streets, Brooklyn.
Nov. 12—KEPKE, J. 2 to 3
Nov. 14—FRENCH, T. R. 3 30
Nov. 14—DUDLEY, W. F. 3 30
Nov. 15—STURGES, P. H. 3 30

MANHATTAN EYE, EAR AND THROAT HOSPITAL

210 E. 64th Street, New York.
Nov. 11—COFFIN, LEWIS A. 2
Nov. 12—MACPHERSON, D. 11
Nov. 12—CARTER, W. W. 11
Nov. 12—WHITE, F. W. 11
Nov. 12—SMITH, HARMON 11
Nov. 13—MYNTER, C. E. 11
Nov. 13—FARK, EDGAR H. 11
Nov. 13—COOKS, G. H. 11
Nov. 13—KERNAN, J. D. 11
Nov. 13—PHELPS, G. M. 11
Nov. 13—CHAPPEL, W. F. 2
Nov. 14—MACKEY, J. E. 11
Nov. 14—GUNTZER, J. H. 11
Nov. 15—HARRIS, T. J. 11
Nov. 15—MCCULLOUGH, S. 11
Nov. 15—HUBBARD, W. 11
Nov. 15—HUBBARD, E. V. 11
Nov. 15—ROOF, S. W. 11

MT. SINAI HOSPITAL

100th Street and 5th Avenue, New York.
Nov. 11—MAVER, EMIL 2 to 4
Nov. 11—YANKAUER, SIDNEY 2 to 4
Nov. 13—MAVER, EMIL 2 to 4
Nov. 13—YANKAUER, SIDNEY 2 to 4
Nov. 14—OLFFENHEIMER, S. 3
Nov. 14—BALLIN, MILTON 3

NEW YORK EYE AND EAR INFIRMARY

218 2d Avenue, New York.
Nov. 12—HAYS, HAROLD 2

NEW YORK OPHTHALMIC HOSPITAL

23d Street and 3d Avenue, New York.
Nov. 11—TILTS, CHARLES E. 2 to 4
Nov. 12—TOWNSEND, I. 2 to 4
Nov. 14—PALMER, A. WERRALL 2 to 4
Nov. 16—VESHLAG, S. H. 2 to 4

NEW YORK POLYCLINIC HOSPITAL

341 W. 50th Street, New York.
Nov. 11—QUIMLAN, F. J. 2
Nov. 12—DELANEY, D. BRYSON 2 to 3 30
Nov. 13—MYLES, ROBERT G. 2 30
Nov. 14—QUIMLAN, F. J. 2 30
Nov. 15—ABRAHAM, JOSEPH H. 2 to 3 30
Nov. 16—MYLES, R. C. 2

NEW YORK POST-GRADUATE HOSPITAL

305 E. 24th Street, New York.
Nov. 11—RIEL, C. C. 2
Nov. 11—SHE-DY, B. O. 8 p.m.
Nov. 12—DOUGLASS, REAMAN 2
Nov. 13—HARRIS, T. J. 2
Nov. 13—RICE, C. C. 2
Nov. 14—HARRIS, T. J. 1
Nov. 14—DOUGLASS, B. 2
Nov. 14—SHE-DY, B. O. 8 p.m.
Nov. 15—RICE, C. C. 2
Nov. 16—HARRIS, T. J. 1
Nov. 16—LOVELL, F. S. 2

NEW YORK THROAT, NOSE, AND LUNG HOSPITAL

123 E. 57th Street, New York.
Nov. 12—HURD, L. M. 3
Nov. 12—CURTIS, H. A. 3
Nov. 13—MACISAAC, J. H. 3
Nov. 13—HELD, R. J. 3
Nov. 14—GOLDSTEIN, S. 3
Nov. 14—CURTIS, H. A. 3

ST. LUKE'S HOSPITAL

Amsterdam Avenue and 113th Street, New York.
Nov. 12—MYERS, T. HAUSTED 1 to 4

ST. MARY'S HOSPITAL (BROOKLYN)

St. Mark's Avenue, Brooklyn.
Nov. 12—CURTIS, H. A. 1 to 4

UNIVERSITY AND BELLEVUE HOSPITAL MEDICAL COLLEGE

1st Avenue and 20th Street, New York.
Nov. 11—13—15—SAYRE, R. H. 1 to 3

VANDERBILT CLINIC

437 West 56th Street, New York.
Nov. 11—12—13—14—15—JAGGER, CHARLES H. 10 to 12

ORTHOPEDIC SURGERY.

CORNELL UNIVERSITY MEDICAL COLLEGE

13th Avenue and 28th Street, New York.
Nov. 11—13—15—16—ALBEE, FRED H. 1 to 3

FORDHAM HOSPITAL

Southern Boulevard and Crotona Avenue, New York.
Nov. 14—KEPPLER, CARL R. 10 to 11

GERMAN POLYCLINIC

157 2d Avenue, New York.
Nov. 11—ASHLEY, DEXTER D. 1 to 3
Nov. 12—KEPPLER, CARL R. 1 to 3
Nov. 13—ASHLEY, DEXTER D. 1 to 3
Nov. 14—KEPPLER, CARL R. 1 to 3
Nov. 15—ASHLEY, DEXTER D. 1 to 3
Nov. 16—KEPPLER, CARL R. 1 to 3

HOSPITAL FOR DEFORMITIES AND JOINT DISEASES

1017 Madison Avenue, New York.
Nov. 12—14—FRUENTHAL, HENRY W. 10 to 11

HOSPITAL FOR RUPTURED AND CRIPPLED

321 E. 42d Street, New York.
Nov. 11—GIBNEY, VIRGIL P. 8 30
Nov. 11—GILLEY, ARTHUR H. 8 30
Nov. 11—TOWNSEND, WISNER R. 1 to 3
Nov. 12—GIBNEY, VIRGIL P. 8 30
Nov. 12—WHITMAN, ROYAL 8 30 to 12
Nov. 13—GIBNEY, VIRGIL P. 8 30
Nov. 13—GILLEY, ARTHUR H. 8 30
Nov. 13—TOWNSEND, WISNER R. 1 to 3
Nov. 14—GIBNEY, VIRGIL P. 8 30
Nov. 14—GILLEY, ARTHUR H. 8 30
Nov. 14—WHITMAN, ROYAL 1 to 3
Nov. 15—COLEY, WILLIAM B. 8 30
Nov. 15—WALKER, J. ORIN B. 8 30
Nov. 15—TOWNSEND, WISNER R. 1 to 4
Nov. 16—GIBNEY, VIRGIL P. 8 30
Nov. 16—GILLEY, ARTHUR H. 8 30
Nov. 16—WHITMAN, ROYAL 1 to 3

KINGS COUNTY HOSPITAL

Clarkson Street, Brooklyn.
Nov. 15—NAPIER, CHARLES D. 3 to 5
Nov. 15—TRUSLOW, WALTER 3 to 5

MT. SINAI HOSPITAL

100th Street and 5th Avenue, New York.
Nov. 11—NATHAN, P. W. 1 to 3
Nov. 12—ROBERTS, P. W. 1 to 3
Nov. 13—NATHAN, P. W. 1 to 3
Nov. 14—ROBERTS, P. W. 1 to 3
Nov. 15—NATHAN, P. W. 1 to 3
Nov. 16—ROBERTS, P. W. 1 to 3

METHODIST EPISCOPAL HOSPITAL

7th Avenue and 6th Street, Brooklyn.
Nov. 12—BROWN, WALTER 2 to 3

NEW YORK HOSPITAL

7 West 15th Street, New York.
Nov. 11—13—15—FISKE, JAMES P. 10 to 11
Nov. 12—14—16—STEINHAARD, IRVING D. 10 to 12

NEW YORK SCHOOL OF CLINICAL MEDICINE

328 West 42nd Street, New York.
Nov. 11—13—15—GIBNEY, HOMER 12 to 1

Nov. 11—TODD, J. F. 11 to 1
Nov. 14—BALDWIN, L. G. 9 to 12
Nov. 14—TODD, J. F. 11 to 1

SWEDISH HOSPITAL

Rogers Avenue and Sterling Place, Brooklyn.
Nov. 12—DUNCAN, J. B. 10 to 12
Nov. 14—JUDD, A. M. 10 to 12

ST. MARY'S HOSPITAL (BROOKLYN)

St. Mark's Avenue, Brooklyn.
Nov. 13—MACFARLANT, J. C. 2 to 4
Nov. 15—GLYNN, J. P. 2 to 4

WILLIAMS-BURG HOSPITAL

342 Bedford Avenue, Brooklyn.
Nov. 12—WADE, H. A. 1 to 3
Nov. 14—DODD, J. B. 9 to 10
Nov. 15—GORDON, C. A. 2 to 4

WOMAN'S HOSPITAL

141 West 100th Street, New York
Nov. 11—CLEVELAND, CLEMENT 9 to 11
Nov. 11—PINKHAM, E. W. 9 to 11

Nov. 11—GRAD, HERMAN 9 to 10
Nov. 11—FORD, W. M. 9 to 10
Nov. 11—BISSELL, DOUGLAS 2 to 6

Nov. 12—HAWKS, EVERETT M. 9 to 10
Nov. 12—CHAMBERS, P. F. 2 to 6
Nov. 12—GRAD, HERMAN 2 to 6

Nov. 13—PLINT, JR., AUSTIN 9 to 12
Nov. 13—FORD, W. M. 9 to 12
Nov. 13—CHILD, JR., C. G. 9 to 10

Nov. 13—GRAD, HERMAN 9 to 10
Nov. 13—CLEVELAND, CLEMENT 2 to 6
Nov. 13—PINKHAM, E. W. 2 to 6

Nov. 14—COLE, LEWIS GREGORY 9
Nov. 14—CHILD, JR., C. G. 9
Nov. 14—HROUN, LEROY 2

Nov. 14—RAWLS, REGINALD M. 2
Nov. 14—FORD, W. M. 9 to 10
Nov. 14—COLE, LEWIS GREGORY 9

Nov. 15—CHAMBERS, P. F. 10 to 11
Nov. 15—GRAD, HERMAN 9 to 11
Nov. 15—RAWLS, R. M. 9 to 10

Nov. 15—PINKHAM, E. W. 9 to 10
Nov. 15—COFFEY, J. R. 2 to 6
Nov. 15—CHILD, JR., C. G. 2 to 6

Nov. 16—BISSELL, DOUGLAS 9
Nov. 16—HAWKS, EVERETT M. 9
Nov. 16—RAWLS, REGINALD M. 2

Nov. 16—PINKHAM, E. W. 9 to 10
Nov. 16—PLINT, JR., AUSTIN 2 to 6
Nov. 16—FORD, W. M. 2 to 6

OTOLOGICAL CLINICS.

BETH ISRAEL HOSPITAL

Monroe, Junction and Cherry Streets, New York
Nov. 12—COHN, FELIX 9 to 12

BROOKLYN EYE AND EAR HOSPITAL

94 Livingston Street, Brooklyn, N. Y.
Nov. 11—ALDERSON, H. 2
Nov. 12—BRASLAW, W. C. 2 to 4

Nov. 12—LUTZ, S. H. 2 to 4
Nov. 13—COX, C. N. 2 to 4
Nov. 13—SHATTUCK, W. S. 2 to 4

Nov. 14—COLLINS, B. C. 2 to 4
Nov. 14—SHATTUCK, W. S. 3 to 5
Nov. 15—BRASLAW, W. C. 2 to 4

Nov. 15—COX, C. N. 2 to 4
Nov. 15—SHATTUCK, W. S. 2 to 4
Nov. 15—ALDERSON, G. A. 2 to 4

Nov. 15—LUTZ, S. H. 3 to 5
Nov. 16—COLLINS, B. C. 2 to 4

CUMBERLAND STREET HOSPITAL

105 Cumberland Street, Brooklyn, N. Y.
Nov. 11—SHEPPARD, S. E. 2 to 5

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NEW YORK EYE AND EAR INFIRMARY

218 2d Avenue, New York.
Nov. 11—DENCH, EDWARD B. 3 to 5
Nov. 12—BACON, GORHAM 3 to 5

Nov. 13—WHITING, FRED 3 to 5
Nov. 14—ADAMS, JOHN L. 3 to 5
Nov. 15—KENEFFICH, JOSEPH A. 3 to 5

Nov. 16—LEWIS, ROBERT 3 to 5
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Nov. 16—LEWIS, ROBERT 3 to 5

Nov. 16—DARLING, BYRON CLARY morning
Nov. 16—COLE, LEWIS GREGORY afternoon
Nov. 16—QUIMBY, ADONIRAM JUDSON 9 to 10; 1 to 2; 2 to 3

ROOSEVELT HOSPITAL

38th Street and 4th Avenue, New York.
Nov. 11—12-13-14-15-16—LEAMING, EDW. 3 to 5
Nov. 11—12-13-14-15-16—LEAMING, EDW. 3 to 5

ST. LUKE'S HOSPITAL

Amsterdam Avenue and 113th Street, New York.
Nov. 11-12-13-14-15-16—LEWALD, LEVI L. morning

OPHTHALMOLOGICAL CLINICS.

BROOKLYN EYE AND EAR HOSPITAL

94 Livingston Street, Brooklyn, N. Y.
Nov. 11—RUSHMORE, J. D. 2 to 4
Nov. 11—SHATTUCK, W. S. 2 to 4

Nov. 11—INGALLS, J. W. 2 to 4
Nov. 11—WOOD, J. S. 2 to 4
Nov. 11—SNYDER, W. H. 3 to 4

Nov. 12—WAUGH, H. H. 2 to 3
Nov. 12—SIMMONS, W. 2 to 4
Nov. 12—MEYER, D. W. 3 to 4

Nov. 13—BAILEY, F. DEF. 2
Nov. 13—INGALLS, J. W. 2 to 3
Nov. 14—WOOD, J. S. 2 to 4

Nov. 14—SNYDER, W. H. 2 to 4
Nov. 14—SIMMONS, W. 3 to 4
Nov. 15—WAUGH, H. H. 2 to 4

Nov. 15—BAILEY, F. DEF. 2 to 3
Nov. 15—SIMMONS, W. 3 to 4
Nov. 15—MEYER, D. W. 2 to 4

Nov. 16—WOOD, J. S. 2 to 3
Nov. 16—SNYDER, W. H. 2 to 4
Nov. 16—SIMMONS, W. 3 to 4

Nov. 16—MEYER, D. W. 2 to 4
Nov. 16—WOOD, J. S. 2 to 3
Nov. 16—SNYDER, W. H. 2 to 4

Nov. 16—SIMMONS, W. 3 to 4
Nov. 16—MEYER, D. W. 2 to 4
Nov. 16—WOOD, J. S. 2 to 3

Nov. 16—SNYDER, W. H. 2 to 4
Nov. 16—SIMMONS, W. 3 to 4
Nov. 16—MEYER, D. W. 2 to 4

Nov. 16—WOOD, J. S. 2 to 3
Nov. 16—SNYDER, W. H. 2 to 4
Nov. 16—SIMMONS, W. 3 to 4

Nov. 16—MEYER, D. W. 2 to 4
Nov. 16—WOOD, J. S. 2 to 3
Nov. 16—SNYDER, W. H. 2 to 4

Nov. 16—SIMMONS, W. 3 to 4
Nov. 16—MEYER, D. W. 2 to 4
Nov. 16—WOOD, J. S. 2 to 3

Nov. 16—SNYDER, W. H. 2 to 4
Nov. 16—SIMMONS, W. 3 to 4
Nov. 16—MEYER, D. W. 2 to 4

Nov. 16—WOOD, J. S. 2 to 3
Nov. 16—SNYDER, W. H. 2 to 4
Nov. 16—SIMMONS, W. 3 to 4

Nov. 16—MEYER, D. W. 2 to 4
Nov. 16—WOOD, J. S. 2 to 3
Nov. 16—SNYDER, W. H. 2 to 4

Nov. 16—SIMMONS, W. 3 to 4
Nov. 16—MEYER, D. W. 2 to 4
Nov. 16—WOOD, J. S. 2 to 3

Nov. 16—SNYDER, W. H. 2 to 4
Nov. 16—SIMMONS, W. 3 to 4
Nov. 16—MEYER, D. W. 2 to 4

Nov. 16—WOOD, J. S. 2 to 3
Nov. 16—SNYDER, W. H. 2 to 4
Nov. 16—SIMMONS, W. 3 to 4

Nov. 16—MEYER, D. W. 2 to 4
Nov. 16—WOOD, J. S. 2 to 3
Nov. 16—SNYDER, W. H. 2 to 4

Nov. 16—SIMMONS, W. 3 to 4
Nov. 16—MEYER, D. W. 2 to 4
Nov. 16—WOOD, J. S. 2 to 3

Nov. 16—SNYDER, W. H. 2 to 4
Nov. 16—SIMMONS, W. 3 to 4
Nov. 16—MEYER, D. W. 2 to 4

Nov. 16—WOOD, J. S. 2 to 3
Nov. 16—SNYDER, W. H. 2 to 4
Nov. 16—SIMMONS, W. 3 to 4

Nov. 16—MEYER, D. W. 2 to 4
Nov. 16—WOOD, J. S. 2 to 3
Nov. 16—SNYDER, W. H. 2 to 4

Nov. 16—SIMMONS, W. 3 to 4
Nov. 16—MEYER, D. W. 2 to 4
Nov. 16—WOOD, J. S. 2 to 3

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Nov. 16—SNYDER, W. H. 2

Pith of Progressive Literature.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT.

September 5, 1912.

1. SETZ: Hygiene of Puerperium.
2. SCHULTZ: Diagnosis and Operative Treatment of Tumors of the Meninges and Spinal Cord. Successful Operation on Intramedullary Tumor.
3. VULPIUS: Indications, Technique, and Results of Tendon Transplantation in Treatment of Spinal Paralysis of Children.
4. ESCH: Cholera Culture Media.
5. LÖWENHAUPT: Dementia paralytica and Childbirth.
6. BINGEL: Diabetes and Pregnancy.
7. M. JACOBY: Treatment of Fever in Abortions.
8. ROHLER: Artificial Conception in Double Epididymitis.
9. KLIENEBERGER: Hemorrhagic Encephalitis after Salvarsan Intusion.
10. ZIMMERN: Reinfection in Syphilis.
11. HENTZ: Liver Cirrhosis of Tuberculous Origin.
12. ROST: Edema of Lower Portion of Esophagus from Vomiting.
13. BOSS: Hexal, New Antiseptic Sedative for Bladder.
14. DOLGER: Hysterical (Functional) Complete Double Deafness.
15. ARMANN: Treatment of Psoriasis with Cold.
16. SCHMIDT and DAVID: Oxygen Poisoning.
17. OLGAD: Cherry Pit Twisted in Rectum.

September 12, 1912.

18. MEYER: Treatment of Insomnia.
19. BORCHARDT: Role of Healthy and Diseased Kidney in Excretion of Sodium Chloride.
20. ARMBRECHT: "Reaction of Degeneration" of Heart Muscle. Relation of Sugar to Heart Action.
21. FRIES: Treatment of Weak Labor Pains with Hypophysis Extract.
22. ARNOLD and SOMMERFELD: Poisonous Quality of Urine in Measles and Other Infectious Diseases.
23. PEISER: Condensed Wet Nurse's Milk in Feeding Infants.
24. BOTCHER: Fibrolysin Treatment in Röntgen Carcinoma.
25. SORMANI: Paradox Sera Reaction in Wassermann Reaction.
26. DUVOIT: Etiology of Tuberculosis of Eye.

September 19, 1912.

27. WESTHALL: Pathology of Pupil.
28. PAL: Action of Cushing on Bionchi and Breathing.
29. SCHWARZ and ZEINER: Biochemical Rays Ration. Experiments with Thorium X.
30. PINKUS: Treatment of Inoperable Carcinoma with Mesothorium and Combined Methods of Treatment.
31. FURSTENBERG and SCHEMEL: Body and Tissue Temperature of Man in Diathermy.
32. ASCOLI: Artificial Pneumothorax after Forlanini.
33. REENSTERN: Cultivation of Lepra Bacillus and Transfer-ence of Leprosy to Apes.
34. ROSENOW: Myoma of Intestines and Dilatation. Diagnosis of Duodenal Ulcer.
35. ALBU: Acute Ulcerative Colitis.
36. JUNGHANS: Proctocol Substitution.
37. WEISS: New Way of Treating Asthma.
38. WOLFF: Remarks on Zell's Method of Treating Carcinoma.
39. BRÖSE: Treatment of Ruptured Ectopic Gestation Sac with Free Hemorrhage.
40. SCHALL: Technical News in Sanitation and Nursing.

September 26, 1912.

41. WITTMACK: Prognosis and Treatment of Tinnitus.
42. ABLIN: Action of Mercury on Spirochetal Diseases.
43. SCHELLER: Hemoglobinophilic Bacteria.
44. MESSERSCHMIDT: Bacteria in Dysentery (Type V).
45. SEIGER: Clinical Experiences with Neuronal.
46. NAGEL-SCHMIDT: Thorium Treatment of Leukemia.
47. LEVINSOHN: Catact Operations.
48. POPOFF: Inhibiting Hemolytic Characters in Luteal Sera and Possibility of Their Use in Serodiagnosis of Syphilis.
49. ROSENSTERN: Hubert in Infancy and Technique of Feeding.
50. CRÉPEL-HORDER: Lipon Hydrasum Bayer, Synthetic Hydrastine Hydrochloride.
51. LUBINSKI: Modified Electrical Auditory Apparatus for the Partially Deaf.
52. STEFFENS: Technique of Anion Treatment.
53. SCHELENBERG: Rapid Röntgen Examination of Thorax.

5. **Dementia paralytica and Birth.**—Löwenhaupt, in reviewing the literature on the subject, finds that very few women suffering from dementia paralytica bear full term living children. In most cases abortion or miscarriage of a dead fetus occurs which is but natural in a luetic infection. He reports two cases, the first a para V, forty-one years old, the other a para VI, forty-two years old. In both cases there was spontaneous delivery of normal full term babies and normal puerperia. The psychic condition gave no indication for rapid delivery, abortion, or artificially induced labor. Bauer and Alzheimer take the same view, since there is no direct relation between pregnancy and dementia paralytica. The patients must be under constant observation, otherwise great harm may re-

sult; they should be placed in a maternity hospital and receive all the attention due to the insane. The child should be taken away from the mother immediately after birth. The uncontrollable excitement of the puerperium should be controlled by morphine, scopolamine, and veronal. The continuous bath is contraindicated because of the danger of infection.

6. **Diabetes and Pregnancy.**—Bingle found 180 cases of diabetes mellitus reported in the literature. The various writers hold two opinions as to the course of action when conception in a diabetic has occurred. The older believe that the complication of diabetes by pregnancy is a most unfortunate occurrence and that pregnancy must be interrupted at the earliest possible opportunity. The other group do not believe in a mutually unfavorable influence of the two factors. The reasons why pregnancy is so rare in diabetes are the diminished or absent libido sexualis, atrophy of the uterus and annexa, bodily weakness, etc. When conception does occur, abortion sets in spontaneously in one third of the cases. The author reports a case of a para VII who, in the seventh month, had sugar and acetone in the urine. Whether diabetes occurred before conception was not ascertainable. Under dietetic treatment sugar and the acetone disappeared without the necessity of interrupting pregnancy. Pregnancy did not influence the dietetically treated diabetes; a full term child was born. After delivery the improvement was more rapid. Whether this was due to a dietetic treatment or to the termination of pregnancy could not be decided upon. Probably both factors have to be considered. In all similar cases the author advises the careful diet. When improvement sets in, there is no indication for interrupting pregnancy; mother and child are safe.

13. **Hexal, New Antiseptic Sedative for the Bladder.**—Boss conceived the idea of combining the strong sedative action of salicylic acid with the bactericidal action of urotropin, the result being hexal. Indications for its use are: 1. Acute and chronic bladder inflammations no matter of what origin. 2. Gonorrheal infections of the posterior urethra in order to avoid bladder infections. 3. In uric acid diathesis and uric acid deposits in the kidney and bladder. Advantages of hexal are: 1. Strong sedative action due to sulphosalicylic acid. 2. Energetic bactericidal action due to formaldehyde and sulphosalicylic acid. Both antiseptics enable the urine to prevent the development of all bacteria, even the most resistant. 3. Marked astringent action due to the union of the sulpho group with the molecule of the salicylic acid. The sulphosalicylic acid precipitates protein and contracts the vessels of the hyperemic mucous membrane of the bladder. Beside administration of hexal, the usual hygienic measures should be observed, such as warm baths and compresses, diet, and rest. Hexal is distinguished from other bladder remedies by its odorlessness, a pleasant lemonlike taste, and ease of administration without an adjuvant. The author has seen no unpleasant side effects from its prolonged use. The dose is one gramme, in powder or tablet form, dissolved in water, three or four times daily.

21. Weak Labor Pains.—Fries, after using hypophysis extract on many patients suffering from labor pains that were diminished in frequency or were of short duration or too weak in force, says: 1. The hypophysis extract is entirely reliable and harmless for increasing the frequency, duration, and power of labor pains, giving good service in the first and second stages of labor when there is no insurmountable obstacle to delivery and when no indication for the immediate evacuation of the uterus is present. 2. In the afterbirth period its action is unreliable and not as good as the ergot preparations. 3. It is not reliable for terminating abortions or for inducing premature labor. 4. The induction of labor and its progress are successful in direct proportion to the nearness of the mother to term. The duration of labor is decidedly increased. 5. The preparation has no toxic action and can be combined with drugs acting on the heart and with the ergot preparations without compromising the action of the latter. It is injected without discomfort and has no local action. 6. The use of hypophysis extract in general practice is most desirable because a series of operative procedures which are not indifferent to the mother may be dispensed with, in particular, the so called "luxury" forceps. 7. The extract has proved its efficacy as a tonic after gynecological operations. Its action on the urinary tract is unreliable.

22. Poisonous Quality of Urine in Measles and Infectious Diseases.—Aronson and Sommerfeld were encouraged in their investigations by those of Pfeiffer, who found that the poisonous quality of the urine is increased in anaphylactic shock, peptone poisoning, after severe burns, and photodynamic injuries, due to an overproduction of bodies which are normally present in very small quantities in the urine. They found: 1. In the urine of patients suffering from measles a constant heat producing dialysable poison is present, which when intravenously injected into rabbits and guineapigs, causes sudden death or severe illness. 2. The injection of two c. c. of urine is sufficient to kill the animals with symptoms identical with those observed in anaphylactic death. 3. The toxicity of the urine is not parallel with the severity of the disease nor with the appearance of the rash and the diazo reaction. The period for the excretion of the poison is variable. 4. The urine in other infectious diseases, typhoid, tuberculosis, diphtheria, and scarlet fever, does not contain the poison. On the other hand, the urine in the infectious exanthemata and some other clinically unclassified diseases has the same effect. 5. The intravenous injection of this urine is a differential diagnostic aid.

28. Action of Caffeine on the Bronchi and on Breathing.—Pal found that caffeine dilates the bronchi of guineapigs. Its action is antagonistic to muscarine, but not the same as atropine, since the latter paralyzes the endings of the vagus, while caffeine stimulates certain branches of the sympathetic nerve endings. Caffeine thus dilates the bronchi and overcomes bronchospasm.

29. Thorium X.—Schwarz and Zehner prove: 1. Thorium x splits up, *in vitro*, lecithin and lipochrome independently of any autolytic process.

This action seems to the authors important in explaining the powerful effects of this radioactive substance in the organism. 2. Beside splitting lecithin, thorium x rays are characterized by an exquisite hemolytic action, also by changing oxyhemoglobin to methemoglobin. 3. Thorium x rays destroy protein. Their action is stronger on nucleoproteid than on albumin.

31. Body and Tissue Temperature of Man in Diathermy.—Fürstenberg and Schemel are the first to measure and explain increased internal heat of the body produced by external heat penetration. They found that with local diathermy the whole body temperature is raised. The greatest increase is in the locally heated portion. The body and tissue temperature, with the exception of the external integument, does not rise proportionately with the intensity of the stream, on the contrary, the temperature is higher with 0.3 ampère than with two ampères. The reason for this lies in the regulating process of the skin reflexly stimulated by the heat thereof.

37. New Way of Treating Asthma.—Weiss is enthusiastic about the effect of a new remedy upon mild and severe asthma attacks. No harm whatever results to the patients as is the case with morphine, atropine, etc. He has used it about 3,000 times, and in only ten cases was a reinjection necessary. He started with the supposition that a stimulus contracting the musculature of the upper air passages must be due to some condition in the nervous system or to the composition of the blood. The condition of the blood depends on the health of the blood forming organs, on the sufficient exchange from lung and skin, on the proper evacuation of the excretory organs, and last, but not least, on the balanced action of the organs of internal secretion. Of the latter we must consider in asthma the thyroid, hypophysis, suprarenals, and the ovaries or testicles. When the secretion of one or more of these is in any way changed, the blood shows an eosinophilia, frequently a lymphocytosis. A direct effect of the disturbed gland action is the slowing of the breathing. The accumulation of the carbon dioxide brings on the asthma attack. The new drug which the author recommends so highly is a sterile, watery solution of suprarenal extract in combination with the extract of the infundibular portion of the hypophysis (aschmolsin), injected subcutaneously. The suprarenal extract in itself is not sufficient. Aschmolsin is put in capsules containing 1.1 c. c. aschmolsin, of which 0.008 gramme is suprarenal extract, and 0.04 hypophysis extract. The action of the drug is most likely due to the addition of the missing secretion to the blood, which in turn brings about the cessation of the attack. The action of the drugs hitherto used is unphysiological and sedative only. Aschmolsin is physiological, and has no unpleasant side effects. This method of treatment is not applicable in those cases of asthma due to causes other than those mentioned.

45. Neuronal.—Seige states: 1. Neuronal is a good and harmless sedative and hypnotic which deserves equal rank with other drugs of its nature. The dose in mild cases is from 0.5 to 1.0 gramme, in severe cases from two to three grammes. 2. It

is important in threatening epileptic conditions such as dream states; then, too, its combination with amylen hydroxide exerts a marked sedative action in chronic maniacal excitement.

ZENTRALBLATT FÜR CHIRURGIE.

October 5, 1912.

1. M. TIEGEL: Value of Tracheal Insufflation in After Treatment of Tracheotomy.
 2. E. UNGER: Diagnosis of Acute Perityphlitis by Means of Auscultation.
- October 12, 1912.
3. C. VIDAKOVICH: Simple Dressing to Prevent and Cure Prolapse of Rectum in Children.
 4. K. VOGEL: Operation for Floating Kidney.
 5. TH. KOELLIKER: Typical Fracture of Shoulder Blade.

1. Tracheal Insufflation after Tracheotomy.—Tiegel reports a case in which breathing was very seriously impeded after a tracheotomy by an accumulation of mucus in the bronchi, to such a degree that the child was really in *extremis*. Other means to dislodge the mucus having failed, he introduced a small Nelaton catheter through the cannula, as far as possible down the trachea, and forced through it a current of oxygen. The result was excellent. A mass of mucus escaped from the cannula beside the catheter, and, as the latter was withdrawn, a compact clot of mucus, as large as a pencil and several cm. long, was found adhering to it and seized with forceps. The catheter was introduced several times, each time with the same result, so that a considerable quantity of fluid mucus and a number of firm plugs were removed. Each introduction was also followed by a cough that aided in evacuating the mucus. Breathing became good, the cyanosis disappeared, and the pulse returned. Eventually the child recovered.

ZENTRALBLATT FÜR GYNÄKOLOGIE.

September 21, 1912.

1. O. V. HERFF: Tear of Tentorium by Disengaged Head.
2. E. LIEBICH: Hematomyelia as Complication of Eclampsia.
3. J. KOCKS: Crime and Punishment.

September 28, 1912.

4. O. V. HERFF: Treatment of Fractures of Skull in Newborn.
5. O. PANKOW: Treatment of Retroflexion of Uterus by Shortening Round Ligament.
6. W. BENTHIN: Indications for Operative Treatment of Puerperal Pyemia.
7. EKSTEIN: Reform of Practice of Midwifery.

2. Hematomyelia as a Complication of Eclampsia.—Liebich reports that of the sequelæ of eclampsia, psychoses, aphasia, amauroses, and hemiplegia are the most common. The latter condition is due to larger or smaller hemorrhagic areas in the left half of the brain. Hemorrhage into the substance of the spinal cord has apparently not been described until this case of the author. The diagnosis was made from a careful study of the patient, a woman of twenty-nine years, but as it did not go on to a fatal issue no examination of the cord was possible.

6. Puerperal Pyemia.—Benthin reports two cases of puerperal pyemia in which careful bacteriological examinations were made periodically of the blood and secretions. This was done to determine whether or not the findings could be used as an aid in indicating operative treatment. He believes that a careful bacteriological examination of the blood may be of such value, the prognosis being unfavorable in those instances where the bacteria are constantly present.

CORRESPONDENZ-BLATT FÜR SCHWEIZER AERZTE

October 1, 1912.

1. WILHELM LÖFFLER: Chylascites and Chylothorax.
 2. HABERLIN: Surgical Treatment of Cancer of Bladder.
- October 10, 1912.
3. MOSES GELBART: New Counting Method for Eosinophile Cells.
 4. O. ABREIN: Pottenger's Teachings on Muscle Changes.
 5. F. SIEGFRIED: New Pocket Meter for Blood Pressure.
- October 20, 1912.
6. ADOLF OSWALD: Basedow's Disease.
 7. E. BERNOLLE: Use of Adrenal Preparations.

3. New Counting Method of Eosinophile Cells.

—Gelbart has experimented with Dunger's method of counting eosinophile cells. Basing his observations upon this method, he concludes that the eosinophile cells are elements which react very well, especially in acute, infectious diseases, where their appearance and action can be used diagnostically as well as prognostically. Generally, it may be stated that eosinophilia in infectious diseases is favorable for the prognosis, absence of eosinophile cells unfavorable. Thus, in the beginning of typhoid the eosinophiles are absent, but in favorable cases they will reappear in the third or fourth week of the disease, while in poor cases they remain absent; the bad cases of pneumonia show absence or severe diminution of eosinophiles, while in favorable cases the diminution is only slight; if a case of scarlet fever starts in with a diminution of the eosinophiles the prognosis is poor through complications; an increase which is observed from the beginning of the attack gives a favorable prognosis, and such increase often remains for weeks or months after the disappearance of the disease.

PARIS MÉDICAL.

October 12, 1912.

1. ETIENNE: Clinical Methods of Study of Heart Values.
2. DOPTER: Parameningococcic Infection.
3. ALBERT WEIL and CARL RÖDERER: Frequency of Abscess in Pott's Disease.
4. A. SCHWARTZ: Iliac Hematomata.

2. Parameningococcic Infection.—Dopter, three years ago, named the parameningococcus, which resembles the meningococcus in every particular save that it does not agglutinate with antimeningococcic serum. The symptoms it produces are the same, but a meningitis of which it is the cause has hitherto been invariably fatal. It is noted during the cold weather, so fertile in rhinopharyngeal inflammations, and it begins its career in the nasopharynx. By making a culture of horse serum. Dopter has obtained a product which he has used successfully in several cases in children.

4. Iliac Hematomata.—Schwartz points out the frequency in hemophilics of a sanguineous infiltration in the iliac fossa, particularly in the sheath of the psoas iliacus. Such an infiltration has produced symptoms which have led to an operation for a suspected appendicitis. Such hematomata occur, however, in other than hemophilic subjects. In operating Schwartz has found an appendix completely separated from the cecum, the artery having ruptured during the process and so produced the blood tumor. In another case, diagnosed as appendicitis, he found two hematomata, one retroperitoneal, the other retrorenal. Subsequently the patient passed in the urine a large amount of pus which was found to contain tubercle bacilli, but the actual origin of the tumors is still in doubt.

When such tumors are due to hemophilia, yet have led to a laparotomy for a supposed appendicitis, the mistake is likely to have very serious consequences.

PRESSE MÉDICALE

October 2, 1912.

1. H. ROGER: Paradox of Intestinal Acholia.
2. M. GUÉRIÉ: New Form of Mutilation Practised for Purpose of Escaping Military Service: Artificial Testicular Ectopy under Skin of Inguinal Region.
3. LÉON BERNARD, R. DEBRÉ, R. PORAK: Mechanism and Prophylaxis of Untoward Occurrences in Antituberculous Serotherapy.
4. ALBERT MARTINET: Diuretic Action of Digitalis.
5. MATHÉRON: Mechanism of Pulmonary Emphysema.

October 5, 1912.

1. **Paradox of Intestinal Acholia.**—Roger refers in these terms to the hitherto inexplicable fact that while exclusion of bile from the intestine results in bacterial pullulation and increase of putrefactive processes, tending to show that an antiseptic influence previously operative in the intestine has thereby been removed, addition of bile to bacterial cultures *in vitro* shows it to be devoid of antiseptic power. The author reports experimental work which leads him to conclude that bile, while not preventing bacterial growth, prevents the action of bacterial ferments, either by interfering with their production or by neutralizing the effects. Another, less important influence exerted by the bile on the intestinal flora is that it favors the development of certain organisms, such as the colon bacillus, to the detriment of others, in particular the anaerobes, which are the chief promoters of putrefaction and toxic effects.

3. **Accidents in Serum Therapy of Tuberculosis.**—Bernard, Debré, and Porak demonstrated, by a precipitin reaction, that ingestion of horse meat causes the appearance in the blood for a period of fifteen minutes, beginning fifteen minutes after the meat is taken, of heterogeneous—i. e., horse—albumins, and are inclined to lay upon such "alimentary inoculation" the responsibility for anaphylactic phenomena frequently developing after treatment of tuberculous patients with Marmorek's, Maragliano's, or other similar sera. All patients in whom the authors witnessed these untoward results had previously been given horse meat for therapeutic purposes. Rectal administration of Vallée's anti-tuberculous serum in thirty-three cases caused no unfavorable effects whatsoever, although in these patients a similar passage of heterogeneous albumins into the blood was found to occur. The authors conclude that rectal administration in some way alters the conditions of anaphylaxis, and urge resort to it when serum is given in tuberculous cases.

4. **Diuretic Action of Digitalis.**—Martinet concludes that the diuresis induced by digitalis is the result both of a stimulating action on the heart, manifested in an increase of the pulse pressure—i. e., of the difference between the systolic and diastolic pressures—and of a vasodilator action in the kidneys, most clearly indicated by a diminution in the diastolic pressure. The drug is thus both indirectly and directly diuretic. Digitalis tends to cause an increase of the viscosity of the blood; this, after the resorption of edema, tends automatically to check diuresis, which might otherwise become excessive.

5. **Mode of Production of Pulmonary Emphysema.**—Malibrán maintains that where lung emphysema is due to mechanical influences it is always excessive, expiratory effort rather than forced inspiration which is the determining factor.

SEMAINE MÉDICALE.

October 9, 1912.

- C. FRUGONI: Has Carotid Gland of Luschka a True Internal Secretion?

Has the Carotid Gland a True Internal Secretion?—Frugoni reports experiments in rabbits which showed that extracts of the carotid glands of calves, injected intravenously, are capable of causing rapid death. The respiration and cardiovascular functions are strongly depressed, though after death the auricles may continue to beat for some minutes. Marked leucopenia and loss of coagulability of the blood are observed. While these phenomena may all be reproduced with extracts of other organs, such as the lung, thymus, and lymphatic glands, carotid gland extracts also show a more characteristic action, viz., that on the blood pressure, which is at first slightly raised, then considerably depressed for a prolonged period; slowing and increased amplitude of the pulse are simultaneously noted. The lowering of pressure is not due to depression of the medullary vasomotor centre, but of the vessel walls. Repeated injections of carotid gland extract do not cause pathological changes in the vessels. Frugoni concludes that it cannot at present be definitely stated that the carotid gland elaborates a distinctive internal secretion.

REVUE DE CHIRURGIE

August, 1912.

1. M. PATEL and I. MURARD: Spontaneous Ulceration of Branches of External Iliac in Appendicular Abscesses.
2. G. COYR and E. BRESSOT: Dyspeptic Disturbances of Biliary Origin.
3. L. SARAGON and H. ALAMARIN: Recent Methods in Treatment of Grave Cicatricial Stenoses of Esophagus.
4. V. CARLIER and MAURICE GÉRARD: Surgical Anatomy and Surgery of Horseshoe Kidney (Concluded).
5. J. DUCLOS: Grafting of Entire Joints in Man (To be continued).

1. **Ulceration of Branches of External Iliac in Appendicular Abscess.**—Patel and Murard report two fatal cases of hemorrhage from the ilio-lumbar artery or its tributaries, both occurring some days after drainage of an appendicular abscess. Such accidents may occur where the abscess lies in the iliac fossa or retrocecal space, and in most cases so far reported the drain inserted has proved to be an undoubted factor in the vascular ulceration, acting both mechanically on the vessel walls and through ischemia of these walls due to pressure on the vasa vasorum. In some cases, on the other hand, the condition has been due to purulent infiltration of the vessel and thrombosis of the vasa. In most instances coughing or other muscular effort has been the exciting factor in the rupture. Effectual treatment can be carried out only where the rupture and hemorrhage take place gradually. Under these circumstances a finger should be introduced in the wound, without previous removal of the drain, the vessel compressed digitally, and ligation then effected after drawing the margins of the wound apart. By way of prophylaxis, drains in appendicular abscess should be placed superficially wherever possible; if the abscess cavity is deep the

drains should at least be removed from the neighborhood of vessels and surrounded with gauze.

2. Dyspeptic Disturbances of Biliary Origin.—Cotte and Bressot lay stress on infection as being the chief cause of gastrointestinal disorder in the presence of gallbladder disease, and discount the reflex or hysterical relationship hitherto generally alleged. Although the secondary gastric and intestinal phenomena are extremely variable in nature and severity, the authors find it possible to distinguish, clinically, two classes of cases. Most numerous are the cases of cholelithiasis showing gastrointestinal symptoms in the intervals between attacks of colic, e. g., pain, coryzalike phenomena, and bilious vomiting upon awakening in the morning, attacks of indigestion after slight dietary indiscretions, chronic constipation or periodical diarrhea, all of moderate severity only. In the second type there is evident anorexia, together with coated tongue, slow and difficult digestion, meteorism, epigastric discomfort shortly after meals, and signs of gastric dilatation; sometimes there is pain attaining its maximum three or four hours after meals, accompanied by pyrosis and vomiting; finally, in a few cases there is a pseudoulcerous condition, with pain and hemorrhage, or a combination of symptoms suggesting pyloric stenosis. Where the primary gallbladder condition is latent the true cause of the gastric symptoms is likely to escape detection. In reality, there exists an infective process which has extended to the stomach, intestine, or pancreas, and incidentally caused the formation of adhesions. Wherever the presence of involvement of the biliary apparatus is ascertained, treatment by salicylates, sodium benzoate, quinine, and alkalies should first be tried. Cold enemata, small frequently repeated doses of sodium sulphate, olive oil, glycerin, or bile extracts may be used to stimulate the flow of bile. With suitable diet and a stay at a health resort, these measures will often suffice to subdue the biliary infection. Where dyspepsia persists, however, and if it occurs in the intervals between attacks of biliary colic, operative intervention is necessary. The results obtained with gastroenterostomy in these cases have been disappointing, even where the symptoms seemed exclusively those of pyloric stenosis. Cotte and Bressot consider cholecystectomy the operation of choice. In addition, the appendix should be removed if diseased, transverse colostomy or ileosigmoidostomy performed if there is enterocolitis or pericolicitis, and gastroenterostomy practised if pyloric or duodenal stenosis is found present.

4. Horseshoe Kidney.—Carlier and Gérard, in the course of a lengthy article, emphasize the value of palpation in the diagnosis of this condition. In a few cases palpation from the vagina has led to the detection of the lower border of a horseshoe kidney situated unusually low down. In cases where a portion of the organ has to be removed the authors warn against the use of the thermocautery over the cut surface. The section should be made between clamps and hemostasis secured by the apposition of flaps of renal tissue or by means of isolated sutures; in certain cases the stump may be ligated *en masse* or the vessels supplying the isthmus tied.

ROUSSKY VRATCH.

July 28, 1912.

1. N. O. ZIBER-SHUMOVA: Hydrolysis of Tubercle Bacillus.
 2. W. W. MAKIMOFF: Surgical Treatment of Severe Remaining Effects of Infantile Paralysis.
 3. G. A. RUBENETZKY: Arrhythmia perpetua.
 4. W. W. FRIZKE: Malignant Granuloma of Sternberg.
 5. W. A. MERKURJEFF: Influence of Bacteria on Action of Salvarsan.
 6. PH. I. MALOFF: Congenital Anomalous Position of Hepatic Ligaments.
 7. A. S. SOLOVITZOFF: Agglutination of Bacteria of Chicken Cholera.
 8. L. L. SHOTENSTEIN: Tertiary Syphilitic Fever.
- August 4, 1912.
9. A. G. RADZEVSKY: Removal en masse of Cancerous Gland, Prostate, and Seminal Vesicles.
 10. P. V. RISTER: Action of Quinine and Sodium Salicylate on Middle Ear.
 11. I. F. TOLOTCHINOFF: Preliminary Investigation of Method of Conditional Reflexes; Basis for Term "Conditional Reflexes."
 12. E. L. KLUTCHIEFF: Role of Syphilis in Causation of Dementia præcox.
 13. M. A. ZAUSAITOFF: Therapeutical Application of Hypnosis.
 14. D. A. SVITZIEFF: Chondroma of Orbit.
 15. I. S. KRIVONOSOFF and V. A. PRIMOJEFF: Reconstruction of Lower Eyelid.
 16. V. N. PARIN: Elephantiasis of Mammary Glands.

1. Hydrolysis of the Tubercle Bacillus.—Ziber-Shumova found that weak solutions of hydrogen peroxide dissolved tubercle bacilli. She suggests as a practical application the use of 0.5 to one per cent. or even one to 1,000 of peroxide of hydrogen in the treatment of tuberculous lesions which are accessible to direct applications of this antiseptic and hydrolytic agent.

5. The Toxicity of Salvarsan.—Merkurjeff concludes from a series of experiments on animals that the presence of dead bacterial bodies in a solution of salvarsan does not increase its toxicity when introduced intravenously, as asserted by Wechselmann. He found that the introduction into the circulation of a plain saline solution will sometimes produce a temporary rise of temperature. The introduction of dead bacterial bodies also causes a rise of temperature, which, however, does not run parallel with the dose.

10. The Effect of Quinine and Salicylates on the Middle Ear.—Rister found experimentally that the toxic effects of quinine and sodium salicylate are not limited to the nerve elements. Quinine acts as a systemic poison, producing degenerative changes in the tissues, as the stria vascularis. Sodium salicylate acts in a similar manner, but in a milder degree.

11. Digestive Reflexes.—Tolotchinnoff found that when dogs with artificial salivary fistulæ are shown dry bread at a distance the secretion of saliva takes place at once. The repetition of this irritation, after a pause, however, is followed by a diminished secretion, which finally stops and no longer responds to this form of irritation. The reflex is reestablished if the food is admitted to the mouth. This reflex, which the author calls "conditional," is similar to the patellar reflex excited by a mere attempt at striking the patellar ligament or the closing of the eyelids when an object is suddenly brought in front of the eyes.

13. Hypnotism as a Cure of Alcoholism.—Zausaitoff has employed for the past eighteen years hypnotic suggestion in 1,284 cases of alcoholism, principally chronic. Favorable results were obtained in eighty per cent. of the cases. He gives a number of case histories, showing the rapid effect and permanency of cure. In view of the ease of application and freedom from any bad effects, the

author urges the general employment of this method.

16. Elephantiasis of the Right Breast.—Parin reports the case of a woman, thirty-eight years old, in whom developed enlargement of the right breast preceded by symptoms of acute mastitis. In three months the breast assumed an enormous size, reaching the umbilicus. It remained stationary until nine months later, when it was removed. The breast weighed 1,310 grammes and was twelve cm. in diameter.

BRITISH MEDICAL JOURNAL

October 19, 1915.

1. J. S. FAIRBAIRN and J. M. WYATT: Maternity Ward at St Thomas's Hospital.
2. EMILY H. SIEDEBERG: Significance of Albuminuria in Pregnancy.
3. H. CHAPPLE: Persistent Occipitotransverse Position.
4. A. W. RUSSELL: Universal Standard in Observation of Morbidity of Childbed.
5. F. MUXON: Treatment of 1,305 School Children.
6. L. BRUNTON: Transitory Bigeminal Pulse.

2. Albuminuria in Pregnancy.—Siedeberg considers the significance of the presence of albumin aside from the subject of eclampsia, and analyses 1,127 cases of pregnancy, in which there were 280, or 25.6 per cent., with albumin. Comparing the albumin free cases with those showing albumin, he finds that among the latter group all complications are more numerous. There was a history of previous miscarriage in a greatly larger percentage of the albumin cases than in those free from albumin. Among those without albumin there were 0.35 per cent. of stillbirths at term, while there were 4.8 per cent. among the others. Ante partum hemorrhage occurred in 6.9 per cent. of the albuminous patients and in only 1.3 per cent. of the others. There was 6.2 per cent. of morbidity in the patients free from albumin and 19.0 per cent. in those having albumin. The fetal morbidity and mortality was higher in the case of those whose mothers had albumin. In return cases it is noteworthy that in the same mother there was a much greater likelihood of the development of some abnormality during the pregnancy or pregnancies which were associated with the occurrence of albumin than in those in which this did not appear. Siedeberg finds that early discovery of the presence of albumin and adoption of proper hygienic and dietetic measures is capable of causing a great reduction in the subsequent development of later abnormalities.

3. Occipitotransverse Presentation.—Chapple describes the occurrence of a transverse position of the head in the cavity of the pelvis just above the outlet. The occiput may lie either to the right or to the left. The condition causes an obstruction to the further advance of the delivery and may be easily corrected by an application of the forceps in the oblique diameters of the pelvis with their pelvic curve toward the child's occiput. Chapple further calls attention to the neglect of a due consideration of the diameters of the pelvic outlet, particularly with regard to the subpubic angle which, if narrow, greatly shortens the anteroposterior diameter and at the same time causes a longer diameter of the fetal head to present in its rotation out of the pelvis in the normal mechanism.

6. Bigeminal Pulse.—Brunton reports a case in which there appeared, under the influence of slight excitement, a transitory bigeminal pulse. The

condition was not present when the patient was quiet. There was no other sign of abnormal cardiac action. He suggests that the appearance may have been due to the occurrence of two nonsynchronous rhythms at this time, the one overlapping the other so as to give the appearance of a true bigeminal pulse.

LANCET.

October 19, 1915.

1. H. MACNAUGHTON-JONES: Surgery of Peritonium.
2. L. ROGERS: Amebic Colitis in India.
3. A. M. MARTIN: Injuries to Semilunar Cartilages.
4. G. MANN and J. G. GAGE: Changes Induced in Blood by Feeding.
5. C. HIGGINS: Double Cataract.
6. J. B. SLATTERY: Actinomycosis in Tuberculous Subjects.
7. S. G. LUKER: Rupture of Hemorrhagic Corpus luteum.

2. Amebic Colitis.—Rogers finds that climatic conditions exert considerable influence upon the incidence of amebic colitis in India. It is very prevalent in damp but comparatively cool climates, reaches its maximum in damp and hot regions, and declines in the hot and dry areas. The seasonal variation follows along similar lines, the hot and rainy months showing the greatest prevalence, the very dry months the lowest. The differential diagnosis of amebic and bacillary dysentery, or, as Rogers prefers to call the former, amebic colitis, is comparatively easy. When the ameba is the cause the diagnosis may often be made clinically by the presence in the very acute cases of very tender, sausage-like thickenings in the large bowel. Separate pieces of rosy blood stained mucus constitute nearly the entire stool in the amebic form, while mucus like the white of egg is characteristic of the bacillary disease. The discovery of the ameba is generally a very simple matter by spreading the mucus under a cover glass and examining with a one sixth lens. When the amebas are scanty, which is rare, the addition of a drop of one per cent. aqueous methylene blue to the fragment of mucus stains the pus and epithelial cells, while the amebas resist the stain for a time and retain their activity. The specimen thus prepared may first be searched by the very low power, for the amebas stand out as brilliant, refractile, motile bodies in the blue background. High power examination is required for confirmation. Rogers then proceeds to compare the ipecacuanha and emetine treatments of the disease (see this JOURNAL for September 14th, p. 551).

3. Semilunar Cartilages.—Martin has treated 449 cases of this injury and is not in accord with the usual idea that there occurs a separation of the cartilage from its bony attachments. He found that the common condition was a partial splitting of the cartilage with a displacement of the fragment. The only successful treatment was operative removal of the mobile piece.

4. Blood Changes in Feeding.—Mann and Gage studied the influence of protein food on the blood cells in man and in frogs and found that during the digestion period there was a marked increase in the intensity of staining of the nuclei in all the white cells; the rim of cytoplasm of the lymphocytes became narrower; the leucocytic granules decreased both in size and number; the leucocytes may also show a decrease in size. They believe that the increased depth of staining in the nuclei is due to the absorption of protein food materials with a consequent increase of the nucleoprotein content

of the cell nucleus. The authors believe that the granules in the white cells are zymogen granules which decrease in number and size during feeding owing to their exhaustion in the processes of nutrition of the individual cell.

6. **Actinomycosis in Tuberculosis.**—Slattery reports three cases, two of the lung and one of the cervical glands, in which actinomycosis developed in patients with active tuberculosis. The exhibition of large and increasing doses of iodide led to a cure of the condition in all three. The diagnosis should not be very difficult, but there may be confusion with syphilis which is further deepened by the prompt response of actinomycosis to iodide treatment.

7. **Rupture of Corpus luteum.**—Luker's patient presented all of the usual symptoms of a ruptured ectopic gestation sac and it was not until the operation that the condition was found to have been due to the rupture of a hemorrhagic corpus luteum into an intraligamentary cyst. Recovery followed the removal of the abnormal parts.

BOSTON MEDICAL AND SURGICAL JOURNAL.

October 24, 1912.

1. WILHELMINE G. WRIGHT: Muscle Training in Treatment of Infantile Paralysis.
2. H. W. MARSHALL: Arthritic Disease.
3. O. R. T. L'ESPERANCE: Excretion of Formaldehyde by Kidney of Patients Taking Urotropin: Study of Burnam's Test.
4. ARTHUR T. CABOT: Injury of Vena cava during Removal of Pyelonephrotic Kidneys.
5. ERNEST BOVEN YOUNG: Uterovaginal Fistula.
6. A. L. CRUTE and A. H. CROSBIE: Mucous Cancer of Bladder.

3. Excretion of Formaldehyde by the Kidneys.

—L'Esperance gives the following conclusions: Formaldehyde appears in the urine in only fifty-two per cent. of patients taking urotropin. The reaction of the urine is of no importance. Alkalies, taken with or in combination with urotropin, have no effect on excretion. The duration of the excretion of formaldehyde is about from four to six hours. An increase of dose does not affect excretion in negative urines. Urotropin is practically symptomless in an average dose. The urine of all patients taking urotropin should be tested for formaldehyde. Patients not excreting formaldehyde are symptomless, regardless of the amount of urotropin taken.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

October 26, 1912.

1. EDWARD D. FISHER: Injuries of Spinal Column, with and without Fracture and Dislocation.
2. JOSEPH S. NEFF: Typhoid Fever in Philadelphia.
3. WILLIAM R. STOKES and F. W. HACHTEL: Some Results of the Treatment of the Baltimore Drinking Water by Calcium Hypochlorite.
4. W. T. SENEWICK: Fallacy of Testing Food Materials by Animal Inoculation.
5. W. E. DEEKS: Hitherto Unrecognized Six Day Fever in Ancon, Canal Zone.
6. CHARLES K. MILLS and EDWARD MARTIN: Aphasia and Agraphia in Some Practical Surgical Relations.
7. H. E. JORDAN: Need for Genetic Studies of Pulmonary Tuberculosis.
8. DOUGLASS W. MONTGOMERY: Psoriasis. Value of Baths and of Maceration in Treatment.
9. J. R. MYRLIN and H. C. BAILEY: Protein Metabolism in Late Pregnancy and Puerperium.
10. OTIS B. NESBIT: Books as Carriers of Scarlet Fever Infection.
11. KARL K. KOESSER: Recent Advances in Knowledge of Scarlet Fever.
12. CREIGHTON WELLMAN and FOSTER M. JOHNS: Artificial Culture of Filarial Embryos.
13. CHARLES A. FISBERG: Surgery of Intramedullary Affections of Spinal Cord.
14. PAUL G. WESTON: Immunization against Typhoid.
15. B. O. WORKS: Quantitative Examination of Albumin in Sources in Pulmonary Tuberculosis.
16. S. BARRINGER: Unilateral Kidney Hemorrhage Caused by Injection of Human Blood Serum.
17. V. M. REICHARD: Spontaneous Hemorrhage of Newborn with Recovery.

18. M. J. PERKINS: Diphtherine Serum Used to Control Bleeding in Hemophilia.
19. E. E. CLAYBROOK: Hemophilia.
20. MARY O'MULLIVY: Carbon Monoxide Poisoning with Acute Symptoms.

1. **Injuries of the Spinal Column, with and without Fracture and Dislocation.**—See this JOURNAL for June 5th, page 1224.

2. **Epidemic of Typhoid Fever in Philadelphia.**—See this JOURNAL for June 15th, page 1295.

3. **Some Results of the Treatment of the Baltimore Drinking Water by Calcium Hypochlorite.**—See this JOURNAL for June 15th, page 1295.

5. **Hitherto Unrecognized Six Day Fever in Ancon, Canal Zone.**—Deeks makes report of a new fever in the canal zone, of which the following are the chief features. The disease is highly infectious and the period of infection probably precedes the onset of the fever, no cases having occurred in hospitals by contact. There is an absence of any constant or characteristic prodromata. The onset is abrupt, with chills or chilly feelings, and an initial temperature after the chill of from 101° to 104° F. The course of the disease is run in six days, with slight morning remissions and a more or less abrupt fall. In some cases the temperature was highest the day or second day before the sudden defervescence. When the temperature falls, it generally remains normal. The pulse and respiration remain practically normal. Enlargement of the spleen is usual. The blood picture is not affected. Nephritic irritation is indicated by the presence of a trace of albumin and a few hyaline and granular casts. During the febrile action anorexia is present and a considerable after depression. The period of incubation is about ten days. This disease is differentiated from malaria by the absence of parasites, the temperature curve, and the blood picture; from influenza by the absence of coryza and lung complications, by the blood picture, and the definite course; from typhus by the duration of the illness, the milder symptoms, and the absence of rash; from typhoid and paratyphoid by the onset, febrile course, abrupt termination, and cultural blood findings. The Widal reactions are negative. The disease resembles the exanthemata, without the constant rash, because of the definite onset and definite course. Normal temperature may always be predicted on the sixth day. The disease has resisted all medication thus far, and is probably identical with the seven day fever of Castellani.

8. **Psoriasis; Value of Baths and of Maceration in Treatment.**—Montgomery concludes that baths of pure warm water are decidedly beneficial to psoriasis. When the skin is in an erethic, irritable condition sulphur baths, made by the addition of potassium sulphide, may act badly, while tar and potassium permanganate are valuable additions. The blander salts, such as sodium bicarbonate, boric acid, and sodium chloride, probably decrease the effect of the bath, as their addition renders the water less osmotic. An action similar to that produced by the baths is observed after maceration under impermeable coverings.

9. **Protein Metabolism in Late Pregnancy and the Puerperium.**—Murlin and Bailey conclude that the nitrogen fractions of the urine in the last

months of pregnancy differ but slightly from those in the nonpregnant. In the last month of pregnancy normal women may have an ammonia nitrogen as high as seventeen per cent. (after catharsis), and a combined aminoacid and indetermined nitrogen of ten per cent. Little value should attach to percentage figures alone, for the total nitrogen depends on the amount of food absorbed and this is affected by intake, nitrogen retention, catharsis, etc. The nitrogen partition may be normal, even up to and for twenty-four hours following the development of convulsions, even with all the clinical signs of preeclampsia. As an evidence of metabolic processes the nitrogen partition cannot be accepted as an index to the preeclamptic or the eclamptic condition. Structural alteration of the liver and finally alterations in the metabolic functions of that organ may be the result of the toxemia which ultimately leads to eclampsia, rather than the cause of the toxemia, for all that uranalysis shows.

10. **Books as Carriers of Scarlet Fever Infection.**—See this JOURNAL for June 15th, page 1295.

11. **Recent Advances in Our Knowledge of Scarlet Fever.**—See this JOURNAL for June 8th, page 1218.

13. **Surgery of Intramedullary Affections of the Spinal Cord.**—See this JOURNAL for June 8th, page 1224.

15. **Quantitative Examination of Albumin in the Sputum in Pulmonary Tuberculosis.**—Works finds that the authorities agree on several points: That albumin is usually present in the sputum of pulmonary tuberculosis; that the presence of albumin in the sputum with a positive von Pirquet reaction would, in doubtful cases, justify a positive diagnosis of pulmonary tuberculosis; that the intensity of the albumin reaction is, generally, proportional to the stage of the disease; and that albumin occurs in the sputum of certain other pulmonary affections (pneumonia, edema, pleurisy with effusion, and emphysema with dilated heart). The writer gives in full the technique of the examination with results of its use in 168 cases. He concludes that the method requires so little time and is so easy to apply, as to make it entirely practicable, even outside sanatoria. All patients with active pulmonary tuberculosis give a positive albumin reaction; arrested cases never have more than a trace of albumin or may yield negative reaction. The active cases, whether incipient, moderately advanced, or far advanced, show 0.2 per cent. or more albumin, while the improved (slightly active) cases usually show less than 0.2 per cent. albumin.

MEDICAL RECORD.

October 26, 1912.

1. BRANDRETH SYMONDS: Some Studies in Family History.
2. HENRY L. TAYLOR: Progressive Curvature of Radius (Madelung's Deformity) Corrected by Osteotomy.
3. MAX A. BAHR: Some Clinical Observations in Huntington's Chorea.
4. B. ROSENBLUTH: Seventh Nerve Paralysis Secondary to Artificial Congestion.
5. JOHN C. WARBRICK: Indicanuria and Chlorides.
6. GEORGE W. VANDEGRIFT: Treatment of Interstitial Keratitis by Salvarsan.

4. **Seventh Nerve Paralysis Secondary to Artificial Congestion.**—Rosenbluth reports two cases in explanation of the mechanism of the production of the classical Bell's paralysis. In these cases there is no difficulty in tracing the neural le-

sion to the induced congestion and hyperemia at a part of its course where the nerve compressed itself against the bony edge of the stylomastoid foramen. The severity of the neuritis was greater, for the reason that the artificial congestion was more severe and of longer duration than occurs in a paralysis resulting from a simple cold. The etiology of the disease indicated to the writer the proper treatment. Ergot, given with a view of vasomotor constriction, yielded far better results than the usually prescribed sodium salicylate, and when given during the first five days (before there is a reaction of degeneration) positively cures the case, but the ergot must be good and given in large amounts (teaspoonful every three hours for five days). All other adjuvants of neurological practice should be fully used.

5. **Indicanuria and the Chlorides.**—Warbrick has found that a good deal of indican may be present in the urine where the chlorides are high and the specific gravity is high at the same time. It is also true that with a high specific gravity and a high chloride index only a small amount of indican may be found. Further, with a high specific gravity of urine (1.030), and with the chlorides not very high a good deal of indican may be found with a low specific gravity (1.010), and a low chloride index (15–232); under the maximum daily amount a good deal of indican may be present. In many cases no indican will be found, even when the chlorides are high and also when they are low. It apparently follows that indican is not so likely to be present where the specific gravity is low along with a small amount of chlorides, so we deduce, as a corollary, that the amount of indican present in the urine is directly proportionate to the amount of chlorides, but as the latter seem to be governed mostly by various bodily conditions it may be the amount of indican is directly proportionate to such conditions as diet, exercise, disease, the free ingestion of fluids, etc.

6. **Treatment of Interstitial Keratitis by Salvarsan.**—Vandegrift states that nothing is nearly so efficient as salvarsan in the treatment of interstitial keratitis. Although cure with mercury is beyond a doubt, a longer time is necessary, during which connective tissue would have been deposited in the cornea, and the ultimate vision have been much worse. Salvarsan works so quickly that connective tissue has not time to form. In the writer's cases, also, the corneal infiltrate, even after subsidence of inflammatory symptoms, has been absorbed to a much greater degree than with mercury. Salvarsan will not cause the disappearance of the old scars of a past interstitial keratitis, but if used when the least trace of acute symptoms is present it will check the inflammation, absorb the infiltrate, and prevent further deposit of connective tissue.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES September, 1912.

1. E. LIBMAN: Endocardial Lesions of Subacute Bacterial Endocarditis, with Particular Reference to Healing or Healed Lesions.
2. GEORGE BAHR: Glomerular Lesions of Subacute Bacterial Endocarditis.
3. CHARLES H. LAWRENCE, JR.: Relation of Hypertension to Urinary Excretion.
4. EDWARD A. SPITZKA and HENRY E. RADASCH: Brain Lesions Produced by Electricity Observed after Legal Electrocution.
5. JOHN W. BRANNAN: Hospitals and Typhoid Carriers.

6. JAMES G. CALLISON: Therapeutic Use of Vaccines in Typhoid Fever.
7. JAMES M. ANDERS: Stenosis of Duodenum.
8. HANS J. SCHWARTZ: Complement Fixation Test in Differential Diagnosis of Acute and Chronic Gonococcal Arthritis.
9. H. V. WURDEMANN: Free Eye Infirmary: Suggestions as to Reforms in Ophthalmic Hospitals, Dispensaries, and Schools.
10. EDWARD L. HUNT: Treatment of Locomotor Ataxia.
11. THOMAS W. HASTINGS: Tuberculin Therapy in Surgical Tuberculosis.

1. **A Study of the Endocardial Lesions of Subacute Bacterial Endocarditis.**—Libman, from the study of an unusually large number of cases during the last ten years, has become impressed with the great frequency of the condition. The lesions found in cases of subacute bacterial endocarditis in which the mitral valve is involved, are characteristic. Three stages may generally be demonstrated: The bacterial, the bacteria free healing, and the bacteria free healed stage. There is a tendency for the vegetations to spread up on the left posterior wall of the auricle more than on the valve itself. The chordæ tendinæ attached to the posterior flap are more or less covered by vegetations. The anterior flap is also nearly always involved, and the vegetations grow down over the chordæ tendinæ. Occasionally the chordæ are ruptured. The vegetations are yellowish, pinkish, or reddish in color and vary in size. Later they become firmer and grayish in color. When the aortic valves are involved the lesions are not usually characteristic and their extent is most variable. Patients with healing or healed lesions proceed as follows: They may acquire a nephritis and die of uremia; they may present the picture corresponding to that of "chronic endocarditis with fever"; some present a clinical complex that has apparently been entirely overlooked, of which the striking feature is a peculiar diffuse brown (sometimes quite dark) color of the face, the rest of the body being pigmented or not, an evident valvular lesion, anemia, enlarged spleen, and usually tenderness of the lower sternum; they may go on with more or less anemia and decompensation. In subacute bacterial endocarditis healing can occur, although the evidence of complete recovery from a clinical standpoint is small.

3. **The Relation of Hypertension to Urinary Secretion.**—Lawrence concludes his observations with the following deductions: No definite relation has been noticed between changes in systolic and diastolic pressure *per se* and variations in urinary output. There appeared, however, to be a definite relation between variations in pulse pressure and urinary output, an increase in pulse pressure combined with a falling systolic pressure being followed by a diuresis. The administration of a nitrite, which increases the volume output of the heart, caused a diuresis, even though pulse pressure was slightly diminished by the systolic fall. In all cases where a rise in urinary output was observed there was one characteristic change in the pressures noted, an approach to the normal circulatory coefficient (Gibson). The ratio of diastolic pressure to systolic is two to three, the ratio of pulse pressure to systolic pressure one to three. Under conditions of hypertension this ratio is destroyed. Whenever the several pressures approached their normal ratios there was a rise in the urinary excretion.

6. **The Therapeutic Use of Vaccines in Typhoid Fever.**—Callison concludes that vaccine

treatment reduces the mortality and lessens the number of relapses in typhoid fever. He observed that complications are less frequent in vaccine treated cases, and the original attack appeared to be shortened in some of the cases. To insure the best possible results vaccine treatment should be given as soon as a diagnosis is made, before exhaustion has appeared and complications have intervened.

8. **Complement Fixation Test in the Differential Diagnosis of Acute and Chronic Gonococcal Arthritis.**—Schwartz concludes that a positive complement fixation test is an absolute indication of gonococcal infection somewhere in the body. A positive reaction may not be expected before the beginning of the fourth week from the onset of the infection, and is obtained in certain cases of gonorrhea where bacteriological methods fail, especially so in women. A negative reaction does not exclude gonococcal infection, but is to be given some consideration for reasons detailed by the writer. As gonorrhea is common in both sexes, this should not be forgotten when interpreting a positive result in connection with any particular case of arthritis. A double infection is possible (acute rheumatic fever and gonorrhea). The complement fixation test should prove a valuable means of differentiating gonococcus arthritis from other forms of obscure etiology, if interpreted in the light of the clinical history and the clinical findings.

AMERICAN JOURNAL OF SURGERY.

September, 1912.

1. GWILYM G. DAVIS: Treatment of Fractures.
2. JAMES HALLIDAY WILLIAMS: Modern Surgical Treatment of Advanced Trachoma.
3. J. THOMPSON SCHELL: Surgical Treatment of Exophthalmic Goitre.
4. SAMUEL W. BANDLER: Sterility.
5. CHARLES EDWARD PANOFF: Vaccine Treatment of Gonorrhoeal Complications.
6. FREDERICK EMIL NEFF: Surgical Essentials.

3. **Surgical Treatment of Exophthalmic Goitre.**—Schell points out that the successful cure of hyperthyroidism, or thyrotoxicosis, is essentially surgical and as our surgical knowledge and experience in this disease increases it will finally become catalogued as a strictly surgical disease. Both as to treatment and to etiology a wide divergence of opinion exists. According to some authorities, the disease is due to trouble in the central nervous system, particularly in the bulb. According to Sea, it is a neurosis of bulbar origin. On the other hand, Wilson strives to prove that there is a definite relationship existing between the group of symptoms known as exophthalmic goitre and certain alterations in the thyroid gland—the result of pathological changes. Kocher says that thyrotoxicosis is the cause and the result of a nervous disease, and asserts that the uniformly good results following the operation of partial thyroidectomy is a proof of the soundness of his argument. Trousseau says that it is caused by a disturbance of the great sympathetic nerve. The writer calls attention to the fact that there seems to be some definite connection between diseases of the genital organs and the production of hyperthyroidism, and cites three cases of exophthalmic goitre following pelvic operations.

4. **Sterility.**—Bandler, viewing the whole question of sterility from the statistical standpoint, comes to the conclusion that of the various causes of sterility due to the female, one third are due to

troubles situated within the cervix or, possibly, the uterus, the other two thirds are located at some portion of the tubes, provided we are dealing with cases where spermatozoa are present in the male, and healthy ova in the female. If we attribute to the cervix, because of stenosis or because of the existence of an angle in the internal os, or because of the length of the canal, or because of the character of the secretion, or because of the overgrowth of its lining, a great share in the causation of sterility, when this area simply serves as a path through which an actively moving spermatozoon passes, why should we not attribute to like conditions in the tube a still greater share in the causation of sterility, since we are dealing with a canal much longer than the cervix, much narrower than the cervix, one in which only a slight swelling of the lining serves to obstruct the lumen of the canal, a canal through which the ovum moves only because the cilia are active, a canal into which the ovum enters only when the cilia in the outer end are sufficiently active to create a current which sucks the ovum up into the lumen? Any anomaly of a congenital nature which may be present in the cervix, any obstruction of a mechanical form, any obstacle which may be due to an acquired inflammation in the cervix, may with greater readiness be appreciated as existing in the two Fallopian tubes. If this is so, we can readily appreciate why only one third of the favorable cases of primary sterility respond to treatment directed to the cervix only, with some attention to the uterine lining. We may likewise appreciate why so few of the cases of one child sterility respond to treatment of the same form, or of any form for that matter.

ANNALS OF SURGERY

September, 1912.

1. CLARENCE A. McWILLIAMS: Transplantation and Use of Rib as Graft.
2. J. PARSONS SCHVEFFER: Unusual Sinus frontalis.
3. CHARLES B. G. DE NANCREDE: Bilateral Congenital Fistulae of Lower Lip.
4. WALTER M. BOOTHBY: Division and Circular Suture of Thoracic Aorta.
5. WALTER M. BOOTHBY: Transplantation of Fresh Venous Segments.
6. LOUIS FRANK and LEON BALDAUF: Ligation of One Ureter.
7. F. E. MCKENTY: Appendix Tumor.
8. ROYALE HAMILTON FOWLER: Foreign Body Appendicitis.
9. J. DEVOINE GUYOT: Relation of Ileocecal Folds to Appendectomy.
10. D. B. PHEMISTER: Fractures of Greater Tuberosity of Humerus.
11. WILLIAM PEARCE COUS: Separation of Epiphysis of First Metacarpal Bone.
12. DONALD C. BALFOUR: Operating Room Mirror.

1. **Bone Transplantation; Use of Rib as a Graft.**—McWilliams epitomizes the following generally accepted practical rules for the transplantation of bone: 1. The best material for free bony grafts is living, periosteum covered, human bone, if possible from the same individual himself (autoplasty); or, in case this is impossible, from another individual (homoplasty). 2. Bone without periosteum becomes absorbed, and is therefore suitable only for transplantation into an osteogenetic bed, such as into a cavity in another bone or into a defect in the skull or for wedging between other bones. 3. Living animal bone is not suitable for transplantation. It heals in living periosteum and marrow, but its replacement is delayed and the periosteum loses its proliferating power owing to the changed serological conditions. 4. Dead bone, according to the earlier opinions, is likewise unsuit-

able for transplantations, except for the filling of a bone producing defect or when surrounded by living periosteum. The same is true of ivory. 5. Periosteum alone remains living in transplantations, so far as one can transfer animal experiments to human ones. 6. Marrow and epiphyseal cartilage alone when transplanted have each osteogenetic powers. At the present day there is no little confusion as to the function of the periosteum in bone transplantations. In a series of animal experiments, the writer corroborates Macewen's theory that the periosteum in itself has nothing to do with the formation of new bone, i. e., with the production of osteoblasts, its main function being to concentrate the spread of the osteoblasts arising from the bone itself along definite channels, thus giving accurate form to the bones. In opposition to Murphy's conception that "bone transplanted with or without the periosteum into the muscular or cellular tissue always dies and is ultimately absorbed," he has transplanted ribs without periosteum in two cases, one, to fill the depression of the left lower jaw following the removal of a large, giant celled sarcoma, and the second on the transversalis fascia to strengthen the inguinal canal in conjunction with a Bassini operation for an irreducible hernia.

7. **Appendix Tumor.**—McKenty points out that until the present day routine examination of pathological specimens, primary carcinoma of the appendix was considered *rara avis*, but owing to their comparative frequency, together with their peculiarities as regards clinical history, etiology, and histology, the writer reports additional cases and briefly reviews the literature on the subject. Points in the etiology are irritation and the origin in embryonic remnants. No organ or tissue is more liable than the appendix to chronic inflammatory processes. Some hold that the inflammatory process, leading to obliteration of the lumen by an increase of fibrous tissue, the mucosa cells being subsequently cut off, is primary, the new growth taking place at a later date. Others hold that as the appendix is either an involution structure, a relic of remote ancestors, or an organ developing to subserve some more modern requirements in our economy, we have here a likely place for displaced cells to occur. The position of these tumors invariably found at the tip seems to bear out this embryological theory. The age of incidence is between twenty and thirty years, and about seventy per cent. are found in the female. Histologically, it seems to be a tumor by itself, with all its own peculiarities, but various investigators have classified it as scirrhus carcinoma, adenocarcinoma, colloid carcinoma, or endothelioma. They never have been known to metastasize or involve glands far from the root of the appendix. Symptomatology is not characteristic, but there is no evidence of loss of weight or cachexia, as is so frequently an early sign of malignant disease occurring in other parts of the intestinal tract.

MILITARY SURGEON.

September, 1912.

1. FRED M. BOGAN: Best Available Measures to Diminish Venereal Diseases among Soldiers and Sailors.
2. L. L. SMITH: Dementia urexica and Chronic Alcoholism.
3. R. E. RIGGS: Bedbug in New Role.
4. L. WEBSTER FOX: Ocular Diseases Incidental to Advanced Life in Connection with Claims for Pensions.

5. E. D. KILBOURNE: Measles Occurring at Columbus Barracks Ohio.
6. EUGENE R. WHITMORE: Fevers of Undetermined Causation.
7. GEORGE A. SKINNER: Gunshot Fracture of Both Bones of Fore-arm; Recovery.
8. L. H. REICHELDERFER: Purification of Water by Means of Dar-nall Filter.
9. M. A. W. SHOCKLEY: Simple Market Set for Solution of Medi-cal Field Problems.
10. GEORGE P. STELLMAN: Ants Destroying Larvæ of Flies.

1. **Veneral Diseases.**—Bogan avers that many are still pessimistic regarding the control of venereal diseases, yet, what they once held impos-sible, i. e., State and municipal recognition, has al-ready taken place, and what they have regarded strictly a military problem, is a National one, and reduction of venereal diseases in the army and navy very largely depends upon the preliminary educa-tion of children, many years before it is possible for them to enlist in a military force. Bogan shows that compulsory venereal prophylaxis is perfectly feasible and that the men, when they understand it, do not object to the treatment.

2. Dementia præcox and Chronic Alcoholism.

Smith says that dementia præcox is the most fre-quent form of mental disease observed in cases ad-mitted from the military service to the Government Hospital for the Insane, and, in a careful analysis of fifty-nine of these cases, finds that there is a his-tory of alcoholic excesses in thirty-five per cent. and that ten per cent. were mixed alcoholic and præcox cases. Alcoholism may complicate, or be sympto-matic of other psychoses, particularly paresis, de-mentia præcox, and manic depressive insanity pro-ducing rather atypical pictures, and that these must be examined from the mental side just as carefully as those of infectious nature, complicated with al-coholism, are to be examined from the physical stand-point. He quotes Stöcher's conclusions, that chronic alcoholism in the first place is a symptom of a men-tal disease and, 1, may so exaggerate stationary epilepsy, chronic mania, dementia præcox, etc., which hitherto were latent and perhaps would re-main still latent without alcoholic abuses, that it may lead to a sudden outbreak, or, 2, it may cover up the symptoms of the fundamental disorder, or, 3, it may give rise to independent clinical pictures. He believes with Graeter that the signs of dementia præcox may be masked by those of alcoholism oc-curring simultaneously, and be pushed into the background, leading to fallacious conclusions, and that the symptoms of dementia præcox are increased by alcoholism and vice versa. As to the influence of dementia præcox on alcoholism, there is dim-inished cerebral resistance to the influence of alcohol. From the standpoint of a military surgeon, he be-lieves it most important that the various alcoholic psychoses be differentiated from psychoses due to other causes.

MONTHLY CYCLOPEDIA AND MEDICAL BULLETIN.

September, 1912.

1. ALFRED C. CROFTAN: Nature of Cardiovascular Changes in Nephritis.
2. HENRY BEATES, JR.: Digitalis Therapy.
3. B. ALEXANDER RANDALL: Relations of Ear Disease to Systemic Affections.
4. FRANK NEALL ROBINSON: Symptoms, Diagnosis, and Treatment of Tuberculous Laryngitis as Complication of Pulmonary Tuberculosis.
5. LOUIS KOLIPINSKI: Proper Treatment of Diabetes mellitus and Its Cure by Diet (Concluded).

1. **Cardiovascular Changes in Nephritis.**—See this JOURNAL, for July 20th, page 149.

2. **Digitalis Therapy.**—Beates advises the use, either of freshly standardized galenical preparations

or, preferably, of a digitalin of known reliability, in doses of one sixth to one half grain, three or four times daily. He lays stress on the continuous ad-ministration of digitalin in the nutritional distur-bances of senility, and states that he has seen other-wise failing treatment converted into success by the addition of digitalis in cases of ununited fracture, ulcers, edema, effusions, and the albuminuria due to passive hyperemia. Senile vesical paralysis, with its necessary accompaniment, catheterization, may be overcome by prolonged use of digitalis.

5. Proper Treatment of Diabetes mellitus.

See this JOURNAL for July 27th, page 201.

SURGERY GYNECOLOGY. AND OBSTETR CS.

September, 1912.

1. ALEXIS CARREL: Permanent Intubation of Thoracic Aorta.
2. GEORGE TULLY VAUGHAN: Central Dislocation of Femur.
3. EDWARD MARTIN: Treatment of Ununited Fractures.
4. ALBERT VANDER VEER: Surgery of Arteries.
5. CHARLES L. SCUDDER: Nontraumatic Diaphragmatic Hernia: Operation; Recovery.
6. JAMES E. THOMPSON: Complete Obstruction of Duodenum from the Impaction of Large Gallstone.
7. GWILYM G. DAVIS: Lever Action in Traumatic Dislocation.
8. EDGAR A. VANDER VEER: Talma Operation for Cirrhosis of Liver.
9. FREDERIC J. COTTON and WALTER M. BOOTHBY: Nitrous Oxide-Oxygen-Ether Anesthesia; Perfected Apparatus.
10. J. DELLINGER BARNEY: Effects of Ureteral Ligation.
11. G. D. SCOTT: Experimental Hydronephrosis by Complete and Incomplete Ligation of Ureter.
12. LEO MAYER and GEORGE BAHR: Bismuth Poisoning.
13. WILLIAM M. FOLK: Procidencia uteri. Suprapubic Plication of Vagina and Conjoined Shortening of Uterosacral and Broad Ligaments.
14. PAUL F. MORF: Sliding Hernia.

14. **Sliding Hernia.**—Morf reviews the es-sential features of sliding hernia as follows: In a true sliding hernia we have the sac incomplete, a part of this structure being formed by the herniated organ. This is of considerable importance, for, as the intestine slides downward into the canal, it takes with it its arterial, venous, and lymphatic ves-sels in a manner analogous to the descent of the testicles, and any careless attempt to free the intes-tine from its connective tissue attachments may be followed by grave consequences, as an injury to the bloodvessels may interfere with the blood supply and so compromise the integrity of the gut. In operating, unless the true condition is recognized, the gut itself may be opened. As to frequency Mayo's clinic reports less than one per cent. and Sprengel about two per cent. Almost invariably the hernia is of the oblique variety and in the ma-jority portions of the ascending colon were found. While characteristic symptoms are few, yet the fol-lowing considerations may occasionally indicate that a sliding hernia is present: 1. All large hernias should be examined with this eventuality in view. 2. All irreducible hernias of long duration and in old people are suspect, especially if a part of the hernia is reducible, while the irreducible portion is nodular and doughy in consistence. 3. The epiploic appendices should give a nodular outline to the herniated gut which will distinguish it from the small intestine, but not from a herniated great omentum. 4. Inflation of the colon with air should increase the volume of the part involved in the hernia, and filling it with water per rectum should change the percussion note. Regarding treatment, as these hernias cannot be reduced completely, they are not adapted for treatment by truss. If the cor-rect diagnosis has been made previous to operating, the primary incision should be made as far to the median line as possible, so as to come upon the free part of the sac. If adhesions between the gut and

the subjacent connective tissue are not too firm and intimate, this structure may be raised up, together with its peritoneal folds, and pushed back into the abdominal cavity without interfering with the blood supply, but when adhesions are so firm and numerous that they cannot be separated without compromising the blood supply of the herniated gut, two ways are open, either to conclude the operation, or, if the patient's condition permits, to resect the herniated portion of gut.

Proceedings of Societies.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Twenty-fifth Annual Meeting, held at Toledo, Ohio, September 17, 18, and 19, 1912.

The President, Dr. X. O. WERDER, of Pittsburgh, Pennsylvania, in the Chair.

Cæsarean Section in Double Uterus and Double Vagina.—Dr. N. STONE SCOTT, of Cleveland, reported the case of Mrs. A., aged thirty-two years, primipara. No abnormality of any kind had been known to exist in the family. She menstruated first at sixteen and a half years; always had a moderate dysmenorrhea, was never very regular, never ahead of time, usually late a week or more, and menstrual period was preceded by a week of pain. She had no idea that there was an abnormality of development such as was discovered by her physician at the time of the confinement. Labor began December 31, 1911, and the sac broke after some twelve hours of pain. Following this, for a period of three days, the pains were only moderate, but on January 3d, at 2 p. m., they became severe and continued so until the evening of that day. Doctor Garvin, the attending physician, discovered a septum in the vagina, with a cervix on each side of the septum, the pregnancy being on the left side. No progress was made in labor. Doctor Scott was called in consultation at 5 p. m., at which time the pains were very severe. On examination the os was found to be undilated, although it easily admitted the finger. The head was high, but firmly impacted in the pelvis; the bladder was distended, and they were unable to catheterize, so firmly was the head impacted. The pelvic measurements were those of an equilibreojutominor with a conjugata vera of about nine cm. Temperature and pulse were normal. The fetal heart beats and motions were vigorous.

An immediate operation was decided upon. The technique of the high Cæsarean section was now carried out. On cutting the uterus, it was found they had placed the incision over the middle of the placenta. After removing the placenta and membranes carefully, examination proved that the uterus was double, with a rupture of the septum between the two cavities. This rupture occurred at the thinnest place, in the middle of the septum, but even here it was a quarter of an inch thick. Through this rupture the false decidua was removed from the right uterine cavity, the fetus occupying the cavity on the left. The tubes were normally implanted, one at either side of the fundus. There

was no cleft in the uterus itself, but a rhapshe running the entire length of the uterus was plainly seen at the surface. At the close of the operation there was no difficulty in catheterizing the patient. On the second day after, the patient had an acute dilatation of the stomach, but no rise of temperature. A bacteriological examination of the uterine discharge taken from the region of the cervix, showed a mixed infection of the staphylococcus and colon bacillus, with a preponderance of the latter. Following gastric lavage and an injection of mixed vaccine, relief was immediate, and convalescence uneventful.

Prior to her leaving the hospital, careful examination was made to ascertain postoperative conditions. The cervix on the right side presented the features of an unimpregnated cervix; the one on the left corresponded to an ordinary cervix two weeks after delivery; it was considerably larger than the cervix on the right side, somewhat dilated, and in it was a very small lateral tear. The left vagina was possibly a trifle larger than the right, though not much. Both cervixes lay comparatively close to the median partition. On the fourteenth day following the laparotomy, mother and child went home in the best of condition.

Dr. JOHN NORVAL BELL, of Detroit, discussed the points of interest in a series of seven cases. Is placenta prævia centralis an indication for abdominal Cæsarean section? The writer was firmly convinced that it was, believing that the dangers attendant upon this operation were far overbalanced by perforation of the placenta, turning, and bringing down a leg, which was the routine procedure in these cases. The results were ideal in the seven cases, both mother and child making perfect recoveries. He strongly advocated a more frequent adoption of this operation, and would include impacted face presentations among the indications.

Acute Dilatation of the Stomach Complicating Cæsarean Section.—Dr. CHARLES EDWARD ZIEGLER, of Pittsburgh, reported a case of acute dilatation of the stomach following Cæsarean section. Postural treatment and hypodermic medication appeared to be useless in the case. The supply of fluid was kept up by rectal and subcutaneous infusion of salt solution. Gastric lavage was the only treatment that caused any amelioration in the symptoms so far as he was able to judge. If there was one thing to be learned in the treatment of this condition from his case, it was that gastric lavage in acute dilatation of the stomach should be repeated at intervals of not less than two hours. His own feeling was that gastrostomy, with continuous irrigation of the stomach, ought to be the ideal treatment, and should be given a trial in cases which did not respond to two hour lavage.

Dr. HERMAN E. HAYD, of Buffalo, did not think we could put the case reported by Doctor Davis in the category of acute gastric dilatation. In his case, unfortunately, he did not have a post mortem examination. He could assume, however, it was possible that this woman had a dilated stomach previous to her pregnancy, and that this dilatation was in a measure hastened by the advancing or growing uterus, and just as soon as he emptied the uterus of its contents, this woman had an acute dilatation of the stomach from the large amounts of ether and

air that were taken in. It was unfortunate that we were compelled to accept the services of untrained anesthetists. One of the most important duties the physician was called upon to perform was the administration of the anesthetic in an operative case. We were going to get into trouble before long if we delegated this responsibility to a nurse. The laws of New York State were that no one but a regular medical graduate could give an anesthetic.

Dr. FRANCIS REDER, of St. Louis, thought dilatation of the stomach in these cases was due in many instances to the toxic elements of the anesthetic that had been administered during a long period. There were other toxic elements which would bring about the same condition.

Dr. SYLVESTER J. GOODMAN, of Columbus, reported a case in which the skull of the fetus had been crushed by the attending physician some hours before he saw the woman. The uterus was full of small fibroids. He advised hysterectomy, which was refused on the ground that the child was dead. This woman was again pregnant and he expected to do a second Cæsarean section next month.

Dr. WILLIAM H. HUMISTON, of Cleveland, said Cæsarean section in an uncontaminated case was so far safer and surer in its results than the high forceps operation, that he believed the time was coming when the high forceps operation would not be resorted to by the general practitioner, but only by the thoroughly trained man in obstetrics.

Dr. WILLIAM S. BAINBRIDGE, of New York, said a woman was brought to him from Bridgeport, Connecticut, some four years ago with a history of having had six pregnancies, with attempts at delivery each time, most of them instrumental, with death of the child in each case. She had a just-minor pelvis and came to him for repair. The entire pelvic floor was torn away and the bladder opened. There was a vesicovaginal as well as a rectovaginal fistula. He repaired these injuries, and told her she must not become pregnant again, although she was very desirous of having a living child. She came back to him a year following or a little later pregnant. He told her he would have to do a Cæsarean section, explained to her what was to be done, and two years ago a child was delivered by section.

Dr. A. S. HOTALING, of Syracuse, stated that two years ago he did a Cæsarean section on a girl, seventeen years of age, for eclampsia. She was seven and a half months pregnant, with undilated unobliterated cervix. About a month ago she came in to the hospital as a private patient, having been brought there by her physician, who thought she was in labor. He saw her at nine o'clock in the morning. She died shortly after one o'clock from hemorrhage. Autopsy the next morning disclosed rupture of the uterus. The organs were all transposed. The rupture was directly through the old scar.

Dr. HUGO O. PANTZER, of Indianapolis, in speaking on the multiple etiology of gastric dilatation, reported a case that recently came under his observation in support of Doctor Davis's supposition that in his case acute pressure applied to the stomach might have been a factor in producing

gastric dilatation. The patient put on a snugly fitting corset to attend an automobile race, and she was brought away from there in convulsions. Examination disclosed that she had gastric dilatation which was brought on by constricting her abdomen too tightly by means of this corset.

Placenta Prævia and Cæsarean Section.—Dr. HENRY SCHWARZ, of St. Louis, observed that, in his opinion: 1. No form of placenta prævia, as such, ever offered a justifiable indication for Cæsarean section. 2. Version after Braxton-Hicks in the presence of a viable child deliberately sacrificed the life of that child, and had no place in modern obstetrics. 3. The cervical and vaginal tampon and the intrauterine use of rubber bags were safe and efficient means for controlling hemorrhage and for securing sufficient dilatation for delivery through the natural passages.

Dr. E. GUSTAVE ZINKE, of Cincinnati, said it was just as wrong to say that Cæsarean section was never indicated in placenta prævia as it was to say that the only operation for placenta prævia was Cæsarean section. When he read a paper on placenta prævia eleven years ago, advocating Cæsarean section for that condition, he had not a single supporter. He was not the first to recommend it. That credit belonged to Lawson Tait. He performed his first section for placenta prævia about two months ago. When one had a case of placenta prævia centralis in a normal uterus, where the placenta had been formed in the normal way, where the placental tissues did not penetrate the uterine musculature, where the thickness of the uterine wall was uniform throughout, even at the placental site, that case would admit of dilatation in many instances, without serious hemorrhages from the hands of a skillful obstetrician. But the situation was entirely different when one had a diseased musculature and a normal implantation of the placenta into the muscle of the uterus. Then one did not get the separation that he got in the other case, and hemorrhage was uncontrollable in spite of the best means of handling the case, whether the position was vertex, breech, transverse, or what not. Then we came in contact with cases of rigid os, where there was hyperplasia, possibly incipient malignancy which was not recognized at the time. Dilatation did not take place until the patient continued to bleed, and the moment the obstetrician introduced his hand for the purpose of dilatation, the patient was likely to be brought to the verge of death before the child came out of the uterus. These were the cases in which he had recommended Cæsarean section.

Dr. MILES F. PORTER, of Fort Wayne, said that if a woman was in good health, and known to be the possessor of a viable child at term, with a placenta prævia centralis, she could be given a better chance for her own life and that of her child by a Cæsarean section at the hands of a good man than she could by any so called obstetric procedure at the hands of the best obstetrician ever created.

Dr. MAGNUS A. TATE, of Cincinnati, said if we had a case of malignancy or a fibroid tumor complicating pregnancy, we should make a Cæsarean section for the malignant condition or for the fibroid tumor, and not simply for placenta prævia

centralis. One of the crying needs at the present time was for more trained obstetricians and fewer skilled surgeons.

Dr. CHANNING W. BARRETT, of Chicago, believed Cæsarean section for placenta prævia to be very much overdone in the hands of general surgically trained men. He believed, further, that if more of these cases fell into the hands of trained obstetricians, fewer of these women would be dealt with by Cæsarean section, and more of them would be handled through the natural route.

Dr. CHARLES L. BONIFIELD, of Cincinnati, said there was no branch of medicine more neglected in the medical schools of to-day than obstetrics, and if we had more trained obstetricians Cæsarean section would not be performed as frequently as it was. However, there were certain cases where a skilled surgeon was better than a skilled obstetrician.

Rapid Dilatation and Accouchement forcé.—

Dr. HENRY S. LOTT, of Winston-Salem, N. C., stated that puerperal convulsions, if at or near full term, with even initial labor pains, should be delivered. With strict asepsis, forcible, rapid dilatation, preferably manual, the application of forceps, and delivery by the natural outlet was most safe, most readily available, and would give the best results in a very large majority of cases. The delivery should be effected under ether, and with care and deliberation. In his two cases of tear of the sphincter, he firmly believed that greater deliberation in delivery would have lessened the extent of the injury.

Puerperal Thrombophlebitis.—

Dr. PALMER FINDLEY, of Omaha, pointed out that ligation of the pelvic veins in this condition was correct in theory, but was as yet in the experimental stage. After reporting four cases, he submitted the following propositions for consideration: 1. The operation of Trendelenburg was correct in theory, but as yet in the experimental stage. 2. It was contrary to his practice and to modern teaching to open the abdomen in the course of puerperal infection unless for drainage in general peritonitis, and we therefore viewed the suggestion of Trendelenburg with misgivings. 3. We were as yet unable to demonstrate clinically the extent to which the infection had traveled, hence it followed that an exploratory incision must be the final resort in determining the extent of the infection, and even this might fail to give the desired information. 4. The pelvic veins, including the ilia, might not be thrombosed, and yet the infection might attack the veins higher in the abdomen and beyond control, and even beyond inspection through an exploratory incision. Furthermore, bacterial emboli might lodge in the lungs and elsewhere without the formation of thrombosed veins. 5. The thrombosed veins might be secured and the infection later travel by other avenues and lead to a fatal issue. 6. It was not always possible to demonstrate the presence of infected emboli, which when found were viewed as contraindications to operative interference. 7. We believed the Trendelenburg operation would find a limited field of usefulness in obstetric surgery, but that the procedure was worthy of an extended trial.

Dr. R. R. HUGGINS, of Pittsburgh, said there were numbers of cases of thrombophlebitis which ended in recovery without operation or under palliative treatment. On the other hand, his own personal experience showed six cases in the last twenty years, with five deaths, with palliative treatment, these being of the severe form of thrombophlebitis. Having had this record, two years ago he resolved that in the next case of septic thrombophlebitis that came under his observation he would, at least, explore the abdomen and see what the matter was. He did this, and the patient fortunately recovered. Since that time he had three other cases, a total of four, with three recoveries. The abdomen should be opened in the midline, which would give a good view of the veins in the pelvis and abdomen. The operation did not do these patients any harm. They stood it very well. Even when there was an accompanying lymphangitis, there was no objection to operating, especially when the condition had extended along the ovarian veins under the retroperitoneal space, a place in the body which was most dangerous if the condition was allowed to progress. If one tied the veins from within, it was easy to make an extra median incision, push the peritoneum forward, and drain behind the veins, or excise the ovarian veins down deep in the pelvis, and he would not only have ligated the source of infection, but he would have drained the infected spaces, and his patient was much more likely to recover.

Ectopic Gestation.—Dr. SAMUEL W. BANDLER, of New York, spoke of the difficulty in making a positive diagnosis, in many cases before the stage of hematocele. He likewise referred to the difficulty in making a diagnosis in many cases unless the hematocele was organized. He referred to the value of the vaginal incision in making the diagnosis, and alluded to the importance of "blue shimmer" in the vesicouterine fold. The value of posterior and anterior celiotomy was referred to. He reported the earliest recorded tubal gestation. The specimen showed an exceedingly small ovum, not sufficiently large to fill the normally narrow lumen of the isthmic portion of the tube. The tube at this point showed some anomalous features. A muscular spur formation was present, causing a diverticulum to form with its blind end buried in the mesosalpinx; and on the mesial aspect of the point of nidation. The ovum rested upon, and was imbedded in a muscular eminence to the distal side of the muscular spur and was nowhere in connection with the diverticulum on the proximal side. It projected into the lumen of the tubes, but was covered by tubal epithelium. This covering was complete in the half nearest the uterus and only partially in the half nearest the fimbria where it might be assumed to suggest a beginning intracapsular rupture, and a very early intratubal.

The embryo as such was not present. It was represented by several large masses and streaks of trophoderm which lay near the trophoblast, and contained fresh blood in contrast to the rest of the coagulum. There was as yet no true chorion formation. Leucocytes were present only underneath the base of the ovum between the loose muscle fibres; and nowhere else in the serosa, musculature, or mucosa of the tube. In view of the total ab-

sence of evidence of salpingitis this leucocyte infiltration could be assumed to indicate a secondary local reaction and not a primary inflammation.

(To be concluded.)

Letters to the Editor.

THE ABUSE OF MEDICAL CHARITY.

BROOKLYN, NEW YORK, October 29, 1912.

To the Editor:

The Physicians' League of Brooklyn held a regular meeting at the Kings County Medical Society Building, Bedford Avenue, September 27, 1912. The attendance was so large as to tax the capacity of the meeting room. Many prominent physicians of Brooklyn were present and participated in the transactions.

The topic for discussion was The Abuse of Medical Charity. It was the consensus of the meeting that a very large number of patients who can well afford to pay, receive medical and surgical treatment gratis; that the physicians and the lay managers of eleemosynary institutions should exercise greater supervision in dispensing medical charity; that the abuse of medical charity was steadily on the increase, and that its effect upon the physician's legitimate income was becoming so pronounced as to threaten a crisis in his economic status. The question of the attitude of the department of health and its increasing activity in the domain of private practice was also discussed. Various tentative remedies were suggested.

Upon a motion of Dr. Elias H. Bartley, a committee of five was appointed to investigate the subject of the abuse of medical charity, and to recommend at the next regular meeting such measures as their investigation will reveal as best adapted to correct this abuse.

The Physicians' League, which meets the third Friday of every month (except July and August) at the rooms of the Kings County Medical Society, Bedford Avenue, has for its primary object the study of the practical economics of the medical profession, with a view of improving the economic condition of the physician, believing that in this way the lay public will obtain better and more dependable service and the physician receive remuneration more commensurate with his labor, skill, and responsibility.

Their meetings are open, and suggestions of value from members and nonmembers are gladly received as the league recognizes the difficulty of the task before it, and welcomes assistance from any one who has live ideas pertaining to the solution of the many problems that the league is attempting to solve.

J. H. BAILEY, M. D.

THE RECENT ACTION OF THE STATE BOARD OF REGENTS: THE RULE OF THE ROAD.

AKRON, OHIO, November 4, 1912.

To the Editor:

The addition of twenty-two American and Canadian medical colleges to those already barred by the New York State Board of Regents leads me to wonder just what the board really desires and by what methods it and the A. M. A. classify medical colleges. In my opinion too much value appears to be attached to beautiful buildings and theory, and too little to the ability of graduates in State examinations and practice. Not one patient in one hundred knows, or cares a tinker's dam, about "the doctor's college." The vital importance is his ability to cure.

Surely some of the eighteen United States colleges and the four Canadian are equal, and often superior to the majority of those in New York State? The addition of the four latter means the complete shutting out of the eight medical colleges of Canada, an absurd and selfish course in my opinion. We point with pride to Johns Hopkins as our test. As nine of the greatest teachers in that institution, Sir William Osler, L. Barker, T. Cullen, N. M. Harris, L. G. Rowntree, etc., are graduates of Canadian colleges, namely, McGill, Toronto, and Western Universities, the new regulation of the regents seems as mysterious as the Carnegie Foundation report of Abraham

Flexner, which was almost worthless, as far as Canadian colleges are concerned, and was discredited by Canada's best teachers and the Canadian Medical Association Journal.

With all due respect to the regents I think their latest regulation is decidedly wrong and unwarranted in several cases.

The *British Medical Journal* was partly correct as to the rules of the road in this country and Canada. In five Canadian provinces the rule is "to the right." In four, however, British Columbia, New Brunswick, Nova Scotia, and Prince Edward Island, the rule is "turn to the left."

I believe that some monarchs of ancient days had corps of mounted archers of the guard.

A. S. McCORMICK, M. D.

THE TREATMENT OF BRONCHIAL ASTHMA.

BROOKLYN, NEW YORK, October 29, 1912.

To the Editor:

In the treatment of bronchial asthma, in the *JOURNAL* for October 26, 1912, Dr. Louis Weiss, of Newark, N. J., considers that a subcutaneous injection of from one to ten c. c. of sterile water stops a paroxysm immediately on the beginning of the injection. "This," he says, "is due mainly to the water injected, which causes a readjustment, a marshalling of the protective forces to the defence of the body, and results in a normal condition of the individual."

Dr. Louis Weiss also advises us to be cautious in the giving of this injection, as a quick variation in the rapidity of the pulse may compel one to stop this subcutaneous injection immediately.

I must confess that I fail in the reasoning part of this process and shall be very obliged for an explanation of the following points:

First, how does ten c. c., or less, of sterile water influence these protective elements, and to what part of the body are they marshalled?

Second, what protective elements are these?

Third, when this subcutaneous injection is given, everything being sterile and properly injected, wherein lies the danger compelling us to be cautious?

To my mind, a subcutaneous injection of ten c. c. or less of sterile water does not differ materially from any other infiltration anesthesia. When such treatment has any influence in bronchial asthma, it acts only as a counter-irritant when the paroxysm is of a purely neurotic origin. It may also have an inhibitive influence on the patient's mind—as from fear of the injection, the slight pain produced by the needle, or the subsequent localized tension and pressure to which the tissues are subjected. But here no protective elements are marshalled to the causative factor or factors to defend the part attacked.

N. BUNIN, M. D.

SIMPLE METHOD OF DRY CUPPING

PITTSBURGH, November 2, 1912.

To the Editor:

Is this new to you? Viz. To dry cup: Cut off an inch of a paraffin candle, light it, catch some of the melting paraffin on the centre of a fifty cent piece, stick base of candle in it, place them over the spot to be cupped, then clap an ordinary glass over the whole, holding it down firmly, and observe a generous blood tumor. This is simple, clean, and safe; no need of cotton, alcohol, or regular cupping glass.

H. B. BRYAN, M. D.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Manual of Surgery. By ALEXIS THOMSON, F.R.C.S. Ed., Professor of Surgery, University of Edinburgh, Surgeon to Edinburgh Royal Infirmary, and ALEXANDER

MILES, F. R. C. S. Ed., Surgeon to Edinburgh Royal Infirmary. Volume III. Operative Surgery. With 220 Illustrations. Edinburgh, Glasgow, and London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1912. Pp. xv-565.

The third volume of this work is devoted to the subject of operative surgery, which is treated in a most up to date manner. The obsolete methods which one is accustomed to find described in the textbooks of operative surgery up to a recent date have been discarded. One finds in their place modern methods of procedure, as practised in the progressive clinics of the world. The book is adapted to the practising surgeon rather than to the student, as special operations, many of them of rare and difficult performance, are given a prominent place. Such operations, for example, as that for recurrent dislocation of the shoulder, arthroplasty at the elbow, arterial suture or faciohypoglossal anastomosis seem too advanced and special for description in a short treatise on general operative surgery. Should the practising surgeon, however, want information on any modern procedure he will find it well described and depicted in this volume. The book gives the atmosphere of the operating rather than the dissecting room, which cannot be said of most books on operative surgery, and so far it meets the requirements of modern surgery. The chapters on bone surgery, particularly the use of Lane's plates in fractures, are very complete and clear. Intestinal surgery is given the prominence it deserves and the latest operative technique with clamps, Paul's tubes, etc., is given in full detail. The illustrations are unusually good, and give an excellent idea of the actual appearance of operations *in vivo*. On the whole the book has distinct value and will be welcomed by the practitioner of general surgery who desires a review of the operative technique of the day.

X Ray Diagnosis and Treatment. A Textbook for General Practitioners and Students. By W. J. S. BYTHELL, B. A. Cantab., M.D. Vict., Honorary Physician to the Ancoats Hospital, Manchester, Medical Officer to the X Ray Department of the Manchester Children's Hospital, etc., and A. E. BARCLAY, M.D. Cantab., M.R.C.S., L.R.C.P., Medical Officer to the Electrical and X Ray Departments of the Manchester Royal Infirmary, etc. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1912. Pp. xii-147. (Price, \$5.50.)

It is always an unpleasant duty to offer adverse criticism of an author's efforts, and the rule enforced in the editorial offices of one of the best known American magazines that no one may review a book who is himself not an author, has obviously for its object the avoidance of unsympathetic and oftentimes unjustly severe criticism.

Nevertheless, the volume before us by Bythell and Barclay is, we are told, not intended for the specialist, and it may be added that neither is it intended for the tyro. In 115 pages the authors have considered the subject of x ray diagnosis, and this condensed study is offered as a guide to the general practitioner. If the average medical man can devote two or three hours to the reading of a book, and from the knowledge thus obtained interpret an x ray negative, what is to be said of the professional radiologist who devotes years to the study and regards the correct reading of the negative as a scientific accomplishment?

The subject of diagnosis is considered in nine very brief papers, that follow in orderly rotation, interspersed with very many beautiful and useful x ray photographs. Nothing new is offered, but the subject matter is clearly and logically grouped.

Although the title of the work is Diagnosis and Treatment, just nine pages are devoted to the application of the rays to skin diseases, diseases of the nervous system, diseases of the glands, lymphatics, and blood, and to the subject of new growths! This is surely *multum in parvo*. It would be interesting in most cases to know how many sésances the patient is given, the length of treatment at each visit, the distance of the tube, etc., considering that the work is intended for the nonspecialist.

One is pleased to note the clear, terse style of the authors and the complete avoidance of ambiguity. Mechanically, the work is splendidly done, attractively bound, and easy to read while the numerous original photographs are of the highest degree of excellence. The index is complete and easy of reference.

The Principles and Practice of Medicine. Designed for the Use of Practitioners and Students of Medicine. By Sir WILLIAM OSLER, Bart., M.D., F.R.S., Fellow of the Royal College of Physicians, London; Regius Professor of Medicine, Oxford University, etc. Eighth Edition, Largely Rewritten and Thoroughly Revised with the Assistance of THOMAS MCCRAE, M.D., Fellow of the Royal College of Physicians, London, Professor of Medicine, Jefferson Medical College, Philadelphia, etc. New York and London: D. Appleton & Co., 1912. Pp. xxiv-1225.

Sir William Osler's standard book has reached its eighth edition in twenty years, and, as the distinguished author points out, but little remains of the original work. This edition has been entirely rearranged, the diseases have been regrouped, while recent discoveries have rendered necessary copious additions in the space devoted to diseases of the blood, the sporotrichoses, pellagra, poliomyelitis, disorders of metabolism, etc. The literary style of the work remains to distinguish it from the great mass of compilations by physicians, well informed, but not always of superior literary equipment.

Tuberculin Treatment. By CLIVE RIVIERE, M.D. Lond., F.R.C.P., Physician to the East London Hospital for Children, Physician to Out Patients, City of London Hospital for Diseases of the Chest, and EGBERT MORLAND, M.D. and B.Sc. Lond., M.D. Berne, Visiting Physician to the English Sanatorium. London: Henry Frowde (Oxford University Press) and Hodder and Stoughton, 1912. Pp. xv-277. (Price, \$2.)

In this comparatively small publication the authors give a very complete presentation of the use of tuberculin. The two methods of administration, the small infrequent dose and the large frequent dose, provided that small ones were used to lead up to it, are explained in detail. As is stated in the preface the chief and central aim of the book is to take tuberculin treatment out of the field of doubt and controversy, and to place its principles and practice alike on a firm basis. This book is a very valuable one in giving such a clear discussion of the subject in all its various phases. It should be read both by believers and nonbelievers in the tuberculin treatment.

Die Gesundheitskontrolle durch den Organsinn. Für Gebildete verständlich dargestellt. Von Privatdozent Dr. ANTON BROSCHE, k.u.k. Stabsarzt, Ordentliches Mitglied des Militär-sanitätskomitees, Lehrer an der Militärärztlichen Applikationsschule und Prosektor am Militärleichenhof in Wien. Unter Mitwirkung von Dr. OTTO VON AUFSCHNAITER, Chefarzt und Direktor der Sanatorium und Kuranstalten Baden-Baden. Zweite, vermehrte Auflage. Leipzig und Wien: Franz Deuticke, 1912. Pp. ix-67.

Although the title of the monograph would indicate that the organs in general were concerned in the control of health, nevertheless but one part of the body is considered. The digestive tract, the large intestine in particular, is regarded as the primary source of many ills; therefore, if the intestinal canal is kept well cleaned out much that is detrimental to health may be avoided. The first chapter takes up that perception of existence that is present in all people and bases it on the total of the vague organ sensations. As the individual becomes older the sense of some disturbance in the lower abdomen becomes more prominent until it may predominate. The consequences of intestinal pressure are mentioned in a second chapter, then in a third is given experimental proof of the injuries due to this pressure. A few pages follow, explaining the great error of mankind in ignoring the presence of unpleasant organ sensations and discussing the term of hypochondria. The next three chapters take up the methods of relieving intestinal pressure, its relation to the psychic condition of the individual, and the matter of intestinal autointoxication. In this chapter are given references to many writers in support of the position taken by the authors. Short chapters are then devoted to a description of an apparatus for thoroughly cleaning out the colon, the application of the apparatus, and directions for its use by the patient. The final chapter deals with the nature of the treatment of internal disease, and a bibliography of eighty-one references concludes the article.

No one would wish to deny the importance of keeping the colon emptied, but that constant washing of it is going

to be the cure of most of the human ills seems a little far fetched. This seems particularly so when one reads the testimony taking the other side of the question, that intestinal autointoxication is not of paramount importance. Taylor's article on autointoxication in Osler's *Modern Medicine* gives a clear presentation of the subject.

The monograph just reviewed contains much information and many valuable hints, but its teachings must be handled judiciously, hardly with the same enthusiasm as that shown by the authors.

Surgery of the Rectum. For Practitioners. By Sir FREDERICK WALLIS, M.B., B.C., F.R.C.S. Surgeon to the Charing Cross Hospital, St. Mark's Hospital, etc. London: Henry Frowde (Oxford University Press), and Hodder & Stoughton, 1912. Pp. xv-355. (Price, \$5.50.)

The author in his Introduction emphasizes very properly the need of stimulating the interest of the medical practitioners in diseases of the rectum. The lack of interest he ascribes largely to the teachers of surgery who do not recognize the importance of the subject. The author takes into consideration the fact that clinical demonstrations in rectal cases present difficulties for instance which are absent in other regions, such as the throat, eye, or ear. In preparing the present volume the author has had in mind the gap existing in the teaching of rectal surgery and has sought to produce a practical and concise work adapted to young surgeons and practitioners. It is based on many years of practical work in this field and represents the convictions of experience. In order to make the book of the greatest value to the practitioner many details interesting to the specialist have been left out, and only those operations have been described which are the least complicated and the most practical. The book begins with a short chapter reviewing the anatomy of the sigmoid and rectum, describes then the various inflammatory diseases and neoplasms, and finally gives the technique of the major operations, such as excision of the rectum and colostomy. The very practical subjects of fistula, pruritus, and hemorrhoids are described in a specially clear and practical way. The illustrations throughout the book are usually good and great helps to a clear understanding of the subject. This is especially true of such operative procedures as incision of fistula, the Whitehead operation, and excision of the rectum. The book deserves a good reception in this country as well as in England.

Obstetrics. A Textbook for the Use of Students and Practitioners. By J. WHITRIDGE WILLIAMS, Professor of Obstetrics, Johns Hopkins University, Obstetrician in Chief to the Johns Hopkins Hospital, etc. Third Enlarged and Revised Edition. With Sixteen Plates and Six Hundred and Sixty-eight Illustrations in the Text. New York and London: D. Appleton & Co., 1912. Pp. xxx-977.

The reputation of the author of this book, together with the reception accorded his previous editions, are sufficient evidence of the character of the present issue. Although the general arrangement of this, the third edition, is the same as in the former editions, the entire work has been thoroughly revised and rewritten, with scarcely a chapter that has not been materially altered and improved upon, in accordance with the advance in obstetric science and the present day teaching. The chapters most notably changed and enlarged upon, as a result of the author's most recent observations and technique, are the development of the human ovum, the organic changes incident to pregnancy, the frequency of contracted pelvis, and the treatment of the complications of labor resulting from it, pubiotomy, and Cesarean section.

The book is attractively written throughout, but special attention is called to the indications for Cesarean section, the treatment of placenta previa, and the toxemias of pregnancy, particularly the eclamptic manifestation. The effect of pregnancy on the hepatic function, resulting in faulty metabolism and the accumulation of toxins, is unquestionably the principal etiological factor in the production of the excess of toxins and the toxic state, a subject of which Williams has made an exhaustive study. While the author has not attempted to give a complete bibliography, extensive references have been appended to each chapter, directing attention to the most important original sources on the early history, as well as the most recent advances in each subject.

Les Anticorps syphilitiques. Essais de stéro-agglutination de la syphilis. Par le Docteur A. L. T. TOURAINE, interne, médaille d'or des hôpitaux de Paris. Paris: G. Steinheil, 1912. Pp. 211.

This monograph, which comes from the laboratory of Dr. Jeanselme at the Broca Hospital, is designed rather for the professed serologist than for the practitioner or even the syphilographer. Some idea of its contents may be gathered from the fact that in the first part the author considers the agglutination phenomena typical of the treponemata in syphilitic serum, with the technique and conditions of experimentation in detail, and the sources of possible error. In the second part he studies the action of syphilitic serums at different periods of the disease and under different methods of treatment. In the third part he considers the maladies related to syphilis and acting serologically in a similar manner, such as spirilliosis recurrent fever, and trypanosomiasis. Touraine believes that he has demonstrated a characteristic stellar form of agglutination for the treponemata in the presence of the serum of a syphilitic subject, which precedes their death; a precisely similar agglutination occurring with the organisms of the spirilloses and trypanosomiasis; whether this fact is of the diagnostic and prognostic value that he asserts must be decided by future observation.

A Treatise on Diseases of the Hair. By GEORGE THOMAS JACKSON, M.D., Professor of Dermatology in the College of Physicians and Surgeons, Medical Department of Columbia University, and CHARLES WOOD McCURTKEY, M.D., Instructor in Dermatology in the College of Physicians and Surgeons, Medical Department, Columbia University. Illustrated with 100 Engravings and 10 Colored Plates. Philadelphia and New York: Lea & Febiger, 1912. Pp. vi-366.

This book, we are sure, will be gladly received by the general practitioner, for there is hardly a subject in medicine of which we possess such a small number of good textbooks and comprehensive manuals. Again diseases of the hair are a question which is often brought home to the physician and which demonstrate to him repeatedly his lack of knowledge resulting from a too meagre education; from barber's itch to alopecia areata he is asked his opinion in private conversation as much as in his own practice. This book not only gives a good insight into the etiology of the diseases, but also—and this makes it very valuable—a good synopsis on the treatment which is accompanied by a number of prescriptions, the good results of which are based upon the experience of leading dermatologists. The illustrations, especially those in colors, are very well executed. The book is divided into five parts: The first part considers the anatomy, physiology, and hygiene of the hair; the second treats the essential diseases, and the third the inflammatory diseases of the hair follicles; in part four we find the diseases of the hair of parasitic origin; and part five takes up secondary diseases of the hair, due to diseases of the skin. This arrangement, together with a very good index, makes the book valuable as a work of reference.

BOOK AND MAGAZINE NOTES.

The Vanishing Man, published by Dodd, Mead, & Co., of New York, is a story that we commend to our friends and colleagues without reservation as one of the most ingenious and entertaining of detective romances. Original in plot and dialogue to the brightest of story problem solvers, it weaves in, moreover, a charming love thread, and is told with much humor; the latter, it must be confessed, growing somewhat grisly toward the end after the one time manner of Mark Twain. We mention the work because it is obviously the work of an M.D., R. Austin Freeman being a *nom de guerre* of an English colleague of much literary skill. Indeed it has been whispered that the author is connected more or less closely with a medical journal of international fame. He is evidently an ardent Egyptologist and entertaining use is made of his studies along such lines.

Another book we wish to commend, but upon other grounds, is *A Doctor's Table Talk*, by Dr. James Gregory Mumford, of Harvard University, published by the Houghton, Mifflin Company. This is a series of delightful essays in which the author pays his respects, in English unusual in our profession, to various types to be found in our won-

derful land. Most physicians, we think, have the same point of view. Several of the very rich are spoken of with less respect than is thought by many to be proper; without awe of Arnold Bennett, the colossal conceit of that writer is pointed out; it is denied that the best work is done for money; the general practitioner is envied and praised; some trained nurses are said to snore and to munch apples; socialism is considered to be our inevitable destiny—but our friends must read for themselves this delightful book for the bedside and the easy chair.

Meetings of Local Medical Societies.

MONDAY, November 11th.—New York Academy of Medicine; Society of Medical Jurisprudence, New York; New York Ophthalmological Society; Williamsburgh Medical Society, Brooklyn; New Rochelle Medical Society; Corning Medical Association; Waterbury, Conn., Medical Association.

TUESDAY, November 12th.—New York Academy of Medicine (Section in Neurology and Psychiatry); New York Obstetrical Society; Newburgh Bay Medical Society; Buffalo Academy of Medicine (Section in Medicine); Medical Society of the County of Schenectady, N. Y.; Medical Society of the County of Rensselaer, N. Y.; Rome Medical Society.

WEDNESDAY, November 13th.—New York Pathological Society; New York Surgical Society (annual); Medical Society of the Borough of the Bronx; Alumni Association of the City Hospital, New York; Brooklyn Medical and Pharmaceutical Association; Alumni Association of the Norwegian Hospital, Brooklyn; Medical Society of the County of Richmond, N. Y.; Dunkirk and Fredonia Medical Society.

THURSDAY, November 14th.—New York Academy of Medicine (Section in Pediatrics); Brooklyn Pathological Society; West Side Clinical Society; Blackwell Medical Society of Rochester, N. Y.; Jenkins Medical Association, Yonkers, N. Y.; Buffalo Ophthalmological Club; Jamestown Medical Society; Society of Physicians of the Village of Canandaigua; Gloversville and Johnstown Medical and Surgical Association; Physicians' Club of Middletown.

FRIDAY, November 15th.—New York Academy of Medicine (Section in Orthopedic Surgery); Clinical Society of the New York Postgraduate Medical School and Hospital; New York Microscopical Society; Brooklyn Medical Society; Saratoga Springs Medical Society.

Official News.

Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending October 30, 1912.

Carrington, P. M., Surgeon. At the request of the State Board of Health of Iowa, directed to proceed to Fort Dodge, Iowa, and investigate an outbreak of typhoid fever. **Herring, R. A.,** Passed Assistant Surgeon. In addition to the Indian reservations and schools mentioned in Bureau order of September 11, 1912, directed to visit the Moapa River reservation, Nevada, and such places in California south of the latitude of San Francisco as may be necessary in the investigation of contagious and infectious diseases among the Indians. **McIntosh, W. P., Surgeon.** Granted one month's leave of absence from November 10, 1912. **Story, Henry C.,** Acting Assistant Surgeon. Granted thirty days' leave of absence, without pay, from November 11, 1912.

Promotions.

Surgeons Hiram W. Austin, James M. Gassaway, George W. Stoner, Fairfax Irwin, Frank W. Meade, Henry R. Carter, Charles E. Banks, Duncan A. Carmichael, Parker C. Kallouch, and Arthur H. Glannan, promoted and commissioned as senior surgeons under the act of congress approved August 14, 1912.

Boards Convened.

Board of medical officers convened to meet at the Marine Hospital, Port Townsend, Wash., as soon as practicable, for the physical examination of an officer of the Revenue Cutter Service to ascertain his physical condition. Detail for the board: Passed Assistant Surgeon B. H. Earle, chairman; Acting Assistant Surgeon P. I. Carter, recorder.

Births, Marriages, and Deaths.

Married.

Dean—Wood.—In Glens Falls, N. Y., on Saturday, October 10th. Dr. John Wyman Dean and Miss Grace Wood. **Elliott—Carson.**—In Layton, Pa., on Tuesday, October 15th. Dr. Frank T. Elliott, of Harney, Md., and Miss Margaret Carson. **Gayle—McDowell.**—In Morgantown, N. C., on Wednesday, October 23d. Dr. Edward Maupin Gayle and Miss Annie Erwin McDowell. **Howard—Osler.**—In Collingswood, N. J., on Thursday, October 24th. Dr. John Edgar Howard, of Haddenfield, and Miss Alice Osler. **McCormick—Hoey.**—In Pittsburgh, Pa., on Tuesday, October 29th. Dr. Frank Talbot McCormick and Miss Anna Myrtle Hoey. **Moth—Moore.**—In Davenport, Iowa, on Tuesday, October 22d. Dr. Robert H. Moth, of Council Bluffs, and Miss Myrtle Moore. **Schneider—Treen.**—In Springfield, Mass., on Wednesday, October 23d. Dr. Jacob Philip Schneider, of Palmer, and Miss Margaret M. Treen. **Speer—Edwards.**—In Wilmington, Del., on Wednesday, October 23d. Dr. William Henry Speer and Miss Laura Edwards. **Supple—MacDonald.**—In Boston, Mass., on Wednesday, October 30th. Dr. Edward A. Supple and Miss Claire MacDonald. **Toulmin—Sprague.**—In Boston, Mass., on Saturday, October 26th. Dr. Harry Toulmin, of Philadelphia, and Miss Ruth Sprague.

Died.

Brockenbrough.—In Quitman, Texas, on Saturday, October 12th. Dr. Marius C. Brockenbrough, aged seventy-three years. **Brown.**—In Oberlin, Ohio, on Saturday, October 26th. Dr. Ernest Edward Brown, aged thirty-six years. **Campbell.**—In Ovid, N. Y., on Monday, October 28th. Dr. Oliver B. Campbell, aged sixty years. **Dibrell.**—In Little Rock, Ark., on Sunday, October 20th. Dr. Edwin R. Dibrell, aged fifty-four years. **Ford.**—In Valentine, Arizona, on Wednesday, October 16th. Dr. Edward P. Ford, aged thirty-eight years. **Harden.**—In Los Angeles, Cal., on Sunday, October 20th. Dr. Charles R. Harden. **Harlon.**—In Oceanport, N. J., on Sunday, October 27th. Dr. William Henry Harlon, aged seventy-two years. **Hunter.**—In Rochester, N. Y., on Monday, October 21st. Dr. De Witt Clinton Hunter, aged seventy-eight years. **Johnson.**—In Cincinnati, Ohio, on Sunday, October 20th. Dr. William Johnson, aged fifty-six years. **Jones.**—In Portland, Ore., on Sunday, October 20th. Dr. William Jones, aged fifty-nine years. **Land.**—In Erie, Pa., on Tuesday, October 29th. Dr. Joseph Foster Land, of New York, aged seventy-four years. **Medley.**—In Tarentum, Pa., on Wednesday, October 23d. Dr. Harry Medley, aged thirty-two years. **Mehrenlender.**—In Brooklyn, N. Y., on Saturday, October 26th. Dr. Albert Nochim Mehrenlender. **Nuckolls.**—In Minneapolis, Minn., on Saturday, October 10th. Dr. George W. Nuckolls, aged sixty-nine years. **Ogden.**—In Limon, Costa Rica, on Thursday, October 10th. Dr. Frederick N. Ogden, of New Orleans, aged fifty-one years. **Pattee.**—In Manchester, N. H., on Monday, October 21st. Dr. William Herbert Pattee, aged fifty-six years. **Pfeiffer.**—In New York, on Thursday, October 31st. Dr. Joseph Pfeiffer, aged eighty-five years. **Segond.**—In Paris, France, on Sunday, October 27th. Dr. Paul Segond. **Smith.**—In Brooklyn, N. Y., on Saturday, October 19th. Dr. Sidney E. Smith, aged forty-six years. **Steagall.**—In Ozark, Ala., on Sunday, October 27th. Dr. William C. Steagall, aged ninety-five years. **Sullivan.**—In Providence, R. I., on Saturday, October 10th. Dr. Dennis J. Sullivan, aged sixty-two years. **Tuttle.**—In New York, on Tuesday, October 20th. Dr. George Montgomery Tuttle, aged fifty-six years. **Woods.**—In New York, on Wednesday, October 23d. Dr. John W. Woods.

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WHOLE No. 1772.

Original Communications.

INFANT FEEDING.*

Suggestions for Home Modification.

By LOUIS FISCHER, M. D.,

New York.

Attending Physician, Willard Parker Hospital, Etc.

Any student of pediatrics must have wondered at the many changes which the artificial feeding of infants has undergone during the last twenty years, and this, due to progressive scientific research.

Let me give you a summary of a discussion on infant feeding held at the New York Academy of Medicine, October 18, 1900. In this discussion Holt said that in prescribing food from birth to the end of the third month, we should make the fat three times as much as the proteid. As he begins with a two per cent. fat, the proteid would be 0.66. Further, from the end of the third month to the end of the tenth month, the fat should be twice as much as the proteid, or if the fat is three per cent. the proteid should be 1.5 per cent. For a child over ten months, full milk or an equivalent of as much proteid as fat should be given.

Winters advocated, during the first week of life, fat two per cent., proteid 0.25 per cent., milk sugar seven per cent. Increase the proteid rapidly, so that in winter an infant could take at the end of the fourth month two per cent. proteid, and in summer, at four months, 1.5 per cent. proteid.

Blackader, of Montreal, speaking of sterilization as a probable cause of disturbance, insisted that before condemning the sterilization one should be sure that the percentage ratio of the feeding mixture was not the fault of the disturbance, as an etiological factor in scurvy. Blackader maintained that the food which causes scurvy in one infant, might agree and be well assimilated in another. Rotch, the same evening, advocated the use of cereals as a diluent for modifying the proteid. Another writer, Starr, in the *Archives of Pediatrics*, for January, 1900, says: "I have never seen an infant, from two to ten months, stand a laboratory mixture of stronger proteid percentage than 1.5, and have often seen patients of two months and more unable to digest a percentage of 0.5." He asks, now is it that the same child can stand a home modification of cream, milk, sugar, etc.? The difference lies no doubt in the fact that the latter is unseparated milk, a natural emulsion, so that a badly

nourished infant, ten months old, could not take a laboratory milk percentage of 1.5 proteids, but will easily digest a domestic mixture of cream, sixteen per cent., 0.5 ounce; milk, 5.5 ounces; milk sugar, one drachm; water, two ounces, calculated proportions; fat, 3.75; sugar, 4.94 per cent.; proteid, 2.97 per cent. This is one of the mysteries of infant feeding.

Underfeeding.—Underfeeding consists in supplying a deficient quantity of nutriment, resulting in lowered resistance, hence, a greater liability to succumb to the acute infections. To give an infant, three months old, 16.5 ounces of milk in twenty-four hours, divided into five feedings, will hardly satisfy the requirements of normal infancy and will no doubt result in changing both the food and the doctor. This, however, is the advice found in a book on infant feeding published during the current year. I can agree that a small infant may require less nitrogen, but I cannot agree that a large, well developed infant will be satisfied and develop normally unless a larger quantity of food is given.

Allen's figures giving one and one half ounce of milk for each pound of body weight may be correct theoretically when applied to practice during the heated term, but my experience has been that a larger quantity of milk will be necessary unless we give in addition to the milk sufficient carbohydrate or proteid in the form of cereals or dextrinized starches to make up the deficiency.

Laboratory modification has not been a success or else it would have displaced during the last twenty years every other form of infant feeding. It has the advantage of cleanliness and of saving a great deal of work for those who cannot or will not modify their milk at home. But while percentages and theories look well on paper the majority of infants refuse to digest or refuse to thrive on percentage combinations. Jacobi, twenty-five years ago, advised the use of milk diluted with barley water, and to-day we find the correctness of this statement that starch is well borne and assimilated by the very young infant.

Overfeeding. The tendency to develop fat children and to show a regular increase in weight has caused physicians to feed *very high fats and cream mixtures* or *top milk mixtures*. As every child is different, so also does each stomach tolerate more or less depending on individual idiosyncrasy. One may lay down as a rule that every infant is born with a healthy stomach, hence, normal quantities of secretion from the peptic glands plus the ferment should be present, but, if high fat formulæ are prescribed, then we give the stomach an excessive

*Read by invitation before the Atlantic County Medical Society, October 11, 1912.

amount of work, which leads to dyspeptic symptoms and later, if not corrected, to pathological conditions.

To cause a stomach breakdown by stuffing and overfeeding is certainly wrong. If we overtax the stomach we render it unable to do its work properly.

Feeding interval. The tendency until very lately has been to order frequent feedings. The majority of textbooks published in the English language to-day still adhere to the old method of frequent feedings. Contrast the old method of giving ten feedings in twenty-four hours, with the modern method based on studies in metabolism which gives six feedings in twenty-four hours for the newly born. In like manner, when the feedings are cut down from ten to seven, the modern teacher finds that five feedings in twenty-four hours are ample. This latter method is based simply on the fact that it takes about three hours for the stomach to be emptied after feeding, hence, one hour rest should be given before a new feeding is commenced. The feeding of the newborn infant has always been a problem when human milk could not be obtained.

Twenty-five years ago, Jacobi advised, as did Biedert also, one per cent. of casein for the newly born. To-day no less than two per cent. of casein is ordered. Following the teachings of Czerny and Keller, and Finkelstein and Meyer, we should begin with 1.5 ounce of milk, 1.5 ounce of water, and no sugar.

Sugars. When sugar is used we should resort to maltose. If constipation exists then malt extract is better because the diastase which it contains has laxative properties. According to Finkelstein and Meyer, milk sugar is one of the primary causes of the fermentative dyspepsias of infancy. Such dyspepsias are relieved when carbohydrates are lessened, and if milk sugar has been fed, it should be entirely withdrawn. In this class of cases albumin milk, which consists of a large casein content, should be substituted, and instead of milk sugar, maltose should be given. As maltose is a monosaccharide it is very easily assimilated and transposed into glycogen.

All sugars in large doses have a purgative action. Glucose and cane sugar are less purgative than lactose. Glucose and cane sugar are more quickly absorbed. Malt sugar is the most easily assimilated of all the sugars. Next to this is cane sugar. Regarding milk sugar, Finkelstein states that it owes its laxative effect to the irritation which it causes on the intestinal epithelium. A distinct fever curve was produced when high sugar formulæ were fed. The temperature was lowered when the sugar feeding was discontinued, and the fever reappeared when the sugar was again given. Calcium tends to reduce temperature and to quiet nervous irritability. The calcium content of the blood in infants is greater than in the adult.

Sodium chloride, in a three per cent. solution by mouth, according to Nothmann, will produce a gain in weight if given in small quantities to normal children. Sodium promotes water retention, produces a rise in temperature, increases the nervous irritability, and tends to the production of a leucocytosis.

The stool of a breast fed infant is usually Gram positive, whereas the stool of an artificially fed infant is usually Gram negative. This in itself shows the vast difference in the intestinal bacteria produced by the feeding.

According to Cannon, the acid reaction of the pyloric contents causes opening of the pylorus. When the contents of the duodenum are acid, it remains closed. By the addition of hydrochloric acid the casein is coagulated into paracasein, which contains large quantities of calcium phosphate. The clots of cow's milk are probably no larger than those of human milk (although test tube experiments tend to show the opposite), since the motor activity of the stomach tends to keep the curd well broken up.

Fat. The stomach contains a fat splitting ferment called lipase. According to Sedgwick, it is probably a definite product of the gastric mucosa. Fat favors nitrogen excretion, whereas carbohydrates favor nitrogen retention.

Acidosis. When food containing a high fat content is given there is abstracted from the intestine a large amount of alkali necessary to the formation of soap. By reason of these saponified fatty stools, an excessive condition of acid remains in the system. There is also a large quantity of ammonia found in the urine, hence the acid alkali ratio is disturbed, and a relative acidosis is produced.

Casein. Nutritional disturbances have been attributed by various observers to the irritation of one or the other component parts of milk. Casein was looked upon as the great bugbear, hence leading pediatricists taught that we should cut down the proteid content of food to that minimum which will sustain life and yet cause no irritation.

Proteids were prescribed as low as two per cent.; if disturbances were then noted, the proteid was reduced to one per cent. and not so many years ago, in a discussion on infant feeding, a well known pediatricist insisted on reducing proteids to one half of one per cent., in spite of which dyspeptic symptoms persisted.

The fallacy of this teaching has been demonstrated by the research work of Finkelstein and Meyer, of Berlin. These authors have repeatedly proved that the system has a decided tolerance for casein, and they have given a food containing a high casein content to modify a condition of decomposition which formerly was *believed to be actually caused by the feeding of casein.*

You have all no doubt used buttermilk and buttermilk feedings in children. The chief ingredient on which success is based is casein, which, by the presence of lactic acid, is transformed into casein lactate. In addition to a high casein content lactic acid milk contains low fat, and is known as a fat free milk.

How to heat milk. When the source of milk is unknown and we are not familiar with dairy methods, the safest plan is to heat the milk in a double boiler until the steam rises, and continue heating at this same temperature for fifteen minutes. We can also subject the milk to the steaming process by using a pasteurizer and steaming the milk about fifteen minutes. Milk should never be sterilized or boiled.

Filth introduced into milk remains; it cannot be removed by steam. Disease germs remain in milk when once there, even though the milk is pasteurized. These germs may be dead, but they abound in the milk, and worst of all their poisons or toxins cannot be destroyed by pasteurization.

Which is more rational, to steam filthy or contaminated milk and then feed the same to the baby, or to subject all milk to a rigid inspection and apply strictly sanitary measures to the source of our milk supply, thus preventing the introduction of disease germs or dirt in any form?

The treatment should not be applied to contaminated milk, but to the source, viz., the dairy. To state that by subjecting milk to a temperature of 170° F. for twenty minutes, renders milk safe is unscientific and uncertain for the following reason. We seek to eliminate disease germs, but this is not all. The spores of many infectious diseases can withstand a much higher temperature and are not destroyed by this steaming process, for their spores will be found in milk after pasteurization.

In a symposium on infant feeding,¹ I was invited to give the ideal method of heating milk. I advised securing *clean* raw milk and warming it; I advised against boiling or sterilizing, but insisted on securing milk from clean cows, and applying all rules of asepsis to utensils, hands, etc., rather preventing contamination of the milk.

Care of nipples. The nipples after being used should be boiled in a solution of baking soda and water, two teaspoonfuls of soda to one quart of water. They should then be wrapped in sterile cheese cloth and placed in a covered jar.

Quantity for each feeding.—This is largely an individual factor, for even though the capacity of an infant's stomach is six ounces, it may frequently be fed seven or eight ounces without harm. This is due to the fact that, no doubt, a large amount of the fluid portion of the milk will pass through the pylorus shortly after reaching the stomach.

No set rule can be given for all infants. Each infant's requirements must be studied. The size of the stomach varies in infants. The stomach capacity of one infant may be six ounces at the age of two months, while another equally healthy infant will have a capacity of, and be satisfied with four ounces at one feeding. These individual peculiarities must be taken into consideration when estimating the quantity of food for each meal.

We cannot feed all infants at the same intervals. What applies to the quantity applies also to the frequency of feeding. One infant will thrive on a meal every three hours, another infant requires a feeding every four hours. Here again it is necessary to study the individual requirement, and be guided by the amount of rest, by the stool, and by the gain in weight. The tendency of the mother is to overfeed, which is harmful.

Calories.—According to Heubner, 100 calories should be fed to one kilogramme of weight in twenty-four hours, or forty-five calories to each pound weight. In estimating the quantity of nitrogen necessary for sustenance, Allen states that one and one half ounce of milk to each pound weight is required.

The first rule to apply is, use common sense.

Second. Avoid all fads.

Third. Study the baby. Its requirements, and capacity can best be judged by noting its action after taking its feedings. If it is satisfied then it will be content and play. If it puts its fingers in its mouth then it shows either hunger or discomfort. No hard and fast rule can be applied to an infant's stomach. One infant will thrive on food and have a normal well digested stool therefrom, while another infant with the same formula will have a dyspeptic stool and be troubled with colic and constipation.

The following series have been advised by me as general working formulæ. In revising my books I shall discontinue the use of granulated sugar, and substitute the same quantity of maltose.

Formula No. 1.²

For an infant from birth to one month.

Milk	4 ounces
Barley water	16 ounces
Maltose	1 ounce

Dissolve the maltose in the hot barley water and add the cold raw milk. Fill and cotton stopper the bottles and place in the refrigerator but not on the ice. At feeding time warm to feeding temperature by placing the bottle in hot water, then remove the cotton stopper and draw on the nipple.

Divide into 8 bottles of 2.5 ounces each and feed every three hours.

Formula No. 2.

For an infant from one to two months old.

Milk	7 ounces
Barley water	20 ounces
Maltose	1.5 ounce

Divide into 7 bottles of 4 ounces each and feed every three hours.

Formula No. 3.

For an infant from two to four months old.

Milk	10 ounces
Barley water	10 ounces
Maltose	1.5 ounce

Divide into 6 bottles of 5 ounces each, and feed every three and one half or four hours.

Formula No. 4.

For an infant from four to six months old.

Milk	15 ounces
Barley water	14 ounces
Maltose	1.5 ounce

Divide into 5 feedings of 6 ounces each and feed every four hours.

Formula No. 5.

For an infant from six to nine months old.

Milk	28 ounces
Barley water	12 ounces
Maltose	1.6 ounce

Divide into 5 bottles of 7 to 8 ounces and feed every four hours.

Formula No. 6.

For an infant from nine to twelve months old.

Milk	32 ounces
Barley water	4 ounces
Maltose	1.6 ounce

Divide into 4 bottles of 9 ounces each, feed every four hours.

Substitute feeding. If a sudden derangement of the stomach occurs with fever, vomiting, and diarrhea, then substitute feeding should be used. Skimmed milk or condensed milk diluted with water should be ordered.

²From *The Health Care of the Baby*, Louis Fischer, New York, third edition.

¹Transactions of New York Academy of Medicine, October 18, 1909.

Skimmed milk is obtained by allowing a quart bottle of milk to stand on the ice for six hours. Skim off the cream. The resulting fluid is the skimmed milk.

Diluted condensed milk is made for infant feeding by adding two drachms of condensed milk to three ounces of hot water.

When cow's milk disagrees in spite of being diluted with plain water, rice water, barley water, or oatmeal water as previously mentioned, then the addition of peptogenic milk powder will alter the ingredients of the milk and render it more digestible. A rapid method of preparing this milk is as follows: Take of raw milk, two ounces; hot water, two ounces; peptogenic milk powder, one quarter measure. Dissolve the powder in the hot water; add the raw milk, heat to feeding temperature. The milk does not acquire a bitter taste due to peptonization and the curd is partially digested.

To make a malt soup feeding, dissolve 3.5 ounces of malt soup (sold in drug stores under the name of Loefflund's malt soup), in one pint of warm water. Then mix three ounces (in measure) or two ounces (in weight) of wheat flour in one pint of milk. When the wheat flour and milk solution is strained it is added to the malt soup extract solution and slowly brought to a boil, being stirred constantly over a slow fire. Bring to a boil three times. Cool it off quickly by standing it in cold water.

To prepare buttermilk for infant feeding, boil one quart of fresh raw milk, and when cool, skim off the skin that rises. Add one teaspoonful of the pure culture of the lactic acid bacillus, or one lactic acid tablet containing the bacillus. Set this inoculated milk in a warm place (temperature about 100° F.) for twenty-four to thirty-six hours. The lumpy mixture must then be thoroughly shaken and placed in a cool place to retard souring.

Pyloric spasm. Sudden changes of milk invite trouble, hence, weaning an infant from the human breast, and substituting therefor a formula food containing a high percentage of fat, is fraught with danger. This high fat is a distinct insult to the pylorus, as the following case will illustrate:

CASE. M. L., aged fourteen weeks, was seen by me in consultation with Dr. H. Weinstein, of New York. The infant had marked evidence of pyloric spasm which was so severe that stenosis of the pylorus was suspected. The infant was breast fed fourteen weeks, then received percentage feeding, fat, 3.5; sugar, 6.5; proteid, 1.75. Later mixed feeding was given, top milk, five ounces; barley water, fourteen ounces; lime water, one ounce; milk sugar, 1.5 teaspoonful; divided into four bottles.

The infant, after taking this formula, screamed and vomited, seemed to vomit more than it had taken at the last feeding, and passed large quantities of blood in the stool.

When I first saw the infant it had no passage since the bloody evacuation of the day previous. The temperature was 100° F., stomach distended, lower abdomen apparently retracted.

The stomach was lavaged with sodium bicarbonate and salt. Breast milk was pumped off and fed by bottle, two ounces every three hours. I also gave sodium bromide. The vomiting ceased, the stools became yellowish brown in color, and the infant began to nurse well. In this case the substitution of a high fat formula for the breast of human milk produced a violent dyspepsia. The symptoms led the attending physician to suspect a probable

pyloric stenosis. By the persistent use of small doses of human milk, fed at long intervals, the infant made a complete recovery.

162 WEST EIGHTY-SEVENTH STREET.

SALVARSAN IN LEPROSY.*

By CREIGHTON WELLMAN, M.D.,
New Orleans,

Professor and Head of Department of Tropical Medicine, Hygiene, and Preventive Medicine; Director of the Laboratories of Hygiene and Tropical Medicine, Tulane University of Louisiana, Visiting Physician, Charity Hospital.
(Studies from the Laboratories of Tropical Medicine and Hygiene under the direction of Creighton Wellman, Medical Department, Tulane University of Louisiana—No. 22.)

In a preliminary note¹ were discussed the clinical findings in a series of seven lepers of whom five re-

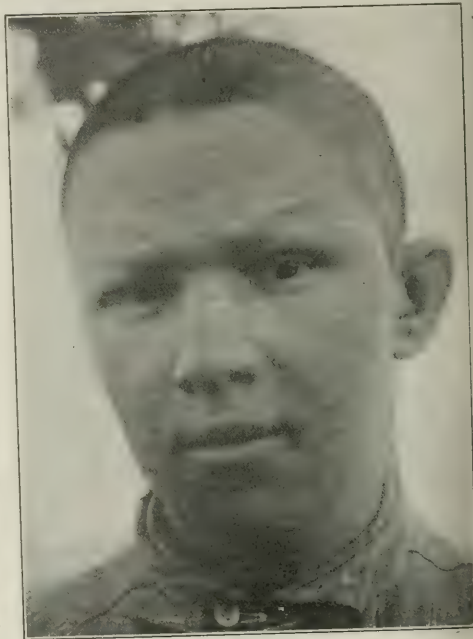


FIG. 1.—Photograph, Case 1.

ceived treatment with salvarsan and two were injected at the same time with normal salt solution and observed as controls.

There was a gain in weight and in the appearance of the superficial lesions, notably of the throat and skin in the patients treated. In none of the cases was there any clinical evidence that the bacilli in the tissues were destroyed or that their activity was impaired. The conclusions arrived at from a physical

*Specimens, photographs, and lantern slides illustrating this paper were exhibited before the American Society of Tropical Medicine and the Pathological Section of the American Medical Association, Atlantic City, June 4-7, 1912.

¹Preliminary Report on the Experimental Administration of Salvarsan in Some Cases of Leprosy, read at the eighth annual meeting of the American Society of Tropical Medicine, New Orleans, May 18, 19, 1911. *Southern Medical Journal*, iv, 11, pp. 849-851, December, 1911.

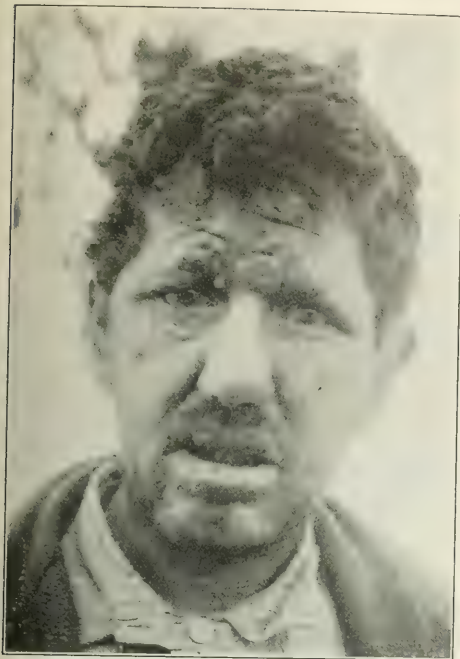


FIG. 2, a.—Photograph, Case 2.

examination of the series of patients were that no immediate injurious effects follow from the administration of the drug in cases which are not too far



FIG. 2, b.—Hands in Case 2.

advanced, and that in such cases some improvement may be expected.

At the time the experiments were carried out careful laboratory findings were recorded along with the clinical notes, and it is the purpose of the present paper to present these laboratory findings.

METHOD OF STUDY.

The following were examined as hereafter described, one set of specimens being taken one week before the administration of salvarsan and the other specimens being taken seven weeks after the administration of salvarsan:

1. Smears of nasal mucus.
2. Blood smears.
3. Urine.
4. Excised leprous nodules.
5. Feces.

1. All smears from the nose were fixed with heat



FIG. 3.—Photograph, Case 1.

at the time of taking. Immediately after the smears were stained with freshly prepared Ziehl Neelsen carbol fuchsin for three minutes, warming the stain but not allowing it to boil. The specimens were then washed in tap water for a few seconds, after which they were covered with a twenty per cent. solution of sulphuric acid two or three times, and again washed in tap water for less than one minute. Then the smears were covered with ninety-five per cent. ethyl alcohol for thirty seconds and washed in water to remove alcohol. Finally they were counterstained with Löffler's methylene blue for one minute, dried, and mounted.

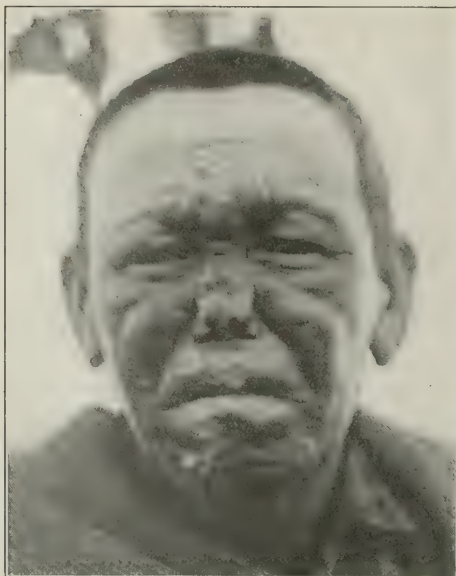


FIG. 4.—Photograph, Case 5.

The following table shows the result of an examination of these smears:

No.	Name	Time	Findings	Remarks
1.	F. Correa.....	Before	.....	Early case.
2.	F. Correa.....	After	.....	Clinically much improved.
3.	T. Smith.....	Before	.....	Moderately advanced case.
4.	T. Smith.....	After	.....	Clinically much improved.
5.	Lee Sing.....	Before	B. lepræ	Very advanced case.
6.	Lee Sing.....	After	?	Died from accidental burns.
7.	O. Shibuya.....	Before	B. lepræ	Control.
8.	O. Shibuya.....	After	B. lepræ	Grew much worse and died.
9.	Joe Correa.....	Before	B. lepræ	Advanced case.
10.	Joe Correa.....	After	B. lepræ	Clinically improved.
11.	John Hoy.....	Before	.....	Control, anesthetic type
12.	John Hoy.....	After	.....	.....
13.	Mary Delgado..	Before	B. lepræ	Early case
14.	Mary Delgado..	After	.....	Clinically much improved.

It will be seen from this table that nothing of note can be deduced from the comparison of nasal smears taken from these cases before and after treatment. In case seven the bacilli disappeared from the nose after treatment.

2. In staining the blood smears Wright's stain was used exclusively. Talqvist's scale was employed in a rough estimation of the percentage of hemoglobin.

The following table shows the result of an examination of these specimens of blood:

No.	Name.	Time.	Hemoglobin.		Reds.	Whites.	Differential count—			Eosin.	No. cells counted.	Remarks.
			Time.	Per cent.			Neutro- phils.	Large Monos.	Small Monos.			
1.	F. Correa	Before	95	5,300,000	18,600	48	7	43	2	500		
2.	F. Correa	After	95	4,700,000	15,600	56	8	34	2	500		
3.	T. Smith	Before	95	3,500,000	11,200	52	6	35	7	500		
4.	T. Smith	After	95	5,420,000	11,000	58	11	27	10	500		
5.	Lee Sing	Before	95	3,410,000	8,800	82	1	17	..	300		Counted two eosinophiles.
6.	Lee Sing	After	95	3,200,000	10,800	84	4	12	..	500		Fatal from accidental burns.
7.	O. Shibuya	Before	95	3,200,000	10,800	84	4	12	..	500		Control, counted one eosinophile.
8.	O. Shibuya	After	30	2,176,000	8,800	88	3	7	2	500		A few normoblasts found.
9.	Joe Correa	Before	85	3,900,000	16,000	48	2	38	12	500		
10.	Joe Correa	After	75	4,300,000	13,600	64	10	26	6	500		
11.	John Hoy	Before	95	5,100,000	9,000	65	5	28	1	300		Control.
12.	John Hoy	After	95	5,400,000	10,000	63	4	32	1	300		
13.	Mary Delgado ..	Before	95	5,408,000	12,000	57	6	37	..	500		Counted one eosinophile
14.	Mary Delgado ..	After	95	5,500,000	9,000	62	5	32	1	500		

It will be noted that these examinations throw little light on the question of improvement under salvarsan. Three cases showed increase in number of red cells.

3. All specimens of urine examined were passed in the morning after breakfast was eaten and were examined an hour later. In testing for albumin Heller's cold nitric acid, and the heat test with the later addition of acetic acid, were both used in all

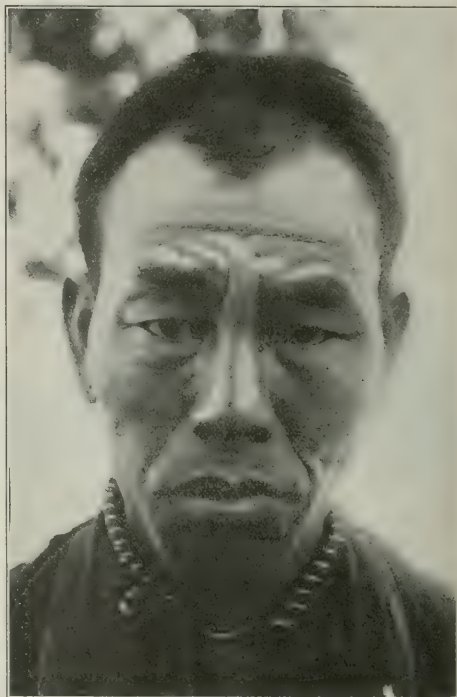


FIG. 5.—Photograph, Case 6.

examinations. No quantitative estimation was made. Fehling's test was used for sugar.

Nothing of significance is suggested by the preceding table.

The following table shows the result of these examinations.

4. The excised nodules examined were stained after two methods, to show the histological archi-

No.	Name.	Time.	Color.	Trans- parency.	Reaction.	Sp. gr.	Albumin	Sugar.	Casts.	Urs.	Blood.	Remarks.
1.	F. Correa....	Before	Amber	Slightly cloudy	Slightly acid	1.027	Large amount	.....	A moderate amount hyaline	.....	.....
	F. Correa....	Before	Amber	Slightly cloudy	Slightly acid	1.026	Large amount	.....	A moderate amount hyaline	.....	.....
2.	T. Smith....	Before	Amber	Clear	Slightly acid	1.025	.....	.....	.....	.....	.....
	T. Smith....	After	.....	Clear	Slightly acid	1.022	.....	.....	.....	.....	.....
3.	Lee Sing....	Before	Yellowish	Cloudy	Acid	1.016	Trace	.....	Many hyaline and dark granular	Small amount	A few cells	
	Lee Sing....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Died from accident.
4.	O. Shibuya....	Before	Reddish yellow	Very cloudy	Slightly alkaline	1.027	Large amount	.....	.....	Small amount	Large amount	Control.
	O. Shibuya....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5.	Joe Correa....	Before	Brick dust	Very cloudy	Slightly alkaline	1.023	.....	.....	.....	.....	.....	Died.
	Joe Correa....	After	Amber	Clear	Slightly acid	1.014	.....	.....	.....	.....	.....	Heavy sediment of amorphous urates.
6.	John Hoy....	Before	Reddish yellow	Cloudy	Slightly acid	1.021	.....	.....	.....	.....	.....	Control. Moderate amount of amorphous urates.
	John Hoy....	After	Amber	Clear	Slightly acid	1.013	Faint trace	.....	.....	.....	.....
7.	Mary Delgado.	Before	Dirty yellow	Very cloudy	Slightly acid	1.024	Small amount	.....	Many hyaline and dark granular	Small amount	Small amount	
	Mary Delgado.	After	Light yellow	Slightly cloudy	Slightly acid	1.018	Very small amount	.....	Fewer number of casts	Small amount	.....

texture, and to reveal the numbers of contained *Bacillus lepræ*. The technique employed for these purposes was as follows:

a. For histological structure the specimens were placed immediately in ten per cent. solution of

formaldehyde in normal sodium chloride solution. After twelve hours they were cut in proper sizes for mounting. They were then placed in another freshly prepared ten per cent. solution of formaldehyde in normal salt solution and put in the in-

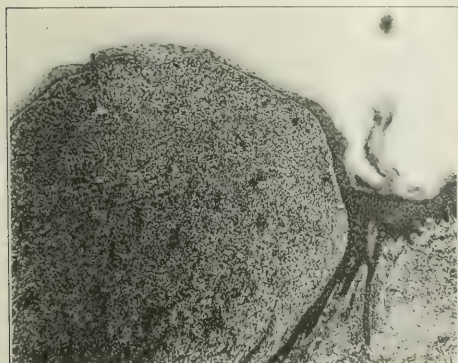


FIG. 6.—Photomicrograph of active lepra lesion, before treatment, low power. Note thinning and smoothing of skin.

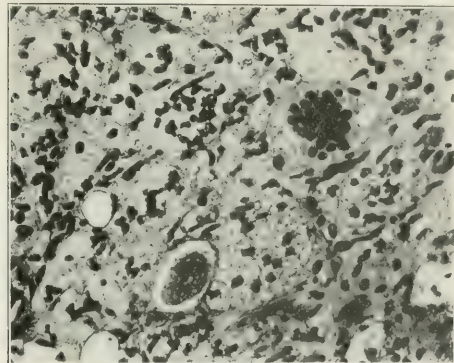


FIG. 8.—Very high magnification of lepra lesion, showing in detail a globus and a giant cell with many nuclei.

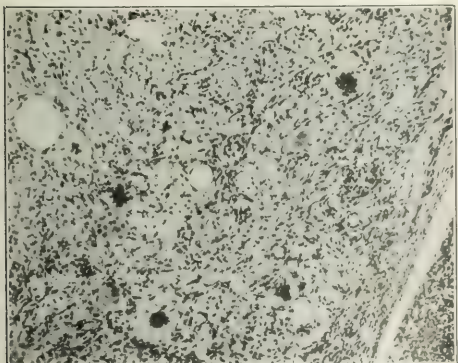


FIG. 7.—Higher power of lepra lesion, showing globi and giant cells. The open spaces are where globi of bacilli have dropped out of the section.

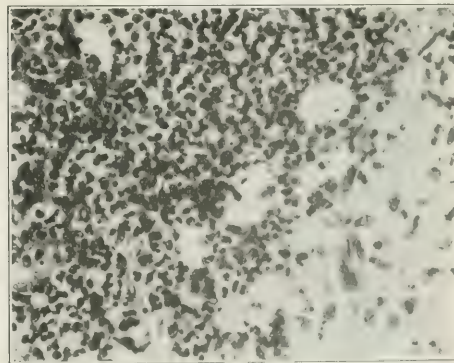


FIG. 9.—Lepra lesion after treatment. Giant cells are still present, but stain very faintly; numerous polymorphous leukocytes are seen, with a few epithelioid cells.

cubator at 38° C. for twelve hours. After this the tissue was passed through the following manipulations:

1. Seventy per cent. ethyl alcohol for twelve hours.
2. Eighty per cent. ethyl alcohol for twenty-four hours.
3. Ninety-five per cent. ethyl alcohol for twenty-four hours.
4. Absolute ethyl alcohol for twenty-four hours.
5. Absolute ethyl alcohol and ether, equal parts, for twenty-four hours.
6. Xylol until clear (usually about one half hour).
7. Xylol and paraffin (melting point 43° C.), equal parts, for one half hour.
8. Paraffin (melting point 43° C.) for two hours at 55° C.
9. Paraffin (melting point 54° C.) for one hour at 55° C.
10. Mounted on blocks and thrown into cold water for five minutes.

The sections were then cut, fastened on slides, and stained for three minutes in Delafeld's hematoxylin for the nuclear staining, after which they were counterstained with a dilute solution of eosin, cleared in xylol, and mounted in balsam.

The following table shows the results of an examination of these sections:

No.	Name.	Time.	Histological architecture.	Remarks.
1.	F. Correa	Before	Typical active lepra lesion, giant cells, and globi.	
	F. Correa	After	Epithelioid and plasma cells, resolution fairly well advanced.	
2.	F. Smith	Before	Typical active lepra lesion.	
	F. Smith	After	Some evidence of inflammation, polymorphonuclear leucocytes, a few plasma and epithelioid cells.	
3.	Lee Sing	Before	Typical lepra lesion plus some beginning necrosis.	
	Lee Sing	After	?	Died from result of accident.
4.	O. Shibuya	Before	Typical lepra lesion.	Control.
	O. Shibuya	After	Inflammation and necrosis.	Died.
5.	Joe Correa	Before	Typical lepra lesion.	
	Joe Correa	After	Giant cells and a few globi persist, but with some evidences of resolution. Plasma and epithelioid cells, etc.	
6.	John Hoy	Before	Atypical lesion, but a few giant cells, no globi nor discrete bacilli.	Control.
	John Hoy	After	Unchanged.	
7.	Mary Delgado	Before	Typical lepra lesion.	
	Mary Delgado	After	Almost complete resolution, lesion essentially a cicatrix.	

b. The technique used in staining sections for bacilli was as follows: The sections were fixed, hardened, and mounted on blocks in the same manner as those intended for histological sections, then they were stained with cold Ziehl-Neelsen for twenty-four hours, and afterward treated the same as the smears of nasal mucus, and finally counterstained.

The following table shows the results of an examination of these sections:

No.	Name.	Time.	<i>B. lepra</i> .	Remarks.
1.	F. Correa	Before	Positive.	
	F. Correa	After	Negative.	
2.	T. Smith	Before	Positive.	
	T. Smith	After	Positive.	Number greatly diminished, very few found.
3.	Lee Sing	Before	Positive.	
	Lee Sing	After	Positive.	Died from result of accident.
4.	O. Shibuya	Before	Positive.	Control.
	O. Shibuya	After	Positive.	Died.

No.	Name.	Time.	<i>B. lepra</i> .	Remarks.
5.	Joe Correa	Before	Positive.	
	Joe Correa	After	Positive.	
6.	John Hoy	Before	Negative.	Control.
	John Hoy	After	Negative.	
7.	Mary Delgado	Before	Positive.	
	Mary Delgado	After	Negative.	

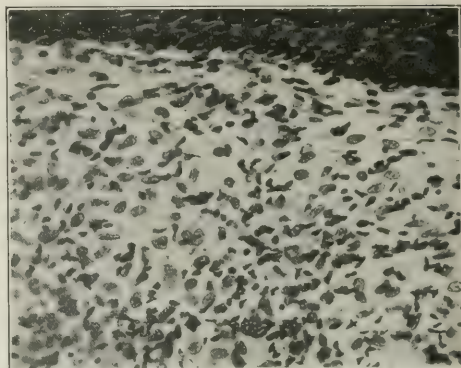


FIG. 10.—Another lesion after treatment, resolution well advanced, many epithelioid and plasma cells seen.

This table shows the disappearance of *Bacillus lepra* from the tissues in cases one and seven.

5. The feces were examined in the ordinary manner under low and high power.

The following table shows the results of the examination:

No.	Name.	Time.	Result of examination.	Remarks.
1.	F. Correa	Before	<i>N. americanus</i> .	
	F. Correa	After	<i>N. americanus</i> .	Number of ova unchanged.
2.	T. Smith	Before	<i>N. americanus</i> .	
	T. Smith	After	<i>N. americanus</i> .	Number of ova unchanged.
3.	Lee Sing	Before	.....
	Lee Sing	After	.....	Died from accidental burns.
4.	O. Shibuya	Before	.....
	O. Shibuya	After	.....	Died.
5.	Joe Correa	Before	<i>N. americanus</i> .	
	Joe Correa	After	<i>N. americanus</i> .	Number of ova unchanged.
6.	John Hoy	Before	<i>T. trichuris</i> .	Number of ova unchanged.
	John Hoy	After	<i>T. trichuris</i> .	Number of ova unchanged.
7.	Mary Delgado	Before	.....
	Mary Delgado	After	.....

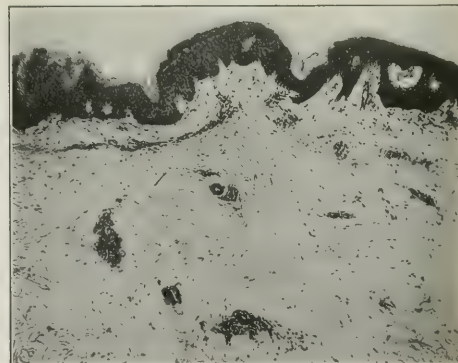


FIG. 11.—Another lesion after treatment (from Case 7), low power, showing resolution complete. The section is practically that of a cicatrix. Note normal appearance of skin.

SUMMARY AND CONCLUSIONS.

From the preceding study we find that the administration of salvarsan resulted in clinical improvement in four of the five patients treated.² The other case ended fatally from the result of accidental burns before observations could be completed. The two cases in which the disease was least advanced showed the best results. One of the controls remained unchanged in condition and the other grew steadily worse and finally died.

In case seven, *Bacillus lepra* disappeared from the nasal secretion after treatment. Cases one, two, five, and seven showed partial or complete resolution of the specimen nodules examined after treatment.

In view of these experiments we can probably form the following opinions:

1. In cases where the patient is not too weakened from the disease, salvarsan may be administered without harm.

2. Some improvement may be expected, especially in early cases.

3. We have no evidence that such effect of the drug is in any way specific or permanent.

4. "Arsenic has long been employed in leprosy," to quote from our preliminary note on this subject, "and we have no evidence that salvarsan is superior in its action to the other forms of arsenic which have been used by previous observers."

In conclusion the author wishes to acknowledge the help of Mr. Finley M. Eastman in the tiresome work of preparing the large number of specimens examined, and to thank Dr. M. Couret for making the photomicrographs accompanying this paper.

HELIOOTHERAPY.

By A. MacKENZIE FORBES, M. D.,

Montreal,

Lecturer in Orthopedic Surgery, McGill University; Surgeon in Charge, Children's Memorial Hospital; and Surgeon in Charge of Orthopedics, Montreal General Hospital.

AND G. G. COPELAND, M. B.,

Montreal,

House Surgeon, Montreal General Hospital.

Heliotherapy is the treatment of disease by means of the sun's rays. General treatment by fresh air in conjunction with sunlight is not a new thing, but heliotherapy as understood to-day, differs from treatment by the general tonic action of fresh air and sunlight, in that it is treatment of a local condition by the direct rays of the sun. Sunlight, as we all know, is composed of luminous and other rays, some of which, while invisible to the eye, are known to be curative agents. Those who practise heliotherapy make use of this beneficial action of the sun's rays to treat their patients.

The local action of the sun's rays in the treatment of disease is not a new thing. Doctor Rollier,¹ at Leysin, has been treating patients by this method for nine years; others have adopted the same method of treatment. To our certain knowledge, Dr. B. E. MacKenzie, of Toronto, has advocated the theory of this form of treatment for some years.

¹The writer has not seen any of the cases for some months and cannot speak regarding their recent history.

²*The Child*, July, 1912.



FIG. 1.—This patient was suffering from an enormous granulating wound over the spine. Penetrating this wound was a sinus leading to a tuberculous abscess which lay on the front of the vertebral column. This complicated Pott's disease of the spine. The patient is being treated in a plaster jacket with a large window which is shown in this illustration as being covered with glass. The granulating surface is shown to be practically healed.

Doctor Rollier's *modus operandi*, as described by Gertrude Austin in *The Child*, is as follows: In treating surgical tuberculosis he makes his patients lie basking in the sun in a state of nudity for hours at a time, after they have been acclimatized to this



FIG. 2.—This illustration shows a tremendous granulating surface which is covered with a glass window whose frame was prepared with plaster bandages.

treatment. The patients in his clinics seem to love this form of treatment, believing that the rays of the sun not only take away their pains but cure the disease from which they suffer. Under this treat-

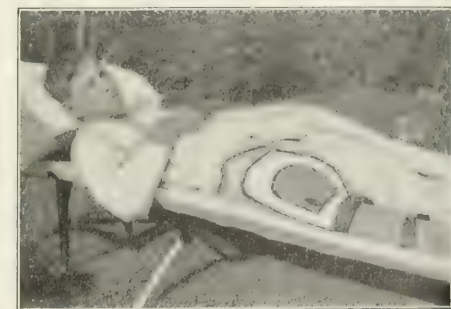


FIG. 3.—Heliotherapy in treatment of tuberculous lesions opening on the skin; special glass apparatus.

ment the patient's improvement is said to be rapid, appetite increases, fever disappears, the red corpuscles increase in number and the hemoglobin in quantity, and the patients increase in weight and general condition.

Statistics of the result of treatment at Leysin were published in *Presse médicale* for April 30th last. Those interested in this subject should refer to them, as it is not of these that we would speak, but rather of our own experience at the Montreal General Hospital. We have had three patients suffering from most discouraging conditions, and these three have been treated by the direct action of the sun with so great advantage that we desire to bring the means of treatment adopted in these cases before your notice.

At Leysin, apparently, it has been the idea to expose the nude body to the sun's remedial rays; unfortunately the three patients whom we have treated, have been suffering from open wounds which, though apparently unhealing, have been submitted to the local action of the sun's rays for their healing. The first patient whose photograph illustrates this description was suffering from Pott's disease of the spine. An attempt was made to immobilize the spine by operative procedures. Shortly after this a cold abscess broke through the incision to the spine, laid the unhealed wound open, and made it certain that healing by granulation, and by this alone, could be expected. Some weeks were spent in treating this wound by ordinary measures, but the patient's general condition seemed to be getting worse daily and no attempt at repair was being shown in the wound.

The second patient had been operated upon for tuberculosis of the great trochanter. Everything went well until a few days after the operation, when the wound became infected with staphylococcus and broke down, discharging freely a large amount of pus. One curious thing was noted, however; tubercles were continually being formed on its gaping surface. Several of these were removed, and microscopical examinations demonstrated clearly that they were tuberculous in nature. Here, because we were dealing with an open wound, a glazed window was made in the plaster supporting cast in which he was being treated, and the patient submitted to the sun's rays. This treatment proved to be most efficacious. In spite of the fact that the patient was suffering from a grave pulmonary lesion, his general condition improved and no further formation of tubercles was noticed, those already present completely disappearing and granulations forming over the deeper parts of the wound.

The third patient pictured here is that of a boy who has suffered from tuberculosis of the hip for some months, possibly years. He could not be persuaded to adopt the tonic fresh air method of life which was recommended to him, but returned some months after treatment was initiated, with several sinuses leading to the hip joint. For his treatment also heliotherapy was prescribed, and it is notable that both his local and general conditions have improved since he entered the hospital.

The statistics furnished from Leysin do not satisfy us; the report of the improvement of but three patients at the Montreal General Hospital is not

sufficient to prove the efficacy of this form of treatment, but these few lines should draw your attention to the fact that the local action of the sun's rays may be, in fact, is, probably, of great curative value. Let us then use it.

485 GUY STREET.

THE REMOVAL OF URETERAL STONE BY CYSTOSCOPIC METHODS.*

By BRANSFORD LEWIS, B. S., M. D.,

St. Louis.

Professor of Genitourinary Surgery, Medical Department,
St. Louis University.

The methods currently in use for the removal of stone from the ureter are included under the following heads:

1. The expectant plan.
2. The operative plan (by incision).
3. The cystoscopic plan.

While there is considerable difference of opinion among practitioners as to the relative advantages and possibilities of the expectant and operative plans, there is no doubt that they both receive due consideration in the modern writings on ureteral stone, and are given their meed of praise or condemnation, as viewed by the respective authors. The third plan, however, is not treated with such consideration. Most of the modern contributions on ureteral surgery, both textbooks and essays, either fail to mention it altogether, or allude to it in such a way as to indicate that it is a feat more or less dubious and untrustworthy; that, although it has been accomplished, it is so improbable as to render it a negligible quantity as a regular procedure.

Thus, Buchanan (Blocking Stones in the Lower End of the Ureter, *Medical Record*, March 20, 1909), in advising on the course to be pursued, says: "We must decide that every patient whose condition is not too urgent should be allowed to wash out his own stone by drinking either distilled water or the water from an appropriate spring. If this treatment should fail, we turn to the operative treatment for relief."

Deaver, in reporting his interesting experience with five cases of ureteral calculus (*Surgery, Gynecology, and Obstetrics*, April, 1906), discusses the application of the two methods, expectant and operative, but does not allude to the cystoscopic. The nearest he comes to it is to say that, "In the female, the urethra can be dilated sufficiently to admit suitable forceps, or even the finger (*sic*), and after slightly incising the vesical orifice of the ureter, the calculus can usually be extracted without much difficulty." It is gratifying to note the evidence of a change of heart in this eminent authority, in his discussion, at a later date, of Miles Porter's paper on Kidney and Ureteral Stones (*Journal of A. M. A.* p. 1696, November 12, 1910), when he says: "I make an incision through the linea semilunaris, and it is a simple thing to bring up the ureter, but not to get out a stone, especially when it is near the junction of the ureter with the bladder, or in the

*Read before the American Urological Association, April 3, 1912.

bladder wall. One of the hardest operations I have done lately was one in which I had to remove a stone lodged in the ureteral orifice. I did the suprapubic operation. The operating cystoscope appeals to me strongly."

Keyes (*Genitourinary Diseases*, 1904) makes no mention of cystoscopic methods of removal of ureteral calculi. Greene and Brooks (*Diseases of Gen-*

likely to deprive him of the chance of recovery, or does it, in certain instances, offer him the opportunity of relief without the application of a heroic major operation? The people have a right to a decision on the subject.

Bearing on the question, it may be asked whether the other methods are all sufficient; and if they are innocuous? If not, there is both room and need

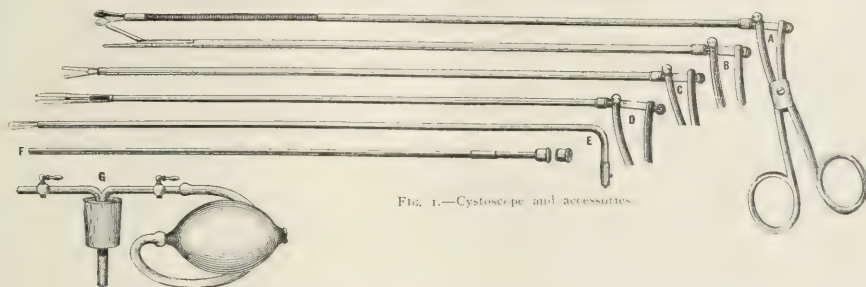


FIG. 1.—Cystoscope and accessories.

itourinary Organs and Kidneys, 1908) fail to mention them, although they invoke the possibilities of urethrovaginal access in saying (page 296): "Occasionally, operating through the bladder a stone may be removed from the ureter by the finger or by the use of long narrow forceps, if the mouth is, as occasionally happens, dilated."

Morris (*Diseases of the Kidney and Ureter*, ii, p. 407), apparently gives no countenance to the cystoscopic plan, but says: "If a calculus is known to be blocking the ureter, it ought to be removed without delay by one of the methods of extra-peritoneal ureterotomy if it cannot be extracted through the renal pelvis. There is no medicinal treatment which is of any use, or which affords any hope of saving life or the integrity of the kidney when the stone is impacted in and not simply passing down the ureter. On the other hand, extra-peritoneal ureterolithotomy is highly successful, and will probably become almost as uniformly practised as nephrolithotomy."

The fact that cystoscopic methods of removal are either held in slight esteem or are treated with

for the third method, provided it has a modicum of success to justify it. Lester Leonard (*Journal of A. M. A.*, January 25, 1909), who has had much experience with ureteral calculi, in championing the cause of the expectant plan, declares that "The results obtained by this course of treatment show that in fifty per cent. of the cases of urinary lithiasis presenting marked symptoms, natural forces are capable of expelling the calculus." Granting that this is true, what of the other fifty per cent. of the cases? The same author evinces a wholesome respect for the seriousness of open operations in his arguments and allusions to them. He says: "If Nature is capable of expelling these calculi in so many instances, why should these patients incur the grave risks of operation on the ureter? The detection of a small ureteral calculus is not an indication for operation unless urgent symptoms are present, since its size makes it possible, and probable, that Nature will expel it. It is preferable to permit Nature to accomplish the expulsion rather than submit the patient to the risks of operation."

From other sources, possibly less biased by the vocation standpoint, we receive information on the seriousness of cutting operations for ureteral calculus. Deaver mentions that "In one of Freyer's patients the ureter was exposed by incising the vagina, but the stone slipped farther up the ureter and could not be extracted. It was, however, found in the dressings on the following day; but pelvic cellulitis developed, and the patient had a very slow convalescence, and when last seen still suffered from kidney symptoms."

Deaver's own experience, as related by himself (*ibidem*) indicates that all is not plain sailing in such work, even in the hands of so expert an operator as he. Referring to Case III, in which he had begun by lumbar incision, he says:

"A stone was located in the vesical end of the ureter close to the bladder wall. After many attempts to dislodge the stone, either into the bladder or by drawing it up into the ureter, all of which were unsuccessful, the wound was covered and the

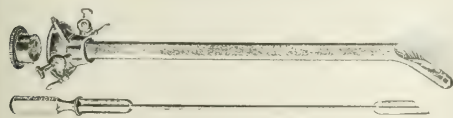


FIG. 2.—Lens telescope.

studied indifference by many writers of the present day, is apparent.

The question arises: Does this represent the deserved status of this method? Is it a nonentity, meriting oblivion, or should it receive the recognition which the history of its use has earned for it—with a just estimate of its limitations and its possibilities? Is it a method of accomplishment or of theory only? Does it afford advantages, in certain cases of ureter calculus, not possessed by other methods, or is it a failure in all? Is it a menace to the patient, dangerous to his life and liberty, and

patient placed in the dorsal position and the bladder opened suprapubically; the vesical orifice of the ureter was incised slightly, and by pressure from behind the stone was finally brought into view and delivered. Evidently, here was a case in which, although the stone was located 'in the vesical end of the ureter,' two considerable cutting operations were required to afford access to it and to effect removal."

In another case of the same author the symptoms were referred to the left side. Although an x ray showed a dense shadow in the region of the right kidney, "an oblique incision was made in the left flank; the calculus was found impacted three cm. below the pelvis of the left kidney. An effort was made to work the stone up into the pelvis but failed; the kidney was delivered and an incision was made horizontal to the poles into the pelvis, and scoop and forceps were used to deliver the stone, but failed. On palpation, the stone was felt in the previous location; an incision was then made in the long axis of the ureter, over the calculus, and the same delivered. The patient did well for three weeks, when he was seized with severe pain in the right loin, and in a very short time became uremic and died. Autopsy showed an impacted stone in the right ureter."

No cystoscopy had been carried out in this case; and the second stone had not been discovered until autopsy. Cystoscopy was evidently needed in this case, and whether capable of removing the stones or not, might have helped much in attaining a complete diagnosis.

A. B. Isaacs (*Medical Record*, June 19, 1909), reports his experience with four cases of ureteral calculus. In the first, in a girl of fifteen years, the symptoms referred to the left kidney; cystoscopy and catheterization; right ureter clear, left obstructed near the lower end (at 1.25 inch). First, nephrotomy on left kidney; sound passed down ureter through incised left kidney met with same obstruction as before. Further operation was postponed two weeks; then incision disclosed phosphatic calculus, three quarter inch long; delivered; successful recovery. While giving consideration to the expectant plan, this author apparently recognizes no place for cystoscopic methods of removal, as he does not mention them in connection with the reports of any of his four cases of ureteral stone, although all of these were in females and located toward the lower end of the ureter.

One of the most striking cases, showing the unlooked for complications that may occur in connection with the open operation for ureteral calculus, even after the procedure seems to have been brought to a successful and satisfactory issue, is graphically related by Dr. A. V. Moschowitz (*Annals of Surgery*, December, 1908); a brief abstract is herewith given:

Operation, July 20, 1908; bilateral ureterolithotomy, removing two calculi from the pelvic portion of each ureter, through extraperitoneal incisions. Small red rubber drainage tube used for drainage on each side, a small strip of iodoform gauze being pulled through each tube. One week after operation, the left tube was removed, coming away easily; but was followed immediately by a tremendous hemorrhage, which stopped for an instant, and then re-

curring in sufficient quantity to fill a two quart pus basin half full. I promptly introduced a finger, which controlled the hemorrhage at once.

The patient was then anesthetized, and the wound reopened. A hole sufficiently large to admit the tip of the little finger was found in the external iliac artery, at a point where it was pressed upon by the drainage tube. The vessel was ligated above and below the hole with No. 3 catgut. I was beginning to congratulate myself on the fortunate outcome of a disagreeable accident, when I lifted up the sheet with which the patient was covered; the sheet happened to catch in the safety pin, which pierced the tube on the right side, and pulled out the tube for not more than half an inch. There promptly ensued an identical hemorrhage. The same conditions were found on this side, and exactly similar steps were resorted to to control the hemorrhage. It is, I am sure, needless to say that all pulsation ceased below the seat of the ligature, and both lower extremities became blanched. After the usual abdominal dressings had been applied, both lower extremities were wrapped in cotton and bandage, and patient placed in bed, with legs and trunk slightly elevated. Despite the formidable hemorrhages, and in spite of the enormity of the operation, the general condition of the patient was very fair. On the evening of the same day the toes were warm, of a delicate pink hue, and capable of slight active motion. On the following day, slight femoral pulsation was to be felt, and on the third day an occasional flutter was noted in the dorsalis pedis artery. Thereafter his convalescence was uneventful; recovery.

The author attributes the hemorrhages to the pressure of the drainage tubes against the external iliac arteries with resulting perforation of the vessels. He does not tell us how much sleep he lost in anticipating the possibility of gangrene of the lower extremities, during the next following period, but he says: "The case gave me some very anxious moments and the patient can well be congratulated upon the fortunate outcome."

Peterkin (*International Journal of Surgery*, February, 1909) reports three very instructive cases along this line, showing a chapter of accidents and complications, to which it is possible for such operative procedures to lead; including postoperative shock after lumboilioinguinal incision and the removal of ureter stones; sloughing of stitches, reopening of the wound, prolonged convalescence, renal colic, severe hemorrhage from the wound thirty-six days after operation; renewed shock and repeated hemorrhage covering several days; sudden filling of the bladder with clots; anuria; perineal section and drainage; incision reopened; discovery of rupture of obturator or internal iliac artery; uremia; labored respiration, pulse 125 to 140; and, finally, in the laconic words of the author, "Vitality was such that I obtained permission from the wife to perform post mortem and obtain specimens"; but to the great surprise of all attending, the patient escaped this fate, recovered, and later passed more calculi, apparently from the left kidney. While the patient recovered, there is no denying that he had a close call, in addition to much suffering; and that the case cannot be adduced in support of the belief that the operation of ureterolithotomy is "no worse than a bad cold."

In contrast, it would seem appropriate to quote from a contribution to *Surgery, Gynecology, and Obstetrics* by a surgeon who describes his Simple Method of Removing Stones from the Lower Ureter in such alluring language as to lead a confiding and innocent bystander into doing it on the slightest provocation. The author naively remarks that

"Some of the proposals which have contemplated the removal of these concretions would make it seem a difficult, if not sometimes a dangerous procedure. I am able to state, as a result of my experience (four cases, at the time of making the report), that stones of moderate size lying anywhere in the pelvic portion of the ureter are very easily found and extracted." And the assurance is given that "The first time the operator follows the method detailed he will be astonished at the ease with which the stone finds its way out of its resting place into the grasp of the thumb and finger"—furnishing, doubtless, another illustration of "uncontrollable impulse,"—this time on the part of the stone, to give itself up into the hands of law and order and be good ever thereafter.

Nevertheless, we cannot forget the numerous cases of complication and distress which have occurred in the hands of competent and experienced surgeons. Moreover, the open operation, simple as it is pictured, has a mortality that cannot be ignored. In twenty-one such operations collected by Fowler, there were three deaths; in twenty-three collected by Deaver there were two deaths; together furnishing a mortality of 10.8 per cent. Tenney has collected 134 cases. It is probable that the estimate of Leonard is correct—that fifty per cent. of 134 patients with ureteral calculus (analyzed in *Boston Medical and Surgical Journal*, February 4, 1904), of which 122 were subjected to cutting operations, giving the following results: One unrecorded; ninety-eight recovered, twenty-three died. Since some of these deaths were due to anuria or partial anuria, existing at the time of operation, it would be unjust to utilize them all as indicating the seriousness of the cutting operation; but, at the same time, it may be justly said that a less serious procedure, such as cystoscopic manipulation, would not have entailed the same amount of shock and risk that the open operation did, in these cases of death. At any rate, the facts are as follows, as stated by the author: Eight patients were operated upon while suffering from total anuria, and three from partial anuria, making a mortality of eleven deaths in twenty-one cases, or fifty-two per cent. operated upon for anuria.

Seven out of the fifteen patients who were distinctly stated to be suffering from fever and pus in the urine at the time of operation died, making an apparent mortality of forty-seven per cent. in cases operated in for pyelitis or pyelonephritis. Probably there were more than fifteen cases, but I have included only the cases in which these facts were distinctly stated. In the nineteenth case the bladder was opened above the pubes and the ureteral orifice was cut, opening into the general peritoneal cavity. The patient became maniacal, passed no urine on the eleventh day, died on the thirteenth, never had any fever, but extremely rapid pulse. The twenty-first patient was under chloroform nearly two hours. It showed fatty degeneration of heart muscle at autopsy. The twenty-second patient had two hours of chloroform and ether anesthesia, and also showed fatty degeneration of the heart muscles at autopsy. In summing up, the author says: "If we subtract twenty-one cases of anuria, and the fifteen cases

of pyelonephrosis or pyelitis, we have left eighty-five cases operated in for stone in the ureter, apparently without grave complications, and in which the results are stated. In these eighty-five cases there were five deaths, giving a mortality of a little less than six per cent." Such an interpretation, however, would seem unduly liberal in exempting from blame the cutting operation. Pyelitis and pyelonephritis are frequent factors in ureteral stone cases, and it seems hardly proper to cast out of the reckoning seven of the deaths after operation on that account. (If the conditions were severe and unfavorable at the time of operating, so much the more reason for first applying the less heroic measures.) Therefore, if we add the fifteen cases so affected, together with their seven deaths, to this series, it gives twelve deaths in 100 cases, or twelve per cent. mortality, including a liberal deduction for anuria and similar conditions.

While the medical profession may well be gratified at the present day ability to open the abdomen with a large degree of success and relatively small mortality, that should not detract from its gratification at being able to hew still closer to the line of safety, in certain cases, and remove ureteral calculi by less heroic measures—by the expectant or the cystoscopic plan. If either proves successful the desired object is attained and "all is forgiven"; if unsuccessful, no harm is done and the patient is still receptive for the operative method, and in no worse condition for it. It is probable that the estimate of Leonard is correct—that fifty per cent. of ureteral calculi are capable of being relieved by the water wagon measures of the expectant plan; but what of the other fifty per cent.? Certainly it should not be immediate resort to the operative plan. The logic of the situation is against such a course; and the records of medical history tell us of a sufficient number of successes attained by cystoscopic measures to warrant their use under conditions readily recognized as favorable for their success. Without going into the details of individual cases (which are attainable in the literature), we know that such successes have been reported by Howard Kelly,¹ Moschowitz,² Young,³ Kreissl,⁴ Casper, Kolischer, Schmidt, Braasch, Bransford Lewis,⁵ and a number of others. I have never heard any dispute or denial of these records. They embrace successes by cystoscopic methods ranging from the ureteral injection of oil or glycerin to the use of forceps, dilators, scissors, sounds, and other cystoscopic accessories; and have referred to calculi impacted in the ureter at various points. Naturally, the lower the impaction in the canal, the more accessible to cystoscopic manipulation and the greater probability for the success of the method. While the low situation makes it relatively easier for cystoscopy, it is generally agreed that it is the low lying stone that is most difficult of access and removal by the open operation. There are three points of relative narrowing or physiological constriction in the ureter, at which calculi in their descent are

¹*Journal of the American Medical Association*, March 1, 1909.

²*Medical Record*, May 1, 1909.

³*American Medicine*, August 6, 1902.

⁴*Chicago Medical Record*, March, 1899.

⁵*Southern Medical Journal*, June, 1909. *Lancet*, March 4, 1905.

prone to lodge; but, according to statistics on the subject, the lowermost of these, namely, the intramural portion, is the one at which the great majority are arrested. Hazen (*Long Island Medical Journal*, June, 1908), quoting from the contributions of Schenck and of Tenney, based on surgical and post mortem reports, says that "The vesical end of the ureter is the most frequent seat of arrested calculi. They are found here more frequently than in all other situations put together; and over two and a half times as frequently as at any other single location." In studying the 134 cases referred to, Tenney (*ibidem*) says that thirty-five were caught at the first isthmus, eighteen at the second, and seventy-three at the third (lowermost).

One illustrative case of cystoscopic removal of ureteral stone may here be cited, pertaining, as it did, to a member of our own profession and the better able, therefore, to appreciate the conditions prevailing and the ease and promptitude of final relief:

Dr. W. L. Goddard, of Salisbury, Tenn., sixty years of age, consulted me in October, 1908; referred by Dr. E. M. Holder, of Memphis. The patient said that he had first noted urinary disturbance about twelve years previously, when he had had severe colic in the left renal region, lasting several hours and requiring the use of morphine hypodermically for relief. Since then he had had a number of similar attacks. One small stone had been passed and caught by him, a year before.

During the past nine months the patient had felt severe pain in the region of the left ureter, low down, never having been free from it at any time during that period, except when asleep. Examination: Both urines clear and free from pus or blood. Cystoscopy easy. Right ureteral orifice normal. Left orifice showed a small, black plug embraced in its lumen, and emerging slightly—plainly visible through the observation (universal) cystoscope. It was shown to and clearly seen by several physicians, including Doctor Hopkins, Doctor Burford, and Doctor Lund, who were in the office at the time. After that the universal cystoscope was replaced with the operative cystoscope, through which an alligator forceps was passed and inserted into the ureteral opening. It was stretched widely within the orifice, and immediately the little plug popped out into the bladder, followed by a spurt of yellow, purulent urine, plainly visible to the eye. The plug was later removed from the bladder, and proved to be a spiculated uric acid calculus about the size of a grain of wheat.

The retention of the stone in the ureter seems to be explainable on the ground of the little pointed spicule that projects from one side of it and was probably buried in the wall of the ureter. It is interesting to relate, that immediately the stone jumped out of the ureter the patient remarked, "That is the first time in nine months that I have been free from that pain." The pain did not recur afterward. For the sake of confirmation, the patient was retained in the city for two days, after which time the left ureter was catheterized, the catheter passed easily to the kidney pelvis and drained clear, healthy urine therefrom. He then went home. He suffered no ill effects from the cystoscopic manipulation, either at the time or afterward; and the relief it afforded was complete.

Obviously, it cannot be claimed that cystoscopic endeavor will always meet with such a happy outcome, nor one so promptly attained. The injections or ureteral dilatations may have to be repeated several times, with the stone descending in successive steps,

so to speak, until its final expulsion or extraction from the ureteral orifice. But even that, it may well be argued, is better than abdominal section for securing the same end. Rigdon (*California State Journal of Medicine*, November, 1909) puts the case succinctly and fairly when he says: "Before any cutting operation is advised repeated efforts should be made to dislodge the stone by means of the ureteral catheter, the injection of petrolatum, etc. If the calculus can be brought to the bladder wall it may be possible to remove it by dilating the ureteral orifice and applying forceps through the operating cystoscope."

That proposition would seem to be logical and fair enough; and yet is it practised to any great extent at the present time? I venture to guess that not one ureteral stone in fifty is accorded such considerate treatment. With few exceptions they are given the short route, from expectant to operative plan.

In thinking over the matter it occurred to me that a somewhat analogous situation was furnished in respect to nasal, laryngeal, bronchial, or tracheal surgery, in which foreign bodies were lodged in these parts. I requested a brief statement on the subject from my friend, Dr. William E. Sauer, who has had much experience in such work, and who has kindly given me the following:

Laryngotracheobronchoscopy has been developed in the past fourteen years, with Killian as the pathfinder. This procedure is not only familiar to all laryngologists, but many surgeons and physicians are satisfactorily employing it.

Its chief use has been in the diagnosis and treatment of foreign bodies in the trachea and bronchi. Up to the present time 595 cases have been reported in which the bronchoscope has been employed in the treatment of foreign bodies in the bronchi, with a mortality of thirteen per cent. In the more recent cases the mortality has been reduced to 0.6 per cent. This is a decided improvement over the prebronchoscopic period. The mortality of aspirated foreign bodies before the introduction of the bronchoscope was very high. According to the statistics covering 770 cases compiled by Preobraschanski it was fifty-two per cent. If those cases in which the patients died of lung complications caused by foreign bodies were added, in which no diagnosis was made, the percentage would be still higher.

Karewski, in 1893, reported fourteen thoracotomies for foreign bodies, with only two successful cases; and Tuffner, in 1897, reported eleven pneumonotomies for foreign bodies, in ten per cent. of which the foreign body was not found. In four the operations were unsuccessful.

These reports show a remarkable advance in the treatment of foreign bodies in the bronchi since the advent of the bronchoscope. Equally good results have been achieved with the esophagoscope.

The argument that the cystoscopic operative measures are chimerical, too refined, and too difficult for practical utility is not more convincing than when the same argument is applied to the use of the bronchoscope, the esophagoscope, the ophthalmoscope, the x ray apparatus, etc. If any of these several instruments or appliances are needed in a given case and their application offers promise of securing relief, the patient should be given the benefit of their use—irrespective of the ability of one physician or another to use them.

If the march of science depended on all keeping step, science would be a sorry laggard, indeed.

APPARATUS AND MODE OF USE.

It is as practicable to make use of the purposive manipulations of operative cystoscopy as it is to work in other cavities of the body, inaccessible except with the proper apparatus. It is as practicable to dilate a stricture of the ureter as of the urethra—though, obviously, not as easy.

The instrument and accessories, with which I have had most experience, are shown in Fig. 1, and are practically the same, with a few improvements, as the model shown and reported on, in 1904, before the Mississippi Valley Medical Association (*ibidem*). It is used with either water or air as a distending medium for the bladder; and with or without the lens telescope (Fig. 2), according to circumstances or the predilection of the operator. Through the sheath, A, all of the several accessory instruments may be introduced and manipulated while under the eye of the operator, looking through the telescope or the ocular window. The orifice of the ureter may be entered and stretched with the dilator, or incised with the scissors. The alligator forceps may be made to grasp a small stone engaged in the orifice, dislodging it, either by stretching the orifice or by traction on the stone. If the latter is situated higher up in the channel, say within an inch or an inch and a half of the orifice, it is possible to reach it by means of the flexible ureter forceps, modeled after the bullet forceps of old. This is introduced into the ureter closed; is advanced thus along the channel, the curves of which it can trace for the distance mentioned (I have used it as high as two inches in the ureter); when it meets with obstruction it is opened, gently advanced and closed again, and gradually withdrawn—with the hope of bringing with it the recalcitrant object. If not thus accomplished, all is not yet lost.

If a ureteral stricture is interfering with the descent or expulsion of the stone, it may be dilated, either with the metal dilator already mentioned or by means of bougies of increasing sizes, introduced successively into the ureter past the offending part. Afterward, oil or glycerin may be injected through a ureteral catheter, paving the way to easier passage downward for the stone. Cunningham has added an ingenious instrument, in the shape of a flexible sound of metal, with a tip that can be extended after it is brought into contact with the stone, in the hope of making the traction necessary for removal or descent of the stone.

It is not advisable to push the measures to an extreme in the endeavor to finish at one séance. It is preferable to be satisfied with slower progress, entailing less pain or anxiety on the part of the patient. In the interim, until the next essay at removal, he may be instructed to drink plentifully of water and other fluids, and to use a vessel and filter with each urination, in order to catch any stone that may possibly escape.

All the manipulations are carried out under efficient local anesthesia and should not be more objectionable than an ordinary cystoscopy or ureteral catheterization.

At all events, if successful, they are decidedly less objectionable than abdominal section for attaining the same purpose.

550 CENTURY BUILDING.

ANGIOMA OF THE PONS.

A Consideration of Tumors of the Brain.

BY GONZALO R. LAFORA, M. D.,

Madrid, Spain,

Formerly Histopathologist, Government Hospital for the Insane

Angioma of the brain is not as rare a tumor as regarded by some. It is usually a circumscribed tumor with cavernous dilations of its vessels (angioma cavernosum circumscriptum), although there is another variety of diffuse angioma (angioma racemosum) usually arising from the pia mater. Angiomata of the pons are very rare, judging from the few cases yet reported (Enders and Lafora).

The symptoms of tumors of the pons are: Hemiplegia alternans, paralysis of the associated movements of the eyes, hemilateral convulsions, and sometimes, hemianesthesia. The hemiplegia alternans consists here of nuclear paralysis of the facial, trigeminus, or abductors of the same side of the lesion, and hemiplegia of the opposite side, the latter due to the involvement of the pyramidal tract before its crossing in the medulla oblongata. When the medulla is more or less involved by the tumor or merely compressed by it, are added, glycosuria or diabetes insipidus, heart symptoms, such as increase of the number of pulsations (due to paralysis of the vagus nerve), dysarthria, aphonia, dysphagia, and sometimes, cerebellar ataxia. General symptoms of tumor of the brain, as papillary edema (choked disc), etc., are quite rare in tumors of this location, the focal symptoms being dominant. The symptoms of the case to be reported here were more of a focal character.

CASE.¹ (19,705), F. B., negress, twenty-two years of age, married, cook. No family history of interest. Mother died when forty-five years old, rather suddenly; she had not been confined to bed, but had always been ailing. Father alcoholic. Patient had diseases of childhood; reached the seventh grade in school. At the age of nineteen years she married, but as patient led an immoral life, husband and wife separated. She had neither miscarriages nor children. Patient was always impulsive and of ugly disposition; used alcohol constantly, but without becoming intoxicated.

After being for a week in a house of prostitution she returned home, February 3, 1912, showing impulsive attacks, threatening her people and destroying things about her. Four days later was transferred to the Washington Psychopathic Ward and later (February 10, 1912) to this hospital. It has been learned that while at the house of prostitution, patient drank heavily.

The first symptoms observed while at the hospital were a great excitation and confusion. Patient was shouting, singing, and breaking furniture, was untidy, and refused food. She was always coughing and expectorating on the floor large quantities of greenish pus. The urinalysis showed that she was suffering from nephritis.

The condition of the patient remained the same throughout the disease. She refused to eat and had to be tube fed, twice daily; this she resisted. She almost invariably vomited immediately what she was fed. Lavage of the stomach was performed, but the water came back clear. She had a foul smelling, purulent discharge from the nose and mouth. February 28th, she had several slight convulsions; body became more rigid than normal, knees were drawn up, trembling of entire body, respiration irregular and labored, but she did not seem to lose consciousness. The temperature rose to 101° F. and kept at this height with some oscillations until the date of her death, March 3d. The pulse oscillated from 86 to 120, and the respirations from 26 to 32. During these attacks patient was in a stuporous condition, twitchings of the left side of the

¹ Résumé of history by Dr. F. Reed.

face were observed, the left pupil was smaller than the right, but neither reacted to light. Eye movements could not be tested; there was no strabismus; no response to pin pricks or stimulation of any kind; pupils remained rigid until date of her death.

Autopsy findings: (Post mortem examination made eighteen hours after death.) Skull cap symmetrical, wall thickened, especially in the frontal region, diploe congested, inner lamina markedly indented. Sutures well marked. Dura mater not adherent to skull cap; showed an osteoma of the falx and granulations of the outer surface. Pia mater transparent, slight congestion of the vessels. Brain, weight 1,210 grammes; basal vessels not sclerotic; no shrinkage; gray substance moderately pale. The brain substance was of soft consistence and was moist on account of edema. The perivascular spaces of the puncta vasculosa were dilated. The ventricles appeared normal. The vascularization of the corpus callosum seemed increased, but no lesions were found in it. The choroid plexus was slightly cystic. No granular ependymitis. In the midbrain there was observed an increase in the number of vessels in the gray matter around the aqueductus Sylvii. In the pons there was found an area, about eight mm. in diameter, extending into the white matter and part of the gray matter, viz., in the raphé and nucleus pontis, and somewhat into the substantia reticularis; in which apparently numerous punctiform hemorrhages had taken place. The process was fairly well circumscribed (see Fig. 1). In the cerebellum the arbor vitæ showed some dilatation of the capillaries, and the nucleus dentatus some apparent capillary hemorrhages.

The heart showed some dilatation of the cavities of the right side, and atheromatous patches of the aortic arch and of the mitral valve. The other organs were fairly normal, with the exception of the lungs, which showed edema and hypostatic congestion; and the kidneys, which showed nephritis.

The histological examination of the lesion found at the autopsy revealed that this was not a hemorrhagic process, as believed, but a tumor consisting of more or less dilated vessels—an angioma. The tumor was located mainly in

the lumen of which was filled mostly with lymphocytes. The latter vessels seemed to be veins or precapillaries, while the large vessels were undoubtedly arteries (see Fig.

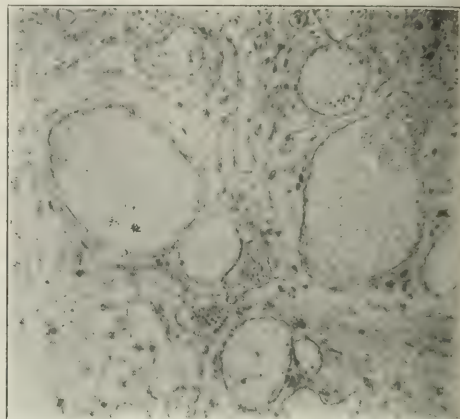


FIG. 2.—Photomicrograph, showing the structure of the angioma of the pons, with its dilated vessels.

2). In the nervous tissue between the dilated vessels, the ganglion cells of the nucleus pontis were arranged concentrically to the vessels, being more or less compressed by these. The walls of most of the vessels showed hyaline degeneration; they contained few nuclei, their structure consisting mainly of concentric layers of a homogeneous appearance. There was no vascular infiltration in the lymphatic spaces of the vessels of the tumor, nor dilatation of the tissue surrounding the vessels. The tumor was somewhat circumscribed, but had no capsule.

Regarding the extension of the tumor it is to be said, that it involved a great portion of the substantia reticularis pontis and the corpus trapezoides (in the tegmental part of the pons); and the raphé, nucleus pontis, and mesial portions of the pyramidal and cerebropontine fibres, as well as of the arcuate fibres (in the ventral part of the pons). The mesial portion of the lemniscus medialis was also slightly affected. The tumor extended inferiorly to the limit between the pons and the medulla oblongata. The Marchi preparations of the midbrain, above the tumor, showed diffuse degenerations of the various bundles, but more markedly affecting the brachium conjunctivum, the lemniscus medialis, and the posterior longitudinal bundle.

The location of the tumor was, therefore, very similar to that of the majority of reported cases of angioma pontis. The case of Enders² showed quite the same localization.

The case previously published by me,³ was also very similar, although the tumor was located more to the left side of the pons and was complicated with an ependymoglioma of the fourth ventricle. According to Enders the formation of angiomata in this location is due to the normal richness of vessels in this region, and its proximities, viz., the posterior perforated space.

These tumors probably exist in the patient from

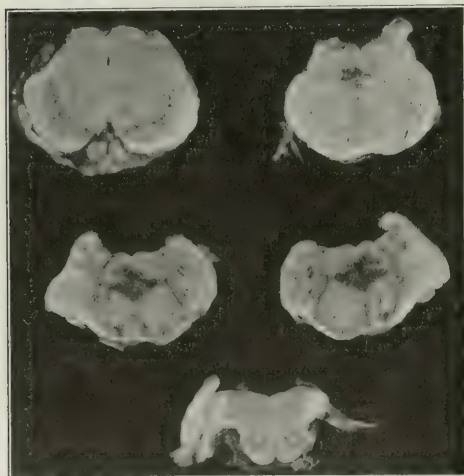


FIG. 1.—Showing transversal sections of the midbrain, the pons (upper and lower portions), and the upper part of the medulla oblongata. The dark spot in the centre of the sections is the angioma.

the raphé of the ventral and tegmental portions of the pons, and extended at the sides in a rhombic shape. In the raphé, lay a very dilated artery, running anteroposteriorly. This gave off one or two branches with cavernous dilatations. The lumen of this vessel was full of red blood corpuscles, while polynuclears were very scarce. Around these large vessels were many others of small size,

²Enders: Ein Angioma in der Brückengegend, *Münchener medizinische Wochenschrift*, lv, p. 1646, 1908.

³Lafora: Obscure Symptomatology with Tumors of the Fourth Ventricle; with Report of a Case of Ependymoglioma of the Fourth Ventricle Associated with Angioma of the Pons, *New York Medical Journal*, November 18, 1911.

birth, but the vessels are not so widely dilated as at the epoch of the occurrence of the symptoms. Later in life, the tumor becoming enlarged gives rise to symptoms, as soon as compression of important structures is produced. The reason why in some people no symptoms are detected until senility, while in others they appear at puberty, depends probably much upon the mode of living and the temperament of the patient (alcoholism, etc.).

Enders states that the interstitial tissue around the dilated vessels of the tumor is usually very loose, a fact which allows the vessels to undergo more or less sudden dilatations; the latter explaining the unexpected appearance of symptoms after the long existence of the tumor (latency of manifestations of the tumor). In the two cases of angiomas of the pons studied by me, I was unable to confirm or establish this explanation of Enders; in both, the nervous tissue around the angiomas showed no retraction or perivascular dilatation (the pieces of tissue were imbedded one or two days after the autopsy, not allowing any retraction by the fixing fluids).

It seems to me that the explanation given by Reichardt concerning the occurrence and latency of symptoms in long standing tumors of the brain is more plausible. According to him, the general symptoms of tumors are not produced by the tumors themselves, but by a kind of reaction of the lymphatic system of the nervous tissue toward the irritative action of the tumors. This reaction produces, as a result, the so called status lymphaticus of the brain, in which the swelling is partial or total (in the proximity of the tumor). This status lymphaticus and its consequence, the swelling of the brain, are the causes of the choked disc, vomiting, vertigo, slow pulse, and other symptoms of cerebral compression. It causes a disproportion between the cranial capacity and the volume of the brain. Now, the production of the status lymphaticus cerebri does not respond to any definite factor concerning the tumor, so far as we know, but it is more an individual response, varying greatly, and depending probably upon many individual factors, among them the metabolic changes, the temperament, etc.; and also upon characteristics of the tumor, as its location, structure, etc. This reaction varies in different individuals, as does the reaction to pain. This explains why large cranial tumors (for instance, endotheliomas of the dura) occur sometimes without developing any symptom, and are first found at the autopsy; and why other small tumors of the same quality develop in other cases in acute clinical picture of cerebral tumor appearing at the very beginning of the formation of the growth. In the first cases the measurement of the cranial capacity and the determination of the volume of the brain and its density does not show any deviation from the normal proportion,⁴ while in the second class of cases the status lymphaticus which is produced as a reaction toward the small tumor gives rise to a conflict between the increased volume of the brain and the invariable capacity of the skull. The swelling of the brain is very often a

transitory state, and seems to be due to particular changes in the imbibition of the tissue fluid and its physicochemical state. It is very different from edema of the brain. The condition of swelling has been found, not only in tumors of the brain, but in other states related to general metabolic disturbances, as for instance, in catatonics dying suddenly (Rosenthal, Fankhauser); in cases of the so called Nonne's pseudotumor cerebri (Reichardt); in suicides (Fankhauser); in infectious diseases, status epilepticus, cerebral syphilis, delirium tremens, etc. The status lymphaticus may take place only in one hemisphere or around the tumor, thus giving rise to marked focal symptoms. This seems to be the case in angiomas of the pons. The focal symptoms developed in the case reported here correspond in a striking degree to those of the acute hemorrhagic polioencephalitis of Wernicke, a disease usually due to chronic alcoholism, and developing suddenly. In fact the projectile vomiting, the slight convulsions, the rise in temperature, the pupillary rigidity and inequality are constant symptoms of that disease; they depend upon the production of punctiform hemorrhages in the midbrain, especially in the gray matter surrounding the aqueduct of Sylvius and affecting the various nuclei of the third nerve.

In the case reported here, the lesion, to the unaided eye, appeared to be that of the polioencephalitis hemorrhagica of Wernicke, of the form termed inferior, in which the punctiform hemorrhages take place in the gray matter of the pons and medulla oblongata, affecting only slightly the nucleus of the third nerve. The histological examination, however, showed that the process was not a hemorrhagic one, but an angioma of the pons. The lower location of the tumor explains why ophthalmoplegia externa (paralysis of the eye movements) was probably not produced.

Summarizing, we have the case of a young woman, who after a period of a dissolute life, becomes, rather unexpectedly, highly excited, impulsive, and violent. Later, projectile vomiting, fever, pupillary rigidity with probable preservation of the eye movements, and slight convulsions were observed. The patient died after a month's illness, from exhaustion. At the autopsy an angioma of about eight mm. in diameter is found in the pons, lying in the raphe, and involving the substantia reticularis of the tegmental portion of the posterior part of the nucleus pontis and of the ventral portion of the pons.

6 CALLEA DE GOYA.

VENEREAL DISEASES; A SANITARY AND SOCIAL PROBLEM.*

BY FREDERIC BIERHOFF, M. D.,
New York.

Although the full measure of the gravity of venereal diseases as factors in the impairment of health has not been appreciated until comparatively recent years, the recognition of their transmissibility, and the attempts to limit, or to prevent the

⁴According to Reichardt, the brain, normally, is from ten to six per cent. smaller than the corresponding cranial capacity. In cases of swelling, the difference is sometimes two per cent., while in cases of brain atrophy, it is over sixteen per cent.

*Read at the meeting of the National Conference on Charities and Correction, Boston, June, 1911.

transmission of infection therewith, are of very ancient date. Moses, almost four thousand years ago, at the time of the Exodus, formulated regulations with this end in view. Solon, in ancient Athens, founded brothels and put them under the control of the State, hoping thereby to protect the virtue and purity of the Athenian women from assault and insult, and to safeguard the youth of Athens from venereal diseases.

Dufour tells us, in his *History of Prostitution*, that it was the fear of venereal diseases which was chiefly responsible for the great prevalence of sexual perversions during the days of ancient Greece and Rome.

It is a question whether the epidemic, termed *lues inguinaria*, which raged in France, Germany, and Italy during the sixth and later centuries, was not really a form of syphilis. The spread of the plague was helped tremendously by the activities of the prostitutes, and the French government was forced to take measures to lessen, by police supervision of the prostitutes, its spread through their agency.

We are told further that "leprosy" had, by the latter part of the fifteenth century, become a regular accompaniment of prostitution, so that, on April 15, 1488, all "leprosy" women were ordered to leave the city of Paris, before the Easter festival. It is a question whether this so called leprosy was not, in reality, syphilis.

There are some who maintain that these epidemics were not the syphilis of to-day, but that this disease was brought to Europe by the returning sailors of Columbus, and that it is a disease of American origin.

Throughout the history of the world there is the trail of prostitution, with its attendant venereal diseases.

Owing to the lack of reliable statistics upon this topic, it is impossible to make any accurate statement concerning the prevalence of venereal diseases, at the present day. That they are very prevalent, however, is the opinion of all who have any opportunity to study this question. Yet, all of their statements affecting civil life are and must be purely conjectural.

Morrow has stated that, in 1900, about ten per cent. of all the cases treated in five of the largest hospital dispensaries of New York city, were venereal diseases; that one eighth of all patients, inmates of hospitals, were so as the result of venereal diseases; he further estimated that there are annually, 200,000 venereal patients treated, in New York city. I do not believe this estimate to be exaggerated.

Valentine estimated the annual money loss in New York, as the result of venereal diseases, at sixty million dollars.

Mewborn found that, in 1900, in twelve New York dispensaries, 23,626 cases of gonorrhea and syphilis were treated in the dermatological departments, an average of twenty-seven per cent. In other departments, 15,000 cases were treated, of which 0.5 per cent. were venereally diseased. He states further, that, during 1905, there were treated, in eight of our large dispensaries, 44,517 venereal cases, 11.5 per cent. of their total patients.

Blaschko (*Mitteilungen der Gesellschaft für die*

Bekämpfung der Geschlechtskrankheiten, No. 1, pp. 11, 12) states that there are annually, in Berlin, out of every one thousand men between the ages of twenty and thirty years, two hundred who contract gonorrhea, and twenty-four who contract syphilis.

In making use of such statistics, however, it must be borne in mind that, owing to the laxity and incompleteness of the methods of diagnosis in use in our dispensaries and hospitals, their value can be only relative. Were accurate examinations made, I feel sure the percentage would be higher.

The only accurate statistics at our disposal are those of our land and naval forces and those of other countries, and these prove, at a glance, that the total absence of any attempt to check the spread of venereal diseases is disastrous.

Year in and year out, the surgeons general of our forces draw attention to the fact that venereal diseases are the greatest factors in the disability of the troops; to the fact that the prevalence of these diseases among our forces is simply the reflection of conditions in civil life, and that the army and navy must look to the civil authorities for aid in stamping out these diseases, since the infections are contracted at the ports at which our ships touch, and in those cities which contain, or which are near army posts.

Let me quote from the report for 1910 of the surgeon general of the army. He states (p. 16): "The total number of admissions was 14,640, representing 12,605 cases, with an admission rate of 196.99, compared with 194.13 for the preceding year, and a constant noneffective rate of 13.07 compared with 11.65. Disheartening as is this record, it is, if one may accept the opinions of high medical authorities, exceeded by the prevalence of these diseases in civil life and it will be very difficult to make any substantial improvement in the record of the army in this respect until the State and municipal authorities are aroused to the necessity of taking serious sanitary measures to restrict their ravages." He states further (p. 60): "Reports since the Spanish-American war show a steady and progressive increase in this class of diseases, so that the admission rate, which was 84.59 per mille in 1897, has now reached the enormous figure of 196.99 per mille. These figures are out of all proportion to those which obtain in the European armies, the rates for the latter being according to the latest obtainable information:

British (at home 68.4)	75.8
Austro-Hungarian	54.2
French (at home 27.8)	34.8
Prussian	18.7
Bavarian	15.2

In the report of 1910 of the surgeon general of the navy, we find that there were during the fiscal year 1909, 1910, admitted for

Syphilis	1,476
Gonorrhea	5,861
Chancroid	1,573

The rate per mille was 160.40, the largest upon record in the navy. During the preceding year it was only 91.81 per mille; but the increase is, no doubt, due in part to the greater care in examination, and to the more conscientious reporting and

tabulation of venereal diseases than was formerly the case.

The population of Greater New York, according to the census of April, 1910, was 4,766,883. No data are as yet obtainable concerning the number of males between fifteen and forty-five years of age—the period of greatest sexual activity. In the census of 1900 it was, however, a small fraction under twenty-seven per cent. of the total number. Applied to the figures of 1910, this would give us 1,287,058 males between the ages of fifteen and forty-five years. If now we apply to these figures the average of venereal infections in both army and navy, 178.69 (or 17.86 per cent.) we have 229,868 males, in the greater city of New York, with venereal diseases. And if we add to this the number of infected males over forty-five years of age, and the cases of infected females, you will see that Morrow's estimate of 200,000 has long since been passed. Personally I believe that nearer 500,000 cases of venereal disease occur annually, or are under treatment every year, in greater New York.

It has been truthfully said that venereal diseases are the only ones transmitted in full virulence to innocent children and equally innocent wives. One of the saddest commentaries upon our present day life is the fact, so often observed in our city, that *guilty children and guilty wives* are so often the agents for the transmission of venereal diseases.

It has, furthermore, been truthfully said that most cases of locomotor ataxia are traceable to syphilis, and that almost all the paralyses in men under forty years of age, are traceable to the same source; that syphilis is responsible for a vast number of deaths reported as due to other diseases, the true causative factor being unrecognized; that a very large part of sterility, in the female, is due to gonorrhea, and that this might, also, be applied to the male; that a large part of all gynecological operations is more or less directly traceable to gonorrheal infection; that eighty per cent. of cases of ophthalmia neonatorum are said to be of gonorrheal origin, and that twenty-five per cent. of all total blindness in this country is said to be due to the gonococcus.

So much for the prevalence of venereal diseases, and for their baleful results. What are the sources of venereal infections? It is true that they may be transmitted innocently. This is particularly true of syphilis, which may be transmitted by direct, or by indirect contact, and it is not at all necessary to come into direct contact with the syphilized individual. An inanimate object may transmit the virus. This is far less true of the poison of gonorrhea, except in the case of young, female children.

By far the large majority of infections with venereal disease are acquired by direct contact during sexual intercourse; and the most prolific disseminator of these diseases is the public, or common prostitute. This is the view of the greatest authorities upon the problem of venereal diseases.

Thus von Düring, one of the most ardent opponents of regulation of prostitution, says (*Prostitution und Geschlechtskrankheiten*): "The most frequent source of the transmission of venereal diseases in illicit intercourse, is prostitution."

Fournier (quoted by Blaschko, p. 84) found, in

1866, that, of 387 cases of gonorrhea seen among his private patients, only fourteen per cent. were infected by prostitutes. But almost all the other sources he quotes might be classed as clandestine prostitutes. Of 873 cases of syphilis, seen in 1860, among his hospital cases, however, the prostitute was the source of infection in seventy-seven per cent.

Blaschko (*Syphilis und Prostitution*) found in 100 cases of gonorrhea, that the prostitute was the source of infection in eighty per cent.; of 100 cases of syphilis, in eighty-three per cent.; of 100 students, with various venereal infections, in sixty-six per cent.

Von Löblowitz (quoted by Bettmann, *Handbuch der sozialen Medizin*, vii) speaking of Vienna, says that forty-five per cent. of its prostitutes are constantly in the infectious stage of syphilis.

Bettmann (*loco citato*) says: "At least one third of prostitutes are constantly syphilitic."

Lesser (*Charité Vorträge*) says: "Prostitution is the chief source of venereal diseases."

Finger (*Blennorrhoe der Sexualorgane*) states that those women who prostitute themselves and are not under "control," or supervision, are the most frequent transmitters of venereal diseases.

Neisser (*Mitteilungen der Gesellschaft für die Bekämpfung der Geschlechtskrankheiten*) says: "Prostitution is the source and starting point to which all venereal diseases may, by longer or shorter routes, be traced."

PROPORTION OF DISEASED PROSTITUTES IN SOME GERMAN CITIES IN 1907.

From Bendig (*Zeitschrift für die Bekämpfung der Geschlechtskrankheiten*, xxii, No. 1).

City.	Population, last census.	Prostitutes under control.	Found diseased.	Arrested prostitutes not under control.	Found diseased.
Berlin	2,040,222	3,692	733 (19%)	2,658	475 (18%)
Hamburg	809,000	920	791 (86%)	1,358	288 (20%)
München.....	538,393	175	36 (20+%)	Not given	207
Dresden.....	514,283	281	426 (151+%)	602	93 (15+%)
Coln	428,503	1,116	672 (60+%)	About 232	33 (3+%)
Frankfurt,a/M	334,951	512	493 (96+%)	700	214 (31+%)
Hannover ...	250,032	210	182 (87%)	378	3 (8%)
Stuttgart	249,286	22	28 (127+%)	2500-700	158
Cheumnitz ...	244,405	76	80 (105+%)	3300-350	123
Charlottenburg	239,512	122	16 (11+%)	544	8 (14%+)

Before leaving this topic, let me read to you the statistics which I have gathered concerning the sources of infection among patients coming under my own observation. They deal chiefly with cases of gonorrhea, since it is much more easy for the patient afflicted with this disease definitely to fix the date of infection, owing to the relatively short period of incubation, and the greater ease in diagnosis, than it is for the syphilitic, who may during the incubation period cohabit with a number of women. Only such patients were included in the statistics as could definitely remember the date of coitus, and

¹In 1909 (*Zeitschrift für die Bekämpfung der Geschlechtskrankheiten*, xi, No. 5, p. 204) it was estimated that all the way from 4,000 to 15,000 clandestine prostitutes live in Munich, 2,076 were known in this year to the police, of these 1,870 were arrested and examined and of these 592 (31.6 per cent.) were found to be diseased, 563 received hospital treatment, and only twenty-nine lived under such conditions that they were permitted to receive treatment from private physicians.

²I have elsewhere drawn attention to the statement of Doctor Winkler, one of the examining physicians of Dresden, that, since the introduction of the most modern, scientific methods of examination and treatment (begun in 1906), the number of cases of venereal disease among the inscribed prostitutes of that city have been materially diminished.

³Annually.

the person with whom the act was carried out. The diagnosis was based upon the finding of the gonococcus in the discharge. The sources of infection were as follows:

	First infection.	Later infection.	Total.
<i>Puella publica</i> (street)	246	325	571
<i>Puella publica</i> (brothel)	189	310	499
<i>Puella publica</i> (kept)	12	64	76
<i>Puella publica</i> (mistresses)	4	..	4
<i>Puella publica</i> (friend)	20	22	42
<i>Puella publica</i> (unclassified)	6	18	24
Wives (visiting their own husbands)	21	31	52
Married women and widows	9	40	49
Divorcees	1	8	9
Fiancees	1	..	1
Working women and servants	93	196	289
"Respectable"—living at home with parents	9	26	35
School girls	2	1	3
Sexual perversions	2	1	3
	615	1,042	1,657

Of 1,657 cases of gonorrhea, 1,216 (or 73 per cent.) were infected by common prostitutes. Let it be advanced that some of these cases might have been merely recurrences of former diseases, let us consider those which were *first infections*, in which this objection could not hold. Of 615 first infections, 477 (or 78 per cent.) were contracted from common prostitutes.

My number of patients with syphilis, in whom the source of infection could be traced, is small, numbering only 112. Of these, seventy-eight were infected by common prostitutes, or seventy-six per cent.

I believe, therefore, that we are fully justified in saying that the common prostitute is, by far, the greatest disseminator of venereal diseases, and that any measures aiming to diminish the prevalence of these diseases, must take this individual seriously into consideration.

What can we do to diminish the spread of this plague? Many measures have been proposed. For instance, continence; greater education upon sexual matters; personal prophylaxis; segregation; castration; sanitary supervision; and, finally, a total abolition of all control and supervision. Let us take them up in their order:

Continence is recommended by many as being perfectly compatible with health. That is only partly true. It may, no doubt, be an easy matter for the young to remain continent until sexual maturity is reached—and this they should be recommended to do. But what of the vast number of men and women, who, under our present social and economic conditions, are unable to enter upon matrimony until long after the attainment of sexual maturity? They cannot throughout their lives wholly deny their sexual desires, without suffering for it in some way. Usually the long continued suppression of the normal sexual instinct leads to disaster, either through affecting the health of the individual, or through turning the normal into abnormal or perverted desires. I speak, now, of the normally developed, healthy male and female, and not of the sexually frigid or the abnormal.

Those of us who maintain that absolute continence is incompatible with perfect health, are accused of creating a double standard of morality for the different sexes. That is not so. We merely recognize the fact that Nature, ages ago, created a great difference between the sexual instinct of the male and that of the female, and that civilization

cannot ignore that difference without inviting disastrous consequences to mankind.

Man's polygamous nature is a survival from the time, ages ago, when, owing to the greater mortality among the males, one man was the husband of a number of wives. Woman's monandrous nature is similarly a survival from those times.

I believe that if it were possible to educate the great masses properly to understand the functions of the sexual organs, the dangers of their abuse, and the great dangers arising from venereal disease, much good might be done, and much disease prevented. Children who are approaching puberty, should begin this study under the guidance of properly qualified, special teachers. Those a little older might receive a deeper insight into these matters, while lectures of a still fuller scope should be given to adults. I believe that a large proportion of venereal diseases occurs in individuals who are too young and too inexperienced fully to appreciate the dangers of promiscuous sexual intercourse.

However, even after the most careful and earnest warnings, there is still a large proportion of men and women who will indulge in what the world calls "illicit intercourse." The edicts of the law givers, the trumpet blasts of the prophets, the anathemas of the church, have not been able, in the world's history, to check the exercise of the sexual instinct, and we need not expect to see the present generations gifted with a wisdom far beyond that of the past. We might say, with some of the moralists, that the acquisition of a venereal disease is a punishment for the crime of incontinence. But that view is as stupid as it is inhuman. They suffer none the less, whose disease has been the result of weakness, and it is our duty, as physicians, to help rid them of their ills, or better to teach them how to prevent them.

Personal prophylaxis, since it has become better understood of recent years, has done a tremendous amount of good in preventing the development of venereal diseases, and were those who have voluntarily exposed themselves to the dangers of infection the only ones to suffer, we might dismiss the entire question by advocating simply the fullest possible personal precautions after exposure. But, as so many innocent persons are also liable to infection, we must go further.

Still, I feel that much can be done by teaching those who have been exposed methods to prevent infection of themselves and also of others. What can be achieved by properly applied methods, has been amply demonstrated in the armies of Germany and its component States, as well as in a part of our forces. You will find the plan favorably commented upon by the surgeon general of the army in his report for 1910, and similarly, in the report for 1910 of the surgeon general of the navy, that the attempts to check the spread of venereal diseases in this branch of the service are beginning to bear fruit, and that "two years hence the rate shown for 1911 should unquestionably prove that the battle against the venereal peril is a decisive one."

Unfortunately, we cannot, in civil life, apply the rigid measures employed among the armies and navies of the world. We cannot make the application of prophylactic measures compulsory, nor pun-

ish the neglect thereof. We cannot so rigidly segregate and treat the venereally infected. Only a small part of our hospitals admit venereal patients at all. The methods of teaching genitourinary diseases in our medical colleges are still superficial, and too many of our teachers still too ill equipped to impart the necessary knowledge; our methods of diagnosis and treatment, in our hospitals and dispensaries, are still too far behind, and the men still doing the work too poorly versed in this special work, to make possible the adequate and scientific treatment of the venereal sufferers.

There remains to us one other point of attack—the source of the majority of infections; the active, yes, often knowing spreader of venereal contagion—the prostitute. She is classed as a criminal in the eyes of the law, but I cannot regard her as such. She and her trade, prostitution, are merely the products of the social and economic conditions that result from and accompany civilization. Since the earliest days of history, she has been harassed and oppressed by civil and religious authorities alike, yet she and her trade have flourished through it all. She has been compelled to live in certain quarters of the cities, or in certain houses, and she has been, as a result, exploited and oppressed by those who profited most through her activities. She has had her sway, and the evils following in her footsteps have grown and spread until the forces of law and order have again been compelled to bid her halt.

Of late, there has developed a movement called *neureglementation*, which aims to curtail none of her legal rights as an individual, but to check the evils which result from prostitution. Norway, Denmark, Finland, Switzerland, and other countries have done away with inscription, casernation, and segregation, yet all are trying to bring about a sanitary supervision of the prostitutes by the health authorities, in order to check the spread of diseases through them. In Germany, Austria, France, etc., there is a gradual tendency to break away from the older, more purely police methods of "control," and to substitute sanitary supervision.

Personally I am in favor of a sanitary supervision and examination of the public prostitutes, preferably by our health department, and without recourse to the aid of the police, excepting in the case of those who prove refractory. To make a beginning in this direction, we shall have to start with those women arrested and convicted for prostitution or solicitation, and subject these to examinations by *competent* physicians, employees of the health department. The much discussed and much maligned "Paragraph 79" of the Page law was, I feel sure, a step in the right direction, and, if we could get a fair, honest, and unbiased trial of its provisions, I feel confident that its justifiability and usefulness would be easily and amply proved. But I fear that the law is not to be given a fair trial and that measures are being taken within the health department of our city, to nullify any possibility of benefit therefrom. *I believe that the health authorities want the law to fail.**

I believe in the segregation but not in the casernation of the prostitutes. They should be permitted

to ply their trade unmolested by the police, so long as they commit no breach of public order and are found to be free of venereal disease. They should not be permitted to live in houses of prostitution where a number of women congregate to receive men. In other words, let no more than the keeper and one servant sleep or live in any of these houses. Let the women live in their own apartments.

Let them sell or deliver no liquor whatever in these places.

Throw open freely to the venereally diseased the wards of all hospitals receiving financial aid from the community. Provide for the adequate treatment of these patients in every dispensary. Put these hospital and dispensary services under *competent* specialists, and make the one in charge an unsalaried deputy of the health department.

Examine every woman arrested for prostitution or soliciting, after her conviction, and confine the diseased in *hospitals*, until pronounced cured, or in the case of syphilis, no longer infectious. The street walkers and common prostitutes, it has been found by those who have made a study of these matters, will not voluntarily refrain from prostitution while venereally diseased. They should, therefore, be confined and treated.

Provision should, however, be made for the examination and gratuitous treatment in public hospitals and dispensaries, of any prostitutes who may desire it. The department of health should supervise this procedure.

I have repeatedly stated my belief that every hospital or dispensary receiving financial aid from the city authorities, should be compelled to maintain a department for the scientific, gratuitous treatment of venereally diseased males and females, and that all of the hospitals receiving such financial aid should be compelled to receive and treat, upon the same footing as other patients, any venereal patients who may apply. I am not in favor of special hospitals for venereal patients, since the time is not yet ripe for them, owing to the fact that the stigma attaching to the term "venereal disease" would prevent a large part of the sufferers from seeking relief there. Nor are special venereal hospitals necessary since the transmission of venereal diseases within a hospital can be readily prevented. Anyone who has seen the wards for skin and venereal patients in some of the larger and newer European hospitals will see this fact clearly demonstrated there.

Go on, then, with your campaign of education in sexual matters; with your attempts to prevent, or to decrease prostitution by improving the social and economic conditions under which we live; with your efforts to reclaim those who have erred. We medical men sympathize fully with all such attempts and will give you our most earnest efforts to help.

But do not forget, while you are making the fight, that prostitution and venereal diseases will continue to exist, for men and women will continue to be weak. You must, therefore, help in the fight against these diseases. We may not all agree upon the means to be employed, but let us be one in attempting to get the better of them.

10 WEST SIXTY-FIRST STREET.

*The paragraph in question has since been declared unconstitutional.

THE RATIONAL THERAPY OF SYPHILIS IN LIGHT OF RECENT INVESTIGATIONS.*

By J. S. EISENSTAEDT, M. D.,
Chicago.

The rational treatment of any condition presupposes an accurate diagnosis. The discovery of the specific cause of syphilis, *Spirocheta pallida*, by Schaudinn, and Wassermann's application of the so called complement fixation test to diagnosis, has placed our understanding of specific disease upon a more exact and scientific basis. More recently still the work of Noguchi in obtaining a pure culture of the treponema and the production of luetin has placed another aid in our hands which, I believe, promises to be of great service in those cases in which the Wassermann test fails us, namely in obscure, latent, hereditary, and paraspecific conditions. Too short a time has elapsed for aught but conjecture concerning the permanent value of Noguchi's work. The discovery of salvarsan by Ehrlich and Hata has been the most important addition to the preparations used in the treatment of syphilis. In addition to giving to the medical world this preparation, though to be sure while laboring under a somewhat erroneous idea as to its efficiency, Ehrlich's work on chemotherapy has stimulated an intense interest in the subject, and, as we all know, recent literature has been crowded with clinical and laboratory reports in this field.

The treatment of greatest efficiency which we now have at hand is, I believe, an energetic, combined, salvarsan-mercury treatment, which may be modified in various ways to meet satisfactorily the exigencies of most cases. Let us consider briefly the present viewpoint regarding the presence and dissemination of the spirochetes in the specific patient. It is thought that very early in the course the spirochetes are located at the site of the primary lesion and in the lymphatics in the immediate vicinity, and that somewhat later they appear in the general blood stream from which, after a while, they disappear and are lodged in the internal organs and specific lesions elsewhere. Here they remain dormant, or multiply and produce lesions, depending on the resistance or sensibility of the patient and the virulence of the organisms.

Believing this, it is reasonable to suppose that the various phases or stages may call for some variation in treatment. In other words, in a case of early primary lues, with a very recent chancre, it is evident that excision of the chancre and an intravenous injection of salvarsan in full dose will have a vastly greater (though not curative) effect than if the latter is given in a case of tertiary lues in which the spirochetes are peacefully resting in gummata, let us say in the liver, where they are protected by the typical histopathological findings of zones of epithelioid and small round cells.

Salvarsan, when given intravenously, is rapidly excreted, and hence exercises its influence for a relatively short time, therefore I believe that cases

in which there is no distinct and definite indication for an intravenous salvarsan injection are better treated in other ways.

I should construe the following conditions as being possible reasons for the intravenous salvarsan injections: Impending perforation of the palate; certain luetic lesions of the central nervous system, such as meningitis and gumma; intense specific bone conditions, periostitis and gumma; extreme involvement of the mucous membranes; early cases of syphilis in which secondary symptoms have not yet appeared; and especially cases of syphilis refractive to thorough mercurial treatment.

The intravenous exhibition of salvarsan should in all cases, however, be followed by energetic, prolonged mercurial treatment. We know that salvarsan is seldom if ever what Ehrlich at first asserted for it, namely a "therapia sterilisans magna," so it now must fall in line as a member of the group of remedies to be given repeatedly over a prolonged time.

Recent research by Hoffmann, of Strassburg, upon various salts of mercury has shown that those salts which are rapidly excreted in the urine, even though containing a higher percentage of mercury, are not as efficient as those which are slowly excreted. He says that calomel and the basic mercury salicylate given intramuscularly in oily suspension, are the most slowly excreted and are clinically the most efficacious. This I believe to be true, and the use of these salts is to be especially recommended; however, where an intense short lived effect is wanted, and this effect is, at times, certainly indicated, the rapidly absorbable salts are to be used; but in ordinary cases, I believe the administration of calomel or the salicylate of mercury to be superior.

Now to return to the actual procedure in a given case coming for treatment in the earliest stage of syphilis. Knowing full well that the Wassermann reaction does not make its appearance until the onset of secondaries, or frequently later, how shall one determine the diagnosis of a suspicious primary lesion? The history and clinical features are, when reliable and clearly cut, of great importance, and one should not resort to laboratory methods before arriving as nearly as possible at a conclusion regarding the lesion in question. However, the true Hunterian type is decidedly in the minority, if not an unusual type of chancre, hence an examination for the spirochete should be made, and by one conversant with modern laboratory technique and with this organism in particular. The technique to be recommended is staining by the original Giemsa method controlled by examination under the dark field. However, after familiarizing oneself with the Burri or Chinese ink method, that also may be considered reliable. Naturally a negative examination means nothing, and daily examinations should be made, during which time no antiseptic is to be applied to the lesion. The findings in inexperienced hands may be unreliable as a Wassermann or a Widal reaction might be.

Erich Hoffmann, in a recent article, showed the great advantage of a thorough search in those cases

*Read before the South Side Branch of the Chicago Medical Society, April 30, 1912.

of specific disease in which the Wassermann test was negative, either as a result of treatment or because it was too early for its appearance. One case particularly I recall, in which as a result of treatment with mercury, the Wassermann test was negative, though the patient had mucous plaques on his tonsils which showed numerous spirochetes on the dark field. If, in spite of repeated negative reports for spirochetes in serum from the initial lesion, or in fluid obtained by puncture from the enlarged inguinal lymphatics, a suspicion of syphilis still remains, a piece of the lesion may be removed and sectioned and stain for the spirochetes in the tissue made according to Levaditi. This failing, the intervening period till the onset of secondaries or a positive Wassermann reaction may be expected, is best used by putting the patient upon a tonic treatment with iron.

If the diagnosis, on the other hand, is positively made, treatment energetic and thorough should be initiated as early as possible, so that the depression of the secondary stage may be averted. The treatment of election is the combined salvarsan-mercury treatment carried out as follows, unless there are distinct contraindications, such as cardiovascular disease or lesions of the optic nerve.

An intravenous salvarsan injection in full dose, to be immediately followed by twelve to fifteen intramuscular injections of mercury salicylate, preferably suspended in oil of sesame, are given at intervals of five or six days. Hoffmann, now of Bonn, recommends four complete courses, as I have outlined, given within the first year of the disease. Under such treatment, in all probability, a very intense enduring effect, if not a cure, could be effected in almost all cases.

If treatment of this kind is carried out in cases of early primary lues, the Wassermann reaction seldom becomes positive and then only for a very short time; while in cases showing secondary symptoms, with a positive reaction, this usually changes to negative several months before the end of treatment.

Personally, I have never been so energetic, but have used and advised an intravenous salvarsan injection only in conditions above enumerated, including, however, primary lues. This is immediately followed by a series of mercury salicylate injections, followed later by four to six injections intramuscularly of small doses of salvarsan, from one to two decigrammes, in sesame oil, after which new series of mercury salicylate injections are inaugurated and continued at increasing intervals during the first year of the disease. I have in this way seen a fair number of cases which appear to be cured, though the time is entirely too short to be certain. The Wassermann reactions are, however, negative and have remained so for months since treatment.

By giving injections of insoluble mercurials, we are, I believe, fulfilling an important indication in the treatment of this disease, and are giving treatment which is trustworthy and in most cases capable of producing splendid, though not spectacular results. In cases refractive to mercury, salvarsan, in some peculiar way, causes changes which pre-

pare or blaze the way for subsequent mercurial therapy, permitting the latter to produce a marked impression upon the disease, which before the injection had been entirely unnoticed, if not impossible.

Patients in later cases of lues, for example those with relapsing and secondaries and tertiary lesions, do well with prolonged mercury and iodide treatment; salvarsan, while of value, does not at all appear to be requisite for thorough treatment in the greater number of cases. Mercury still holds its place as the head of specific remedies, and I would much rather reply upon it than upon salvarsan when given in whatever way suggested. In many cases a combination of the two is to be warmly urged, while in other cases mercury does the work effectively and completely.

Just a word in regard to mercury by inunction; this method, probably the oldest, still remains a reliable, powerful, and thoroughly satisfactory method of exhibiting mercury. One figures ordinarily from four to five rubbings to be equivalent to one injection of mercury salicylate. However, the method lacks the cleanliness and elegance of the injection method, but has the advantage that it may be stopped at any moment, thus preventing absorption of mercury in a patient who is showing signs of impending or actual mercurialism.

In regard to pills of mercury biniodide or protiodide, I place them as adjuvants to proper energetic therapy, and they may be prescribed between "cures" if thought proper. I believe to prescribe three or four one quarter grain pills of protiodide a day for a case of marked syphilis, omitting other treatment, is comparable to prescribing simply a gargle in a well defined case of diphtheria, leaving out diphtheria antitoxine.

The care of the teeth in all patients receiving mercury must always be emphasized, likewise abstinence from tobacco and alcohol, and other measures of general hygiene.

When may we regard a patient as cured? When after thorough treatment the patient has been free from all clinical signs, and has shown a series of negative Wassermann reactions over a period of eighteen months, during which time all therapeutic measures were suspended. We must inform him, however, that we have no absolute criterion of cure, and that it is advisable for him to return each year for examination, and possibly treatment.

In conclusion, in treating a specific case, we must first of all make an accurate diagnosis, place the patient under as good general conditions as possible, not forgetting the use of an iron tonic, and then treat him energetically, relying at all times upon mercury and its salts, but remembering that salvarsan is in many cases of great value used in conjunction with mercury. We must treat him until he is clinically cured, and observe him for at least eighteen months more, during which time he receives no treatment, but has his blood examined repeatedly. Then if the Wassermann reaction remains repeatedly negative, we may conclude that he was thoroughly and rationally treated.

32 NORTH STATE STREET.

NEW METHODS OF DIAGNOSIS IN
CANCER.*By M. J. SITTENFIELD, M. D.,
New York.

Within the last two or three years the methods of diagnosis of cancer have made rapid strides, and marked advances toward solving the problem of early diagnosis of malignant disease have resulted. The physical and chemical branches of research work have brought forward methods which are of greatest assistance to us in the early recognition of cancer. We all realize that in order successfully to combat this devastating disease, early diagnosis is of first importance and occupies equal prominence with therapeutics. It is toward the laboratory that we must look for aid in recognition, and while the outlook for a definite, accurate, and specific diagnosis is very promising, yet we are baffled at times, just as a section of a tumor under the microscope perplexes us at times, in spite of clinical and biological observations. The early diagnosis of malignancy offers us the greatest difficulty. In this respect, the laboratory has furnished new methods, which are of greatest assistance, and further research on newer methods may bring us nearer the ultimate solution of this vital and complex problem of early diagnosis, and consequently nearer the solution of the entire cancer problem.

The advancement of the physicochemical observations on tumors, as well as the experimental transplantability of malignant tumors, stimulated at the same time the search for additional methods of early diagnosis. Aside from the present improved methods of x ray examination, especially in the body cavities and in the skeleton, we must avail ourselves of methods which indicate the true nature of the affection long before the x ray has had an opportunity to demonstrate the tumor. Only at the very beginning of the disease can we hope to battle successfully against this dangerous foe and benefit the patient by the present methods of surgical interference, the technique of which has undergone such marvelous development that it has outstripped almost anything that we can at present offer against this exceedingly harassing affection.

First of all we must consider the urine examination in cancer patients, which reveals an increase of the nitrogen elimination of oxyproteids, of the sulphur containing group, and probably of polypeptid character. A great many observers, among them Falk, Salomon, Abdehalden, and Saxl, lay a great deal of stress on these findings as evidence of early malignancy, since pregnancy and liver diseases are the only other conditions in which these substances are increased. The same is true of the colloidal substances, or alcohol insoluble substances in the urine, which are increased to about three times the amount contained in the normal urine.

The increased amount of neutral sulphates in the urine has, of late, attracted the attention of a great many investigators, and Weiss reports that he was able to obtain in sixty-one out of eighty-one specimens of urine of cancer patients in the very earliest stages a definite reaction with barium chloride.

After resection of the malignant growth, this reaction disappears. It has also been shown by Wilenko, that in cancer of the stomach there is an increase of pepsin in the urine, while the pepsin in the stomach is either absent or very much decreased. This seems to be questioned, however, by other observers, who found that there were cases of cancer of the stomach in which the urine did not contain pepsin, and also that in cases of carcinoma elsewhere, they were able to find pepsin in the urine. In achylia gastrica, for instance, pepsin is present in the urine, according to Ellinger and Scholz, whereas in gastric carcinoma pepsin could not be found. It has been stated by other writers that in early gastric carcinoma, pepsin is found in the urine, while in extensive cancer involvement, pepsin is not so regularly found. In short, these particular findings do not offer anything specific for cancer diagnosis at present.

In diagnosis of cancer of the stomach, we realize our helplessness in establishing a specific diagnosis of malignancy, since the behavior of the hydrochloric acid and ferments offers no characteristic sign. It has been pointed out that the nitrogen was increased in the stomach wash from ten mg. to seventy mg. to 100 c. c. of fluid in cancer of the stomach, and here again we are presented with the same difficulty, namely, that negative findings have no significance, while the positive ones are of value.

The findings of Emerson that the proteids are activated by a proteolytic ferment in cases of cancer of the stomach, splitting them up to their end products, even as far as leucin, tyrosin, arginin, and lysin (which are never present in the normal stomach), led Neubauer and Fischer to investigate the specific ferment possessing this proteolytic property, which is present in the stomach in cases of gastric carcinoma. Up to the present no one has succeeded in determining the presence of a foreign albumin in the tissues of malignant tumors. They found, however, that glycyl tryptophan corresponds to this ferment, which is present in the gastric juice in patients with gastric carcinoma. This tryptophan gives a decided color reaction with bromine water (pink to red violet). There are a great many other factors which may interfere with this reaction (as bacteria, blood, or pancreatic juice), and it is at times difficult to exclude them. On the other hand, a positive reaction may be obtained in benign tumors of the stomach. Moreover, a number of observers think that this test has as yet not proved its right to existence, since the sources of error are manifold on account of hemolytic substances in the stomach, aside from the trypsin and bacteria which may be present there. In view of all these facts no specific value can be attached to this method.

The reactive property of anaphylaxis has been utilized by different writers to diagnosticate cancer of the stomach. They found that normal sterile gastric juice injected into animals into the subdural space, has no effect upon the animal. The gastric juice of a patient suffering from cancer of the stomach, however, injected into animals, is strongly toxic, causing death in doses of one tenth c. c. When, on the other hand, the animal is first

*Read at the Eastern Medical Society, May 11, 1911.

treated with a subcutaneous inoculation of carcinoma, it is sensitized, and an injection of one twentieth c. c. of carcinomatous gastric juice, will produce anaphylactic phenomena, while such an injection in a normal animal produces no effect. According to Lieverati, the anaphylactic symptoms of the treated animals are caused by the chemical products of the secretion and disintegration of carcinoma.

The blood of the cancer patient has been made the subject of laborious and fruitful studies within the last few years, and we will briefly mention only a few. In the first place, the ferment reaction, or trypsin proteolysis, which is the antitryptic behavior of cancer serum, is based on the theory that normal blood serum contains sufficient antibodies to inhibit the digestive action of a one per cent. solution of trypsin on Loeffler plates in the proportion of one to three.

It was shown that the inhibitory power of cancer serum is markedly increased, ranging from one to ten, or as high as from one to twenty. The discoverers of this test, Brieger and Trebing, look upon this method as an indication of cachexia, due to the destruction and disintegration of protein substances and the setting free of proteolytic ferments, which cause disturbances in metabolism, giving rise in turn to cachexia. Since the same conditions obtain in tuberculosis, pernicious anemia, suppurative processes, Basedow's disease, and other severe blood affections, this test loses its value of specificity. Different investigators, as von Bergmann, Meyer, Bomberg, and others, state that it is perfectly true that ninety-two per cent. of cancer cases show this antitryptic reaction. It is also true that fifty-two per cent. of other than cancerous cases show a positive reaction, and in only five per cent. of cancer cases has this reaction failed. It would seem, then, since the positive reaction is questionable for cancer, and that in only five per cent. it fails to show, that the negative reaction has an important bearing and is of value as indicative of nonmalignancy; especially when a differential diagnosis does not enter into consideration.

A result, similar to that of the Wassermann complement fixation test, has been sought for in carcinoma. Watery and alcoholic extracts of tumor, as antigen, have been used, and some observers have asserted anywhere from two per cent. to sixty-five per cent. positive reaction. In view of this variation and inconsistency, not much value is attributed to it. Of incidental interest may be cited the fact that a Wassermann reaction has been obtained in a certain percentage of cases of carcinoma and sarcoma. Whether they were due to bacterial influences, however, has not been determined.

The precipitin reaction has given us very encouraging results, especially the Freund and Kaminer reaction. They have based their hypothesis upon the destructive action of normal serum on cancer cells; this destructive action being due probably to the lecithin elements of the normal serum. The cancer serum either lacks this lecithin element, or is deficient in it, though there seems to be present in the cancer serum an ether insoluble substance which protects the cancer cells. Dilute normal serum destroys this protective substance. Freund and

Kaminer describe a precipitin reaction by the addition of carcinoma extract to the serum of cancer patients. The precipitate can be dissolved by adding normal serum or ether extraction. In the serum of fifty-four cancer patients, they found this turbid precipitation; while it was absent in forty-five patients who were suffering with noncancerous affection. They found only one positive, in a case of tuberculosis; two cases of sarcomata gave positive results with sarcoma extract. This reaction depends upon the presence of substances in normal serum which destroy cancer cells, or upon the absence of these substances in cancer serum, which consequently render it unable to destroy cancer cells. Most of the investigators have corroborated the work of Freund and Kaminer, and have reported positive results in eighty-two per cent. and upward. They all agree that if this test is not entirely specific it is valuable in at least seventy-five to eighty per cent. of the cases, and hence is of assistance in diagnosis when the other methods are of no avail. This precipitin reaction of Freund and Kaminer is supported by the discovery of Neuberg, who was able to clear up a suspension of cancer cells by the addition of normal serum, and this is practically of the same nature as Freund and Kaminer's precipitin reaction. The discovery of Ascoli and his pupils, in 1910, of the diminished surface tension, when cancer serum is added to cancer antigen, can be correlated with Freund and Kaminer's precipitin reaction. They found that the chemophysical changes in the solution are the manifestations of the difference between cancerous and normal serum. It would seem then that the three different investigators have arrived at the same results by three different methods.

A description of the new methods of diagnosis would not be complete unless something were said of the isolysins and hemolytic reactions, but their application is as yet so vague that they may be dismissed with only a few words. It has already been stated that the blood serum of the cancer patient, or cancer extract, exerts a lytic power upon human red blood corpuscles, and the same phenomenon is observed in hemorrhagic transudates of cancerous affection. Crile used this hemolytic property of the blood as a diagnostic method. He was able to report eighty-two per cent. hemolysis, but unfortunately he found it also in tuberculosis, infectious diseases, pneumonia, pernicious anemia, etc. In advanced cases of cancer, however, it proves negative, and since it is evident that this reaction is obtainable in so many other than cancerous conditions, a consideration of specificity is out of the question.

Of late, a method has been described by which the erythrocytes of sarcomatous patients are dissolved by cobra venom, but later reports from the same authors have stated that their test is not practical as yet.

Probably the most important of our new laboratory methods in the early diagnosis of malignancy is the miostagmine reaction of Ascoli and his pupils. It was first published in 1910 and depends upon the surface tension of a mixture of antigen and serum, which is measured before and after incubation. This reaction is based upon the laws of physical

chemistry, by means of which we are able to identify antibodies in the serum of the individual tested.

The first one to point out that toxine and antitoxine behave differently when subjected to the test of surface tension was Traube, who constructed a very delicate and precise instrument, known as the Traube stalagmometer. The surface tension is shown by a definite number of drops. Ascoli studied the surface tension of immune serum plus antigen, using the Traube stalagmometer to indicate the number of drops in a definite amount of the test fluid, before and after the incubation. A lessened surface tension is shown by the greater number of drops required, because the drops have become smaller.

When an antigen is incubated with a serum of specific antibodies, the surface tension is lowered; more drops are required than before, as the drops are smaller and he named it the miostagmine (from *μῆτος*-small and *σταγών*-drop) reaction, and the specific body in the serum he refers to as miostagmine. The procedure consists in extracting the essential principles of the antigen (from a tumor extract), and added to this is the serum of the individual to be tested. The number of drops or surface tension is ascertained by the number of drops contained in a certain amount of the fluid. The mixture is then allowed to incubate, either for one hour at 50° C. or for two hours at 37° C. or body temperature. After the incubation, the surface tension is again estimated and the same definite amount of fluid is measured. A positive miostagmine reaction will be indicated by a diminished surface tension, hence an increase of from three to eight drops is evident, because during the period of incubation a chemophysical change has taken place, hence this difference in surface tension. The specific substances in the antigen are soluble in alcohol, extractable with methyl alcohol and ether.

This same miostagmine reaction occurs in typhoid. The test is made by combining extract of typhoid bacillus with typhoid serum. The reaction can also be demonstrated in tuberculosis and syphilis by the use of tuberculous and syphilitic antigens respectively. In syphilis it is more accurate than the Wassermann test, as cases of lepra have reacted positively with Wassermann's test and negatively for syphilitic miostagmines.

Human cancer serum, mixed with an antigen obtained from mouse and rat carcinoma, gave positive miostagmine reaction, and with normal serum gave negative reaction. Antigen made from human cancer gave a positive miostagmine reaction, even in dilution of one to 10,000 in normal sodium chloride solution. Ascoli and his pupil Izar examined sixty-two cases of cancer and were able to obtain a positive miostagmine reaction in fifty-eight; comparing them with forty-eight other diseases, all were negative.

Many Italian workers, as D'Este, Stabelini, Agostini, and a host of others, have corroborated these findings, obtaining also ninety per cent. positive reactions, and look upon it as specific and characteristically diagnostically.

After operation for excision of a malignant growth, the miostagmine reaction is negative. The active element of the blood serum, which is responsi-

ble for this miostagmine reaction, is not known.

If we now consider, in conclusion, the specific diagnostic value of all the methods described, we must admit that not a single one of them, *per se*, is characteristic and specific. Still, the laboratory tests have done a great deal to advance the diagnosis of early malignancy.

The Freund and Kaminer precipitin reaction, the miostagmine reaction, and the urinary findings have not yet arrived at a point of absolute specificity, in spite of the fact that we have from seventy-five to eighty per cent. or even ninety per cent. positive reactions. It is hoped that improved technique will render these tests more accurate and valuable to us.

This stage of experimentation in cancer is in its infancy at present, most of the tests being barely two years old; we cannot offer any one method as an absolute proof of malignancy, but, in combination, all the methods may become very valuable adjuncts in arriving at early diagnosis; especially is this true of differential diagnosis between the benign and malignant types of tumor.

Thus it is evident that our future development of diagnostic methods depends upon laboratory technique. The progress of similar work during the next few years may bring the solution of the early diagnosis of malignancy and with it possibly the solution of the cancer problem.

73 EAST NINETIETH STREET.

DEFORMITIES OF THE NOSE.

A New Method of Correction by Transplantation of Cartilage; Report of Cases.

By FREDERICK S. LOVELL, M. D.,

New York,

Adjunct Professor, Diseases of Nose and Throat, Post-Graduate Medical School and Hospital.

Deformities of the nose, such as the congenital saddle back, or the acquired form due to traumatism or disease, are of frequent occurrence, and the results from the usual methods of correction are so unsatisfactory that the reports of the following cases may be of interest. In three of these the cartilage was transplanted in the soft tissues, while in the other nine cases the cartilage was placed under the periosteum or perichondrium.

Macewen, in his recent publication, *Growth of Bone*, infers from his experimental work that the evolution of the osteoblasts, the exhibition of its independent vitality and proliferating power, both within the diaphysis and without, in the soft parts or tissues, is independent of its periosteum. Bone minus periosteum, and bone shavings transplanted into the soft tissues, retain their vitality and characteristics. As long as the bone cells remain embryonic they exhibit the power of proliferation, but when they reach maturity they assume the fixed tissue type and remain stationary.

This experimental work of Macewen has not only reconstructed bone surgery, but also opens up a new field for plastic surgery of the nose. I am able to substantiate Macewen's experiments, for in my very extensive work on resection of the nasal

septum where bone and cartilage have both been removed, the perichondrium and periosteum of either side remaining, in no case have I found the bone or cartilage regenerated.

Cartilage, being a more primitive or embryonic tissue than bone, should have a greater vitality. In fracture of the cartilage of the nasal septum, where the angles of the fragments are overlapping and in contact with no perichondrium between, a membrane is formed, thus showing the power of cartilage to regenerate its own protective membrane by the proliferation of the chondroblasts.

During the past year, in performing submucous resections for deflected nasal septum, I have replaced, in nine cases, the straight part of the cartilage thus removed in order to give support to the nasal septum and to prevent flapping of the membranes in those cases where nearly the whole septal plate was removed. In all the cases the results were so uniformly good that I believe the operation to be a great improvement over those which leave only unprotected mucous flaps.

These results led me to believe it possible to transplant the septal cartilage in other soft tissues and use it as a support or a corrective agent in depression of the nose from fracture or in the congenital saddle back nose.

CASE I. J. D., male, aged twenty years; occupation bookbinder and amateur boxer. Previous history: Had always been healthy, no specific history obtainable; no previous nasal trouble except bleeding easily with traumatism. Present history: On the night of December 16, 1911, he was engaged in a boxing contest, during which he received several blows upon the nose, causing it to bleed very freely; the nose became swollen to about twice its normal size, was flattened on the face, and the patient was unable to breathe through either nostril. The next day ecchymosis was marked, extending laterally beyond the outer canthus of the eyes. Two days after, a diagnosis of fracture of the nose was made at one of the city hospitals. The following day, three days after the accident, he was admitted to my clinic at the Post-Graduate Hospital and presented the following appearance: Externally, nose very much flattened, swollen, and discolored, the discoloration extending beyond the eyes and over cheeks; internally, the septum nasi was swollen on both sides, fluctuating, and completely filling both nares. Diagnosis: Septal abscess.

The abscess was incised at once, discharging a large amount of foul smelling pus; the abscess cavity was washed with sterile salt solution and drained with a strip of iodoform gauze; the dressing was changed every alternate day for about two weeks, when the discharge ceased and the wound was allowed to heal. On March 2, 1912, the patient reappeared at my clinic, complaining that he was unable to breathe through his nose. Examination showed the nasal septum to be thickened anteriorly, the whole length of cartilaginous portion nearly filling both nares. The thickened portion was at once removed submucously. On opening the septal membrane it was found that nearly all the fractured part of the cartilage had sloughed away, and in its place there had formed a thick fibrous tissue which was entirely removed. The membranes were placed in apposition and dressed in the same way as an ordinary septum resection, with the usual after treatment for such cases.

On March 16, 1912, fourteen days after the septum operation, and just three months after the accident, the patient was prepared in the following manner for the transplantation of cartilage: Patient on table; the nose scrubbed externally with a five per cent. compound cresol solution, then pure alcohol, and last, tincture of iodine was applied at the point where the needle was to be introduced for cocaineization. The nasal orifice and vestibule were

prepared in the same way after they had been packed with a four per cent. solution of cocaine in a one to 8,000 solution of adrenalin for about ten minutes. The solution for hypodermic use was prepared from one half grain cocaine hydrochloride, one drachm adrenalin chloride, in sterile water enough to make one ounce. About two drachms of this solution was used with the hypodermic syringe.

Operation. The tip of the nose was raised and the incision about one half inch long was made in the upper part of the vestibule about one half inch posterior to the skin margin; through this opening dissection was made upward over the bridge of the nose, extending to a point just beyond the deformity, about one half inch to either side of the median line, and down to the tip of the nose. A piece of cartilage, taken from the nasal septum of another patient on whom I had operated within the hour, was pared the desired size and shape, then slipped through the incision into the dissected part, and placed in proper position, one suture closing the incision. No external dressing was necessary.

CASE II. L. I., male. Previous history: On January 1, 1898, fourteen years ago, the patient was hit with a stone on the left side of the nose. Following this there was marked edema, the nose was displaced to the right side, and showed a decided depression of the bridge, with a tumor formation on the right nasal bone. He was unable to breathe through the left nostril.

April 13, 1912, the septum was resected and the cartilage, then removed, was placed subcutaneously by intranasal method, both preparation and operation being the same as those used in Case I. April 20, 1912, it was found necessary to transplant two more oblong pieces of cartilage to complete the correction.

CASE III. W. N., male, aged twenty-six years; blacksmith and professional boxer. Previous history: In 1908, had his nose broken in a boxing contest. It healed, showing deflection to the right side and marked depression of the bridge.

First the nose was refractured and set in normal position. Four weeks later the patient was prepared for both submucous resection and a plastic operation. The cartilage removed from the septum, was shaped and put in position to correct the depression of the nose, but the piece alone proved to be insufficient. Two more pieces were added before the desired result was obtained. These two pieces had previously been taken from the nose of another patient and had been kept for three days in a normal saline solution. The wound became septic and had to be reopened and drained for several days by means of a gutta serena drain. It finally healed with perfect results.

There are four decided advantages to this operation:

1. No external scar.
 2. The flexibility of the nose.
 3. The cartilage transplanted is not a foreign body, but living tissue.
 4. The abundance of material to select from.
- As a rule the cartilage can be obtained from the nose of the patient himself; if not it can be taken from another patient for whom a submucous resection is necessary.

129 EAST FORTIETH STREET.

Abstracts and Reviews.

THE LOCALIZATION OF IMPULSE INITIATION AND CONDUCTION IN THE HEART.*

BY JOSEPH ERLANGER, M. D.,
St. Louis,

Professor of Physiology, Washington University.

In the years shortly succeeding Harvey's discovery of the circulation of the blood, observations were made which should have gone far toward the suggestion of the explanation of impulse conduction in the heart and the establishment of the site of its initiation. The observations were, for the most part, correct as far as they went, but their interpretation was at fault. Ideas arose at that time and in the subsequent years, acceptance of which has led investigators along the wrong lines, and it was not until the ligatures of Stannius and the histological work of His that the lead was struck which was destined to carry us to a proper explanation of these two phenomena.

It was observed in the earliest days that the contraction of the heart began in the region of the great veins and progressed in regular sequence down the auricles and over to the ventricles. This passage of contraction ran parallel to the course of the blood volume, and the first theories of the mechanism of the heart's contraction sought to explain the phenomenon on a mechanical basis. They were to the effect that the distention of the respective chambers of the heart was in itself the stimulating factor for the contraction. This was soon shown to be an insufficient explanation, for hearts removed from the body and having no contained and distending fluid, still continued to contract in an orderly manner.

The presence of a definite function and course of events would seem to postulate the presence of a definite anatomical structure as a basis, and conversely, the discovery of a definite anatomical structure would postulate a definite function. Such postulates, while offering suggestions for investigation, may lead to very erroneous conclusions, and such has been the case in the study of the heart.

The first step in advance was that which resulted from the well known ligatures of Stannius. These served to localize, to a certain extent at least, the origin of the impulse to the region of the great veins, but the definite structure in which the impulse arose was far from being found, and no demonstrable structure for its transmission was brought to light.

Embryological studies next threw the rays of light upon the problem by revealing, in the hearts of lower animals, the continuity of the great veins with the musculature of the auricles. Later this was extended to the hearts of higher species, and it was discovered that remains of the primitive sinus venosus were to be found in mammalian hearts, occupying the region between the *venæ cavae*, the coronary sinus, and the auriculoventricular junction. It had been shown previously, in cold blood-

ed animals, particularly the eel, that cardiac contraction began in the great veins or in the sinus venosus, which is a separate cavity in the eel. There was, then, reason to assign to this embryonal remnant, which lay above the first Stannius ligature, the function of impulse initiation. Careful observations led to the confirmation of this view, for in dying hearts, or in hearts just reviving, the first sign of contraction was to be seen in the right auricle in the immediate region of the sinus tissue remains.

The next discovery seemingly bearing directly upon the initiation of the impulse was that of Kieth and Flack, who described the bundle of specialized tissue now bearing their names. This lay in the region of the first visible impulses, it was specialized tissue, it could be traced as an embryonal remnant, and logically it was selected as the source of the impulse initiation. This view was further substantiated by excision experiments, by which it could be shown that its removal was accompanied with loss of regular rhythmicity of the heart's contraction. Subsequently, electrocardiographic work lent support to this view, because it was this region of the heart which first became electrically negative as the result of the heart's contraction. Isolation by local application of cold, or stimulation by heat, and destruction of the area by formaldehyde, all seemed to confirm this view. The latter methods were crude and gave discordant results in the hands of different observers, though in general they tended to the support of the theory. The argument based upon one or all of these observations was, however, not without fallacy, for destruction or excision of this area need not be taken as conclusive proof that it is here that the impulse arises, for it is quite conceivable that such destruction produced so profound an alteration of function in the remaining structures as to prevent their contraction. Or one might explain the phenomena as being due to the severance of conducting fibres, and not to removal of the area whence the impulse arose. That the impulse does not arise in the auriculoventricular tissue of Kieth and Flack seems now to have been proved. If it did arise there, then the impulse would begin below the sinus, but such is demonstrably not the case; further, impulse origin there would imply the necessity of this being the most rhythmical and most irritable area of the heart. Such is not the case. It is true that the right auricle is the most rhythmical, but it is also true that that portion which contains the primitive sinus tissue is more so than is the area of the node of Kieth and Flack. Further, also, excision of tissue lying just below the node produces precisely similar effects to those resulting from excision of the node itself.

More extensive histological study of this node has shown that it has fibres connecting it, on the one hand with the primitive sinus tissue, and on the other with the specialized sinus tissue in the auricle lying near the auriculoventricular sulcus. Hence it is better to term this node or bundle of tissue the *sinoventricular bundle* rather than the *sinoauricular*.

Recent experiments with excised strips of cardiac tissue beating in a bath of Ringer's solution, have

*Summary of Harvey Society Lecture delivered at the New York Academy of Medicine, November 9, 1912.

shown that tissue from the regions of the venæ cavæ or the coronary sinus, that is, tissue containing the primitive sinus venosus remnants, possesses the highest grade of rhythmicity. Such strips containing sinus tissue have also been shown to react to the action of drugs, acting on them precisely as on the heart as a whole. Nicotine and pilocarpine produce inhibition of the action of the strips, atropine will overcome the action of pilocarpine on the strips, and epinephrine produces acceleration of the beat. All these drugs are believed to act upon nervous tissue in the heart. Caffeine and the digitalis bodies, as well as aconite, all of which act probably on the muscular structure directly, produce their typical effects upon these strips, precisely as on the whole organ. It seems that this primitive tissue is therefore highly specialized, and that it has some of the attributes of both nerve and muscle. In contrast to the foregoing, it has been found that strips, free from sinus tissue, but containing tissue from the node of Kieth and Flack, are less rhythmic than those just mentioned.

Again, the electrocardiograph has come to our assistance, and by it we have been able to show that the reaction current is normal only when the stimulation of the heart is applied in the sinus region. It also gives definite indication that such stimulus, as well as the normal one, passes by way of the Kieth-Flack bundle, suggesting that this latter structure is part of the conducting system of the heart, and not of the mechanism which initiates the stimulus.

Up to the present time, then, it seems that the impulse initiation is situated in the region of the heart above the node of Kieth and Flack, in the area which contains the remains of the primitive sinus tissue, and that, in all probability, it is in this specialized tissue that the impulse arises. The bundle of Kieth and Flack seems to have been properly assigned to the duty of a conducting mechanism from this primitive initiating structure to structures of the heart lying further down and now to be discussed.

The discovery of the bundle of His, which is made up of Purkinje cells exclusively, lying in their supporting connective tissue, opened up the field which has led to the elucidation of the problem of the conducting mechanism of the heart. The course of this bundle lies from the auricular septum in the floor of the coronary sinus and from the node of Tawara, downward into the interventricular septum, thence to break up into an anastomosing network of fibres which seem to undergo a transition into the muscle fibres of the ventricles. It has been shown to be a part of the wall of the primitive cardiac tube, and it will be recalled that its upper end begins in the region of the primitive sinus tissue and the neighborhood of the downward fibres from the node of Kieth and Flack. It is conceivable that other connections between the auricles and ventricles may exist, but such a possibility is very remote and its actual existence has never been proved. In fact, its existence has been conclusively disproved by direct experiments on living animals. All observers who have carried out experiments of cutting or clamping and crushing the bundle of His,

have obtained concordant results which lead to the conclusion that the function of this tissue is purely that of impulse conduction. Their work goes even further and limits the conduction of impulses from auricles to ventricles to this tissue solely. But one observer has suggested that the tissue of this bundle is not itself the conducting tissue. He has conceded the results of experiments, but interprets them as indicating nothing more than the passage of nerve fibres through this bundle. He believes that it is through these nerve fibres that the conduction takes place. This contention is susceptible of direct proof or disproof. It is well known that nerve tissue will regenerate after its destruction, while muscle tissue will not. The latter heals, but it is a cicatricial union and not a regeneration of muscle tissue with restoration of its function. Now it has been possible to crush this bundle of His in dogs and to allow them to recover. In two animals thus treated complete heart block developed and they lived for over 300 days each. During this entire period the block remained complete, and on histological examination of their hearts there was found to be cicatricial tissue occupying the line of crushing. Further, control tests were made on portions of the auricles and yielded similar results, that is, cicatricial development without sign of muscular restoration. From this it may be confidently stated that the conducting structure is not nervous. This leaves us to the necessary conclusion that the power of conduction lies in the peculiar tissue of the bundle. Electrical stimulation of this tissue has shown that the impulse will pass with equal facility and rapidity in either direction. Cocaine will paralyze nervous tissue when it comes into contact with it, and Cullis and Dixon have shown that its application to the exposed bundle of His has no effect in causing heart block.

That this is the sole means of impulse conduction, not only through the auriculoventricular tissue, but also throughout the ventricles, is shown by a number of experiments, among which may be mentioned the fact that severance of one limb of the bundle does not bring about a block of impulses except in its area of distribution. It has been demonstrated that the false tendons in the hearts of certain animals are made up wholly of Purkinje fibres, and stimulation of the cut ends of these gives rise to typical contractions of the muscular tissue to which they are supplied. The impulse will pass through these in either direction and at the same rate. If the base of one of these tendons is circumscribed by an incision, and the tendon is then stimulated, there is no response, showing that the fibres of conduction have been severed. It may be concluded, from these and other experiments too detailed to give, that the conducting mechanism of the heart is the Purkinje tissue which makes up the bundle of His and ramifies throughout the entire ventricular musculature.

A further pertinent observation is to the effect that the rhythmic power of the cardiac tissue is in inverse proportion to its distance from the sinus tissue.

In the course of certain of the experiments detailed in brief above, it has been noticed that there may develop a synchronous contraction of auricles

and ventricles. This has been called nodal rhythm, and has been ascribed to the assumption of impulse initiation by the node of Twara in the presence of destruction of the node of Kieth and Flack. This is probably not the case, and the more likely explanation of the phenomenon is, that the destruction of the normal mechanism for the conduction of impulses from the sinus tissue to the auricle and the bundle of His, through the removal of the node of Kieth and Flack, has brought about the necessity of the transmission of the impulses through the remaining primitive sinus tissue, with a consequent delay of the impulses to the auricles to such an extent that they contract simultaneously with the ventricles.

From all these observations we may conclude: 1. The impulse initiation occurs in the primitive sinus tissue in the auricle, in the region of the great veins, and the coronary sinus. 2. Impulses are normally transmitted through the node or bundle of Kieth and Flack to the distant portions of the auricles. 3. The same bundle carries the impulses to the bundle of His and the node of Twara. 4. The impulse is then conducted to the ventricles through the medium of the Purkinje fibres of the bundle of His and its ramifications out even to the most remote parts of the ventricular musculature. 5. Lastly, the sole conducting mechanism from the auricles to ventricles and through the ventricles is the bundle of His, and this power of conduction is not due to contained nerve fibres, but is the specific property of this specialized tissue.

Therapeutic Notes.

Treatment of Alopecia areata.—Sabatié, in *Progrès médical* for June 29, 1912, advises that in ordinary cases a small pledget of cotton dipped in one of the following solutions be rubbed over the involved area:

℞ Acidi acetici glacialis, 2 grammes;
Chloralis hydrati, 4 grammes;
Alcoholis,.... }ana 25 grammes.
Aetheris,.... }

M. ft. solutio.

℞ Tincturæ cantharidis, 2 grammes;
Spiritus lavandule, 50 grammes.

M.

These solutions, or others, should be used alternately.

By night, if the skin is tolerant, the following stimulating ointment may be used:

℞ Balsami peruviani, }
Resorcinolis,.... }ana 1 gramme;
Acidi salicylici,.... }
Petrolati,..... }ana 50 grammes.
Adipis lince hydrosi, }

M. ft. unguentum.

The involved area should, in addition, be rubbed with a coarse brush or massaged several times a day. Where the stimulating applications cause undue irritation of the skin, the proportion of the contained active substances may be reduced, the intervals between applications lengthened, or treatment intermitted for three or four days.

In more obstinate cases the patches may be treated with pure acetic acid, dry cotton being used to remove excess of the drug; or, a ten per cent.

solution of phenol in alcohol may be used, alcohol being employed for removal. These applications should be made only by the physician at weekly intervals. Some form of vesicant plaster may be used instead, the blister raised being removed and the open surface painted with a five per cent. solution of silver nitrate.

Constitutional treatment in alopecia should include the administration of nerve tonics or sedatives, as indicated; cold douching or sponging, followed by alcohol rubs; and sulphur baths. The exciting cause of the condition, *e. g.*, mental shock, fear, grief, overwork, syphilis, or reflexly acting factors such as gastric, uterine, aural, nasal, and, above all, dental conditions, should also be ascertained and eliminated.

Gonorrheal Prophylaxis.—Assistant Surgeon R. B. Henry, U. S. N., in the *Military Surgeon* for May, 1912, states that after considerable experimentation the following calomel ointment was adopted on the U. S. S. *Rainbow* as the best preventive of gonorrheal infection:

℞ Hydrargyri chloridi mitis, 50 grammes;
Petrolati liquidi, 80 cubic centimetres;
Adipis lince hydrosi, 70 grammes.
M. ft. unguentum.

This is injected with an ordinary penis syringe of glass. After 529 admitted exposures only four cases of gonorrhea developed. Of these patients, one had denied exposure and not received the prophylactic treatment, while two received the treatment late, more than twelve hours after exposure. In only one case, therefore, can the treatment be considered a failure.

Treatment of Paroxysmal Tachycardia.—P. Carnot and P. Baulfe, in *Paris médical* for April 20, 1912, report a severe case of frequently recurring tachycardia, previously treated unsuccessfully with bromides, antipyrine, bile salts, epinephrine, ipecac, etc., in which the continued use of small doses of digitalis yielded marked benefit. Under daily doses of four drops of the official French digitalin solution (corresponding approximately to one minim of tincture of digitalis), later reduced to three and even two drops, given with suitable intermissions for two months, the paroxysms were entirely arrested and the patient was enabled to resume his occupation as furniture mover. Three months after the treatment had been stopped the attacks returned, but they were again arrested by daily three drop doses of the solution. No evidences of organic cardiac trouble were present in the case.

Treatment of Cholelithiasis.—P. Mayer, in the *Lancet* for June 1, 1912, lays stress on the value of sodium salicylate, in conjunction with belladonna, in cholelithiasis, both acute and chronic. He gives 0.5 gramme of the salicylate and from 0.01 to 0.02 gramme of extract of belladonna from two to four times daily. The use of hot compresses and rest in bed are also enjoined. In severe cases of biliary colic, with constant pain and high fever, Mayer administers 0.06 gramme calomel every hour for five or six doses, then every two hours until the bowels move. Both pain and fever are markedly relieved thereby.

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CHARLES E. DE M. SAJOUS, M.D., LL.D.,
Supervising Editor.

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THE SURGICAL CONGRESS.

The Clinical Congress of Surgeons of North America, which has been held in New York during the past week, has been productive of good in three ways. Through its sessions and through the clinics visiting surgeons from the smaller centres of population have been brought into contact with the leaders of thought, and will go back to their work refreshed and stimulated by what they have seen and heard. The younger men in the various clinics of New York will profit by the opportunity to demonstrate to a critical audience gathered from a wide area their facility as surgeons and their ability as clinical teachers. The leaders themselves will benefit by the opportunity to lay before the most alert men in the profession the results of their studies and experiments and will themselves be stimulated to increased effort to perfect their technique and to comprehend the pathological processes which they hope to remedy, and the physiological processes whose aid they wish to invoke. The fact that the third annual congress has brought together nearly three thousand men, deeply interested in the work of the surgeon, is the best proof that these meetings fill a real want in the profession and serve a good purpose to the surgeons of the country and through them to all its citizens.

THE TYPHOID CARRIER.

Philadelphia having a mortality rate from typhoid fever of fourteen in each hundred thousand of population, which is extremely high compared with European cities where the rates are from three to six to the hundred thousand, the director of her Department of Health, Dr. Joseph S. Neff, is endeavoring to eliminate where possible all causative factors. Among these are the "typhoid carriers" who, as recent investigations have shown, represent about ten per cent. of patients convalescing from typhoid fever. These individuals, even when perfectly well, continue to eliminate the typhoid bacillus in their urine and feces almost any number of years, and thus become as fruitful sources of typhoid as acute cases. A recent circular requests physicians not to discharge convalescents from hospitals until two successive negative cultures of urine and feces, at least one week apart, have been secured. If this order cannot be enforced, the physician is asked to send the name, address, and occupation of patients who leave prematurely to the bureau of health. To safeguard the public further against infection by typhoid carriers, it is urged that all patients, especially those who have had transient bacilluria, or those who handle food supplies, be instructed as to the danger of the spread of the infection and in simple rules of cleanliness.

While these measures will doubtless prove of value, serious prophylactic results will not be obtained until the typhoid carrier is converted into a normal individual by adequate treatment, with the attending physician as the legal representative of the board of health. The first requisite in the process, however, is still to be attained: We have no certain means of ridding the patient of his contaminating bacteria. What is needed, therefore, while auxiliary measures are being used, is an agent which administered internally will obtain negative cultures of urine and feces before the patient is given a free bill of health.

The only promising agent in this connection is hexamethylenamine, which both in man and the lower animals finds its way to practically all body fluids. As pointed out by Crowe four years ago, hexamethylenamine appears in the bile in quantities which suffice to exercise a decided bactericidal action, a fact which accounted for its usefulness in several disorders due to pathogenic organisms, including the typhoid bacillus, recorded by Richardson, Churchman, and others. Chauffard found, moreover, that in typhoid fever thirty grains daily in divided doses sufficed to keep the bacilluria under control. These and other data available in literature tend to show that we have in hexamethylenamine a drug which might enable us to protect the

public without subjecting the bacillus carrier to serious inconvenience. A much needed research, therefore, is one which hospital authorities could alone satisfactorily undertake, viz., the determination on a large scale of the actual value of hexamethylenamine in ridding the excretions of typhoid fever convalescents of their contaminating bacteria, and if this agent should fail to prove of lasting benefit, to seek others until an efficient one is finally discovered.

THE WORLD'S DEBT TO MEDICINE.

Destructive criticism is nowadays frequently aimed at the medical profession, and it seems to be the object of some well known men to depreciate the achievements of medical science and to lead the public to believe that the world's debt to medicine is not great. In Great Britain at the present time, some very prominent politicians have taken somewhat the same line, and in their efforts to get through a bill, calculated to disrupt the medical profession, have not hesitated to sneer at medical men and to impute to them all kinds of unworthy motives for their temerity in opposing a measure which, if passed, would not only ruin their own prospects, but in its existing shape would be of doubtful benefit to the community at large. The world's debt to medicine is so obvious that it appears to require little argument in its support. Putting on one side the results brought about by curative and remedial medicine, when the past, present, and future of preventive medicine are considered the brain almost refuses to take in the wonders achieved. In all civilized countries morbidity and mortality have been decreased to such an extent that in the two largest and most crowded cities of the world the general sickness rate and death rate have been reduced to figures which would have been deemed impossible a few years ago. By means of careful and painstaking research, conducted under conditions perilous to health in some of the most disease ridden parts of the globe, the origin of some of the deadliest maladies known has been discovered, and by intelligent and practical use of the knowledge thus gained, these diseases have been robbed of their terrors and in some instances almost wiped out. Typhus has to all intents and purpose disappeared as a disease of civilization; malaria, the greatest pest of all, is no longer the menace it formerly was. Yellow fever is known to be controlled easily if proper methods are introduced, and plague is, at all events, kept at bay by the application of means made possible by the discovery of the manner in which it is chiefly transmitted. Typhoid fever, once the scourge of civilized communities, is

not so now, for it has been conclusively demonstrated that this disease flourishes only where slipshod and inefficient sanitary management holds sway. While the history of preventive medicine in the past has been a series of brilliant doings, and its present progressive, its future presents the promise of results still more health giving. Diseases of occupation, diseases brought about by the exigencies of city life, and social diseases generally, b'd fair to be soon dealt with effectively. Most of the tropical diseases will probably be wholly exterminated before many years have elapsed, and the time is in sight when big epidemics of disease will be things of the past. To members of the medical profession the great deeds in the realm of preventive medicine are due, and Americans hold foremost places in the roll of fame of this branch of medical science. The medical profession the world over is still striving for the good of mankind, and upon it depends the health, mental and physical, of the human race. Already medical men have erected to themselves monuments more lasting than brass, and thus the world's debt to medicine is plain, even to him who runs and reads.

HOSPITAL COOPERATION.

The third annual report of the Hospital Bureau of Standards and Supplies, organized and maintained by the cooperation of New York hospitals, shows that the bureau has been of material service to the institutions supporting it. The fifteen hospitals which have membership purchased, during the calendar year of 1911, \$362,000 worth of supplies under agreements arranged through the bureau. While no specific figures are given as to the amount saved, it appears that a material economy was effected and, what is of even greater importance, the standards required have been much improved through the operation of the bureau. Sixty-three agreements are now in force covering a large range of supplies, including drugs, food stuffs, fuel, surgical instruments and supplies, paints and oils, silverware, automobile tires, and hospital furniture. The bureau has been operated at an expense for the year of a little over \$10,000, this sum being furnished by the institutions which hold membership, and the cost divided in proportion to the current annual expenses of each institution. The membership is divided into two classes, resident and nonresident, the latter, whose fees are only half those of resident members, receiving the benefit of all the general agreements which cover supplies not subjected to particular local conditions, but not sharing in the benefits of local agreements which cover such things as coal, ice, etc., though

they do receive the copies of agreements with local dealers, which are likely to furnish to the nonresident member valuable information for the comparison of prices.

The bureau is not a distributing agent, but merely makes agreements as to prices, terms, and standards. Each individual institution sends in its own orders and deals directly with the dealer in each case, thus preserving its autonomy, but profiting by cooperation. The plan is an excellent one and might well be adopted by other groups of hospitals, not only as a check against extravagance in the purchase of supplies, but as a means of standardizing, in the most economical and effective manner, the quality of such supplies.

A TUBERCULOSIS SANATORIUM IN THE CROTON WATERSHED.

In accordance with the law providing for the establishment of tuberculosis sanatoria, a hearing was recently held before the State commissioner relative to the proposed location of a sanatorium in Westchester county, in the vicinity of Yorktown Heights. The proposed site is in the Croton watershed, and the location of the institution at this point was opposed by representatives of the city of New York, on the ground that it would be a source of danger through possible pollution of the water of Croton Lake.

Some of the statements which have been made on behalf of the city appear quite absurd; yet we can sympathize with the city authorities in their opposition to the proposed site. The whole matter presents a difficult problem. It is obvious that the watershed is better off without institutions of any kind, in fact without even private dwellings. Yet it would be perfectly legal for a large hotel to occupy the same site without obtaining consent from the local authorities or from the State health commissioner. In fact, if we remember the law correctly, this restriction applies only to the location of tuberculosis sanatoria. It is very doubtful whether there is any proper foundation for the opposition of the city authorities to the proposed institution as a tuberculosis sanatorium, and it is equally doubtful whether objections made on the ground of possible sewage pollution, irrespective of whether the institution is for tuberculous patients or not, would be regarded as valid. On the whole, however, we think it was most unwise to select a site against which such really valid objections could be made, and hope it will be possible to find another site, not far removed, but outside the limits of the watershed.

PASTEURIZATION AND INFANT FEEDING.

The question of pasteurizing cow's milk to be used in infant feeding has been so widely discussed that a reopening of the question may seem unnecessary. But it will be of interest to our readers to add to this discussion the opinion of a leading pediatricist whose article appears in our present issue. Dr. Louis Fischer, in this communication, says: "To state that by subjecting milk to a temperature of 170° F. for twenty minutes renders milk safe, is unscientific and uncertain. . . ." The learned author then gives the reason for this statement, which is that the spores of many infectious diseases can withstand a much higher temperature and are not destroyed by this steaming process; furthermore, filth introduced into milk remains and cannot be removed by steam. Disease germs remain in milk when once there, even though the milk is pasteurized. These germs may be dead, but they abound in the milk, and worst of all, their poisons or toxins cannot be destroyed by pasteurization. Doctor Fischer, naturally, comes to the conclusion that it is more rational to subject milk to a rigid inspection and apply strictly sanitary measures to the source of all milk supply, thus preventing the introduction of disease germs or dirt in any form.

We have quoted the author at some length, but the importance of the question will be our excuse. Doctor Fischer's statement here cited coincides with the sentiments expressed in our editorial article, October 5, 1912.

A PARETIC SENTENCED TO PRISON.

The question of the responsibility of criminals is assuming greater complexity with our increase of knowledge; a miscarriage of justice, however, such as recently occurred in France is rare. It was reported to the Société de psychiatrie of Paris by Dupré and Marinier (*Presse médicale*, October 30, 1912), that a sufferer from general paralysis of the insane, whom they presented, was sentenced last September for theft. Notwithstanding his very evident mental disturbance, he went through trial and sentence without discovery and it was only in prison that his condition was disclosed.

A FRUITFUL STUDY OF PERNICIOUS ANEMIA.

Lüdke, of Würzburg, reported to the third French Congress on internal medicine (*Semaine médicale*, October 30, 1912) that he had discovered in the nonpathogenic bacteria of the intestine, particularly *Bacterium coli*, the presence of hemolyzing substances. These substances exist also in pathogenic bacteria, of typhoid fever, for example, and of dysentery. By making intravenous or subcutaneous

injections into monkeys of his hemolytic virus, Lüdke obtained a perfect clinical and anatomical picture of pernicious anemia in man. This form of anemia yields to seropathy, and with the exercise of due care it is possible to obtain an antiserum which gives favorable results, both curative and preventive.

Medical Law.

X. THE PHYSICIAN AS WITNESS.

In the case of Beebe vs. Greene, 82 Atlantic Reports 796, tried by a Rhode Island Court, the plaintiff had commenced an action against the county to recover for injuries sustained in being thrown from his wagon by reason of a defective highway.

It appeared that as his wagon overturned, plaintiff was thrown from his position on the load, a distance of about ten feet, to the ground, striking upon his back and hips; that after the accident he was confined to his bed for about three weeks and has never since been able to do his regular work, and at the time of the trial, fifteen months after the accident, he was suffering from a chronic injury at the sacroiliac joint, which so affected the nerves leaving the spinal cord at this point, which supply the lower limbs, that a portion of the body was suffering from anesthesia, the action of his legs was limited, he could not walk without a halt, could not cross his legs, and could not stoop. The reflexes were impaired, entirely gone in the right knee; he could not lie upon his left side without great pain, and in the opinion of the physicians his injuries were permanent.

During the course of the trial, the trial judge questioned Dr. Charles A. McDonald, a witness for the defendant, as follows:

The court: What do you mean by the relaxed sacroiliac joint? Do you mean more movement than normal? Witness: It is abnormal movability of the joint. The court: There is no movement ordinarily? Witness: A slight movement. The court: Don't all physicians say it is very rare to find any movement in the ordinary man? Witness: Not to-day. Five years ago they said that. The court: Didn't you testify in the case of Miller vs. The Rhode Island Company? Witness: That is Dr. William McDonald. The court: Do you know Doctor Parmenter, of Boston, and Doctor Howard and Doctor Lovett? Witness: Yes. The court: Would you be surprised that they said it was extremely rare—they had only known two or three cases of movement of the sacroiliac joint? Witness: I should be surprised if they said it. The court: It has only been about five years that there has been very much written on the subject? Witness: That is all. The court: Do physicians say generally that only in cases of women having childbirth and sometimes in other pelvic cases you get any movement of the sacroiliac joint? Witness: Yes, sir. The court: Isn't that statement made? Witness: Yes; they are commonly made by orthopedic surgeons. The court: These three surgeons testified before me. Witness: I am not sure they said that because they write right to the contrary.

At this point counsel for defendant objected to the questions of the judge because the matters referred to by the judge were not before the court in that case, and ought not to be before the jury. The judge thereupon made the following statement to the jury:

The jury ought not to attach any importance to anything I said in the way of being affirmative testimony. I

am not a witness, and I don't want you to attach any importance to it as testimony. It was a subject which greatly interested me in that case, and I had to read the testimony two or three times, and I know it was a rather interesting question among surgeons as being somewhat discussed recently.

A verdict was given for plaintiff from which defendant appealed, assigning as ground for the appeal, among other things, the questioning of the witness, Doctor McDonald, by the judge, as above shown. Mr. Justice Dubois, of the Supreme Court, in passing upon this assignment of error, expressed the views of the Supreme Court as follows:

The portion of the foregoing remarks most strongly objected to by the defendant are the following: "Would you be surprised that they (Doctor Parmenter, Doctor Howard, and Doctor Lovett) said it was extremely rare—they had only known two or three cases of movement of the sacroiliac joint?" and, "These three surgeons testified before me," to which question and statement the witness made the following replies, respectively, "I should be surprised if they said it"; and "I am not sure they said that because they write right to the contrary." The danger to be apprehended from the conduct of the court in the premises was that the jury before whom the case was being tried might get the impression that the judge's recollection of the testimony of these surgeons, given in another case before him, was contained in the question propounded to the witness, and was evidence for them to consider in arriving at a verdict. There might have been some ground for this apprehension if the court had ignored the objection made by the defendant or had allowed the jury to form their own conclusions in the matter without giving them suitable instructions concerning the same. But the court forthwith expressly instructed the jury that he was not a witness, and was not testifying in asking the questions and in making remarks that he did, and they were duly cautioned not to attach any importance to it as testimony. It is very evident that the judge was trying to ascertain how positive the witness was in regard to the position that he had assumed on the question of motion in the sacroiliac joint.

The court had a perfect right to interrogate the witness for the purpose of inquiring what he meant by the expression "relaxed sacroiliac joint." If a witness, expert, or ordinary, ecclesiastical or lay, makes use of language that does not convey a distinct and clear meaning to the mind of the court, it is fair to presume that ordinarily it will not have a clearer meaning in the minds of the jurors. It is not only the right, but it is the duty of the judge presiding in the trial of a case to lend his aid in the elicitation of the truth from witnesses, and to see that the same is not concealed, obscured, or buried in a mass of unintelligible verbiage, or in technical expressions, meaningless to a layman, when the same can be reduced to the simple terms of everyday language without detriment, and he may always inquire of an expert or other witness what he means by a certain expression he has used for the purpose of allowing the witness to clarify his meaning by the selection and use of other words. The court in the matter under consideration did not exceed his discretion in the premises, and properly instructed the jury concerning the same.

News Items.

Associated Out Patient Clinics of New York.—Announcement is made that the organization meeting of the Associated Out Patient Clinics of the City of New York will be held on Wednesday evening, November 20th, at 8.15 o'clock, in Room 21, New York Academy of Medicine.

The Relation of Smoke to Health.—Dr. Raymond C. Benner, chief fellow of the smoke investigation of the Department of Industrial Research, University of Pennsylvania, will deliver a lecture on the smoke problem at the next meeting of the New York Section of the Society of Chemical Industry, to be held in Rumford Hall, 50 East Forty-first Street, New York, on the evening of November 22d. The lecture will be illustrated with lantern slides.

Northern Medical Society.—A meeting of this society will be held on Monday evening, November 18th, at the Bronx Hospital Dispensary Building. Dr. A. L. Soresi will demonstrate A New Sound for the Dilatation, Irrigation, and Medication of the Posterior Urethra. Dr. William J. Robinson, president, will report A Unique Case of Artificially Induced Sterility. The papers of the evening will be: 1. The Armamentarium of the Modern Urologist, with demonstrations, by Dr. Leo Buerger; 2. Some Interesting Skin Cases, with lantern slide demonstration, by Dr. William S. Gotthel. The profession is cordially invited to attend.

Suffolk County Medical Society.—The one hundred and sixth annual meeting of the Medical Society of the County of Suffolk, N. Y., was held in Riverhead, L. I., on October 31st, under the presidency of Dr. Hugh Halsey, of Southampton. Officers were elected as follows: President, Dr. Guy H. Turrell, of Smithtown Branch; vice-president, Dr. S. R. Corwith, of Bridgehampton; secretary, Dr. Frank Overton, of Patchogue; treasurer, Dr. Barton D. Skinner, of Greenport; censors, Dr. A. E. Payne, of Riverhead; Dr. A. E. Diedrick, of Bay Shore; Dr. M. B. Lewis, of Sag Harbor; delegate to the State Medical Society, Dr. S. B. Allen; alternate, Dr. J. H. Benjamin, of Riverhead.

American Association of Clinical Research.—At the fourth annual meeting of this association, held in the New York Academy of Medicine on Saturday, November 9th, under the presidency of Dr. Alvin Roy Peebles, of Boulder, Colo., the following officers were elected to serve for the ensuing year: President, Dr. Frank H. Blackmar, of Chicago; first vice-president, Dr. Leonard K. Hirschberg, of Baltimore; second vice-president, Dr. Alice Conklin, of Chicago; secretary and treasurer, Dr. James Krauss, of Boston, reelected; registrar, Dr. S. R. Klein, of New York; member of the Research Committee for three years, Dr. Alvin Roy Peebles, of Boulder, Colo.; member of the Educational Committee, Dr. H. D. Schenck, of Brooklyn.

Doctor Jacobi Resigns as a Trustee of the Academy of Medicine.—At a stated meeting of the New York Academy of Medicine, held on Thursday evening, November 7th, Dr. Abraham Jacobi tendered his resignation as a member of the board of trustees of the institution on account of advancing years. The reading of the formal note of resignation was heard with regret by all present and many protests were made against its acceptance, but Doctor Jacobi insisted that, despite protests, his resignation must be accepted, as it was no longer possible for him to hold the position, and it was time for a younger man to take his place; the trustees were obliged very unwillingly to accept. Doctor Jacobi was nominated to membership in the Academy in November, 1856, and was elected the following June. He served two terms as president, from 1885 to 1889, and has been a trustee ever since he retired as president. His successor, who will have three years to serve, has not yet been appointed.

Personal.—Professor Carl von Noorden, of Vienna, delivered a lecture at the New York Postgraduate Medical School and Hospital, Thursday afternoon, November 14th, on Arteriosclerosis.

Dr. Robert G. Cornwell, of Riverhead, L. I., was nominated by the Democratic party for coroner of Suffolk County thirty-five years ago and was defeated. Each second year thereafter he has been renominated, and sixteen times has been defeated. This year Doctor Cornwell was elected, and a dinner is to be given in his honor to celebrate the victory.

Dr. Samuel T. Nicholson, of St. Louis, Mo., has been appointed head of the Sydenham Hospital, Baltimore, and assumed his new duties on November 1st.

Dr. Carl J. Hedin, first assistant superintendent of the Maine Hospital for the Insane, has been appointed superintendent of the State Home for the Feeble-minded, to succeed Dr. George S. Bliss, who resigned recently.

Dr. S. J. Banker, of Glens Falls, N. Y., was elected president of the Fourth District Branch of the Medical Society of the State of New York, at the recent annual meeting.

Dr. Charles Bagley, Jr., for several years resident physician at the Hebrew Hospital, Baltimore, has gone to Boston, where he will act as assistant to Dr. Harvey Cushing at the new Brigham Hospital.

Dr. Mazzyk P. Ravenel, head of the hygienic laboratory of the University of Wisconsin, has been commissioned a first lieutenant in the Medical Reserve Corps of the United States Army.

November Meeting of Homeopathic Medical Society Postponed.—On account of the Clinical Congress of Surgeons being held in New York during the past week, the executive committee of the Homeopathic Medical Society deemed it advisable to postpone the November meeting from the 14th to the 21st. The programme at this meeting will include papers by Dr. J. H. Ball, Dr. G. C. Dominick, Dr. R. F. Rabe, and Dr. W. H. Watters, professor of pathology in the Boston University School of Medicine.

Visiting Surgeons Entertained by Brooklyn Physicians.—The University Club of Brooklyn observed "Physicians' Night" by entertaining at dinner eight of the leading surgeons in the United States and one from England, who were delegates to the Clinical Congress of Surgeons of North America. Dr. William J. Mayo, of Rochester, Minn., was the guest of honor. The other guests were Dr. John B. Murphy, of Chicago; W. Arbuthnot Lane, F. R. C. S., of London; Dr. Edward Martin, of Philadelphia; Dr. George Crile, of Cleveland; Dr. Robert C. Coffey, of Portland, Ore.; Dr. Albert J. Ochsner, of Chicago, and Dr. John G. Clark, of Philadelphia. Mr. Edward W. McMahon, president of the club, was toastmaster.

A Social Service Newspaper.—Announcement is made that the State Charities Aid Association has begun the publication of a monthly newspaper, to be called the *S. C. A. A. News*, to keep its ten thousand members in touch with its work in the field of preventive philanthropy in New York State. The new periodical will not publish long articles or extended reports, but will be mainly a news bulletin. It is the aim of the association to place it in the hands not only of all its members, but of every person in the State who is interested in the various activities of the association. There is no subscription-price, and any one may receive it every month by sending his address to the State Charities Aid Association, 105 East Twenty-second Street, New York.

Fordham University Medical School Reorganized.—Dr. James J. Walsh, dean of the medical school of Fordham University, and fourteen professors and assistant professors have resigned as a result of a disagreement with members of the faculty who are connected with Fordham Hospital. Dr. William P. Healy, attending surgeon at Fordham Hospital and clinical professor of medicine at the medical school, has been appointed to succeed Doctor Walsh, who has been connected with the institution since its establishment eight years ago, acting as dean for five years. Among those who have resigned are Dr. V. E. Sorapure, prodean and professor of pathology; Dr. William J. M. A. Maloney, professor of neurology; Dr. I. Abrahamson, clinical professor of neurology; Dr. Horatio Storer, consulting director of museums; Dr. B. T. Tilton, clinical professor of surgery; Dr. Siegfried Wachsmann, clinical professor of medicine, and Dr. Charles A. Elsberg, professor of neurological surgery.

Dinner in Philadelphia to Doctor Abbott.—Dr. H. Augustus Wilson, professor of orthopedic surgery at Jefferson Medical College, gave a dinner on the evening of November 11th, at the University Club, Philadelphia, to Dr. E. G. Abbott, of Portland, Me., lecturer on orthopedic surgery, Bowdoin College, surgeon in chief to the Children's Hospital, and orthopedic surgeon to the Maine General Hospital, in appreciation of his splendid contributions to orthopedic surgery. (See our issues for June 24, 1911, and April 27, 1912.) Among those present were Dr. J. Chalmers Da Costa; S. D. Gross, professor of surgery, Jefferson Medical College; Dr. W. S. Baer, associate professor of orthopedic surgery, Johns Hopkins University; Dr. Gwilym G. Davis, professor of orthopedic surgery, University of Pennsylvania; Dr. H. A. Pingree, associated with Doctor Abbott; Dr. W. J. Taylor, surgeon to St. Agnes's and Orthopedic Hospitals, Philadelphia; Dr. A. J. Davidson, demonstrator of orthopedic surgery, Jefferson Medical College; Dr. E. H. Funk, medical director, Jefferson Medical College Hospital; Dr. W. G. Erving, professor of orthopedic surgery, Howard University; Dr. J. K. Young, professor of orthopedic surgery, Philadelphia Polyclinic; Dr. F. W. Lamb, associated with Doctor Abbott; Dr. J. M. Spellissy, surgeon to the Methodist and St. Joseph's Hospitals; Dr. R. T. Taylor, clinical professor of orthopedic surgery, University of Maryland; Dr. A. R. Shands, president of the American Orthopedic Association, and Dr. Charles E. de M. Sajous, supervising editor of the *NEW YORK MEDICAL JOURNAL*.

Dengue in Florida.—Dr. Joseph Y. Porter, State health officer of Florida, reported on October 31st that dengue was present in Tampa, Gainesville, Miami, and Key West.

Cholera.—According to *Public Health Reports*, dated November 8th, cholera continues to spread in Japan. A considerable extent of territory and a number of important ports and cities have been infected, and the disease has also appeared in the interior. In China cholera continues to be epidemic in a number of southern ports, and it is believed that it is present in many localities from which no official reports have been received. Cholera has for many years been present in certain parts of India, and its prevalence at present is not at all unusual. In Turkey in Asia cholera has been epidemic during the past summer and autumn over wide stretches of territory, including many important cities and ports. In the town of Aleppo alone, from May 10th to August 31st, 305 cases were reported with 267 deaths. According to press despatches the outbreak of cholera among the Turkish troops is assuming serious proportions, the disease getting a firm hold on account of the massing of the troops, the lack of proper food, and the complete absence of sanitary arrangements. The danger to Constantinople is great on account of the influx of refugees, and the authorities are preparing a special quarantine hospital, with 400 beds.

Army Medical Corps Examinations.—The surgeon general of the United States Army announces that preliminary examinations for the appointment of first lieutenants in the Army Medical Corps will be held on January 20, 1913, at points to be hereafter designated. Full information concerning these examinations can be procured upon application to the Surgeon General, U. S. Army, Washington, D. C. The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between twenty-two and thirty years of age, a graduate of a medical school legally authorized to confer the degree of Doctor of Medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training as an interne, after graduation. The examinations will be held simultaneously throughout the country at points where boards can be convened. In order to perfect all necessary arrangements for the examination, applications must be completed and in possession of the adjutant general at least three weeks before the date of examination. Early attention is therefore enjoined upon all intending applicants. There are at present thirty-five vacancies in the medical corps of the army.

A Conference on the Prevention of Insanity.—A Mental Hygiene Conference and Exhibit, conducted by the National Committee for Mental Hygiene and the Committee on Mental Hygiene of the New York State Charities Aid Association, was held at the College of the City of New York, November 8th to 15th. The exhibit, which formed an interesting feature of the conference, was prepared by experts in mental diseases, under the direction of Dr. Stewart Paton, of Princeton, N. J. It was the first extensive exhibit on mental diseases ever shown, and gave a clear and logical presentation of the extent of insanity, its nature, causes, and means for its prevention. There was an extensive series of meetings, addresses being delivered by authorities of national and international reputation on the various phases of mental hygiene. This conference and exhibit form a part of the mental hygiene movement, which is a well organized endeavor to reduce the alarming amount of mental impairment in the United States by making public careful statements of the causes of mental diseases, by securing earlier medical treatment, and by preventive social service with individuals threatened with mental breakdown. The movement also includes a medical survey of institutions caring for the insane in the United States for the purpose of determining the best measures to improve standards of care among the 200,000 sufferers from mental disorders. This nationwide movement is being directed and advanced by the National Committee for Mental Hygiene, 50 Union Square, New York. Dr. Llewellys F. Barker, professor of medicine, Johns Hopkins University, is president of the committee, and Dr. William H. Welch, professor of pathology, Johns Hopkins University, and Dr. Charles P. Bancroft, superintendent of the New Hampshire State Hospital, are vice-presidents. The work in New York city and State is being carried on by the Committee on Mental Hygiene of the State Charities Aid Association, 105 East Twenty-second Street, New York.

To Investigate Contagions among Indians.—Assistant Surgeon J. P. Leake, United States Public Health Service, has been detailed to investigate the health conditions prevailing among the Indians in Western New York, and to ascertain, in accordance with the directions of Congress, the extent of the prevalence of tuberculosis, trachoma, and smallpox.

The Australian Institute of Tropical Medicine.—The *British Medical Journal* states that considerable progress has recently been made in the organization of the Australian Institute of Tropical Medicine at Townsville, Queensland. Dr. W. Nicoll, of the Lister Institute, and until recently Ernest Hart, scholar of the British Medical Association, has been appointed chief assistant; Doctor Priestley, Beit Memorial scholar, an Australian graduate who for the last year has been working at the Lister Institute, has been appointed second assistant; and Doctor Young, assistant chemist at the Lister Institute, biochemist.

Trachoma in Kentucky.—Passed Assistant Surgeon John McMullen, of the United States Public Health Service, detailed last July by the surgeon general to investigate the prevalence of trachoma in Kentucky, reports that the disease is widely prevalent in the mountain region of the State. Out of approximately 4,000 people examined in this locality, 500 were found to have the disease. The examination of school children showed that in the various mountain counties from three per cent, in some counties to eighteen per cent, in others were affected. It is evident that the disease has been present among these native born Americans for many years. It is believed that similar conditions will be found to exist in the contiguous mountain regions of Tennessee, West Virginia, Virginia, and possibly of North Carolina.

Seven Days' Fever in the Canal Zone.—The occurrence in the Canal Zone during the past summer of a number of cases of what appears to have been the seven days' fever, previously reported only in India and the ports of southeastern Asia, adds one more disease to the list of those that the American physician should bear in mind in the consideration of continued fevers. This disease was differentiated from other fevers by Rogers in 1905-1908 as a sporadic fever occurring in the seaports of India. In India and Ceylon this fever has since been found in the cities and towns in low lying regions, usually near the sea. In Calcutta and Colombo it occurs during the summer months, May to September. These are the months during which the disease was noted in the Canal Zone. Physicians in the southern ports of the United States should be on the lookout during the summer months for cases of this fever. The cause of the disease has not been found, and no fatal cases have been noted. Where present, however, it is a disease to be thought of in the diagnosis of malaria.

New York Division of the Medical Reserve Corps of the Army.—Forty-five physicians of the city of New York, who hold commissions as first lieutenants in the Medical Reserve Corps of the United States Army, held a meeting on the evening of November 7th and formally organized the New York Division of the Medical Reserve Corps of the United States Army. Colonel L. Merwin Maus, chief surgeon of the Eastern Division of the army, presiding officer at the meeting, presented an interesting paper on the history and purposes of the Medical Reserve Corps, in which he spoke of the interest taken in the corps by the War Department and stated that steps would shortly be taken to increase its value to the individual officers of the army by the establishment of camps of instruction where the duties of the medical officer would be taught to members on the inactive list. The following officers were nominated for 1913: President, Dr. Henry C. Coe; vice-president, Dr. Thomas Darlington; secretary, Dr. Harold Hays; treasurer, Dr. H. Sheridan Baketel; councilors, Dr. Arnold Knapp, Dr. Howard Lilienthal, Dr. Clarence H. McWilliams, Dr. Eugene H. Pool, and Dr. J. B. Rae. At the next meeting of the society, which will be held at Fort Jay, Governor's Island, on December 5th, addresses will be delivered by Colonel William Stephenson, Colonel Maus, and others. Among the physicians of New York who are first lieutenants in the medical reserve corps are: Dr. Robert Abbe, Dr. George E. Brewer, Dr. Joseph D. Bryant, Dr. Lewis A. Connor, Dr. John F. Erdmann, Dr. Simon Flexner, Dr. A. G. Gerster, Dr. Graeme M. Hammond, Dr. F. P. Kinnicutt, Dr. E. L. Keyes, Dr. James F. McKernon, Dr. S. J. Meltzer, Dr. Robert T. Morris, Dr. William M. Polk, Dr. Robert F. Weir, and Dr. John A. Wyeth.

CLINICAL CONGRESS OF SURGEONS OF NORTH AMERICA

Third Annual Congress Held at New York, November 11th to 16th.

THERE could be no more inspiring sight than the two thousand and more surgeons gathered from every quarter of the United States and Canada, listening night after night with eager attention to the masters of surgery who set before them in simple, terse language the details of the operations which have made the progress of American surgery during the past decade a marvel of the age. The clinical congress was a most happy inspiration, and Dr. Franklin H. Martin, to whose initiative and energy its success is largely due, deserves the gratitude of all surgeons, for all, whether they attend these congresses or not, profit by the interchange of ideas and what was so happily termed by Doctor Murphy the standardization of medical procedure brought about through the congress. A report of the clinics would be obviously impracticable, but we give below a summary of the proceedings of the evening meetings, which, together with the programme of clinics published in the *NEW YORK MEDICAL JOURNAL* for November 9th, will give our readers some idea of the work of the congress.

THE GENERAL SESSIONS.

THE PRESIDENTIAL MEETING.

The presidential meeting of the third Clinical Congress of Surgeons of North America filled the ballroom of the Waldorf-Astoria to the limit of its capacity on Monday evening, November 11th. The members were entertained, pending the arrival of the speakers of the evening, by an organ recital. At half past eight the officers of the congress and guests took seats on the platform, and Dr. George E. Brewer, of New York, vice president elect and chairman of the committee on arrangements, opened the proceedings with a brief address of welcome, stating that the visitors need expect no startling novelties, no spectacular operations, no miraculous cures. The programme of clinics had been arranged in consultation with the president, Doctor Martin, of Philadelphia, with a view to affording opportunities for the visitors to see the normal, everyday clinical work in the hospitals of New York. He directed particular attention to the laboratory demonstrations which would be carried on daily for those who were interested in these lines of work.

Dr. Albert J. Ochsner, of Chicago, the retiring president, said that the keynote of all inspired education is the idea of service; that the essential element of a profession was to render a service of greater value to the recipient than was the reward received to him who gave. In order to render effective service there should be lofty ethical ideals. The congress would undoubtedly prove a powerful stimulant to the ideals of all who attended, furnishing inspiration and enthusiasm which would be carried by the members to all parts of the country. The congress would be of benefit also to the younger members of the profession in the city, giving them an opportunity to demonstrate to the visitors their capacity as operators and their value as clinical teachers. Doctor Ochsner said that inspiration and enthusiasm were the essential factors in the success of any profession, and particularly in the profession of surgery, for the education of the surgeon was not

completed with the conclusion of his college course and enthusiasm was required on the part of the young surgeon to make him prosecute his studies after graduation. In fact, a high degree of preliminary education was not an essential element of success in surgery. If one would pick ten of the leading surgeons of the United States, and they would compare well with ten from any other part of the world, it would be found that only three or four had university degrees before taking up their studies, but they had all the essential enthusiasm which made them prosecute their studies after leaving their medical schools.

Dr. Edward Martin, of Philadelphia, the president elect, then introduced the guests of the congress, including Dr. Otfried Foerster, of Breslau, Germany; Mr. W. Arbuthnot Lane, of London, England; Dr. Abraham Jacobi, of New York; Dr. John A. Witherspoon, of Nashville, Tenn.; and Dr. Robert F. Weir, of New York. In introducing the foreign visitors, Doctor Martin called the delegates to their feet and they gave rousing cheers under his leadership.

Dr. John B. Murphy, of Chicago, congratulated the members upon the magnitude and enthusiasm of the congress. He said that some measure of appreciation of their opportunities shown by those in attendance might be gained from the fact that aside from the monetary expenditure attendance on the congress meant devoting six per cent. of the working year, a serious tax upon the busy surgeon. What return did the surgeon get for this

tax on his time? His return came in the opportunity afforded of coming face to face with the best and foremost students of our time and for studying at first hand the most approved procedures. The congress furnished an opportunity of infinite value to the profession for the standardization of the principles and practice of surgery, and each man who attended the congress in turn became in his own community a centre of standardization of medical procedure based upon the best models.

Dr. Robert F. Weir, of New York, said that as he had



DR. EDWARD MARTIN,
Philadelphia, president.



DR. JOHN G. CLARK,
Philadelphia, vice president.

been the marvel of the age. The American Medical Association was proud of her children, the surgeons of North America.

The Surgery of the Liver.

President Martin then delivered his presidential address, choosing as his topic the surgery of the liver. He divided the topic into three parts, first, the approach; second, the control of hemorrhage; and third, the operation itself. The first topic was really treated last, being illustrated by a number of lantern slides showing the J shaped incision, reaching from the seventh rib to within a finger's breadth of the umbilicus and then turning outward and upward. The different stages of the operation were shown: with lantern slides of photographs of an operation on the cadaver. There came first the incision through the skin, then through the different layers of muscles, each being fully illustrated and described, the pull of the fibres being clearly shown in the illustrations by retouching the photographs. The manner in which the liver presented itself on exposure was clearly shown, and the advantages of this particular method of approach were enumerated, among these being the fact that when the patient was in the proper attitude the wound was distended instead of being closed, giving ready access to the organ.

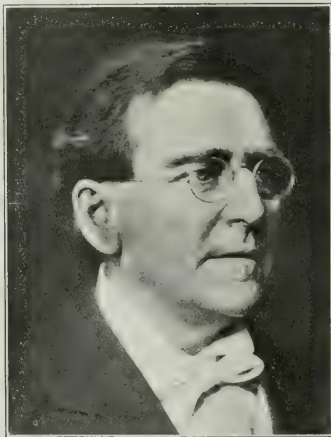
The question of the control of hemorrhage was particularly important in operation on the liver because of the presence of so many large vessels and because no mechanism existed in the liver for the spontaneous suppression of hemorrhage. Fortunately the blood pressure in the liver was low, which somewhat simplified the suppression of hemorrhage. The hemorrhage might be controlled by one of three methods. One of these was by pressure on the ligament supplemented by deep pressure. With a free exposure of the organ bleeding from surgical trauma could be controlled by manual pressure. The surgeon who wished to study this question of control of hemorrhage in the liver could

sat during the afternoon on the benches at Doctor Brewer's clinic he was carried back fifty-five years, to the time when he had occupied these benches regularly and that he was brought to a full realization of the immense advantages of the younger generation of surgeons and of the great value of the clinical instruction so richly provided for them.

Dr. John A. Wither-
spoon, of Nashville,
Tenn., president elect of
the American Medical Association, said that the
progress of surgery during
the last decade had

do so experimentally by taking a human liver and attaching the portal vein to a douche, when the water would permeate through the vessels of the liver and the experimenter would soon find the proper method for control of any hemorrhage. This test would be found even more difficult than in the living subject, since the water would not coagulate like the blood.

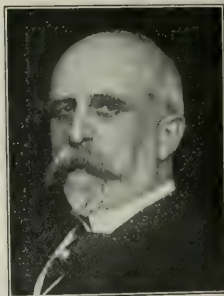
After operation the hemorrhage could be controlled by curtain stitching taking up all the vessels. The difficulty with any stitching of the liver was the ease with which the stitches tore through the parenchyma and the tendency of the blood to follow the needle. This latter tendency Doctor Martin had obviated by using a particular form of needle, about the size of a knitting needle, about four inches long and blunt at the apex, so that the operator could feel around with the point. The essential feature of the needle was a device which permitted the ligature to be screwed into the butt of the needle, so that the following thread would entirely fill the lumen and thus prevent the blood from following the needle. The needle was pliable and might be bent to any desired form by the operator; the thread used might be either doubled, tripled, or quadrupled. The tendency of the ligatures to tear out could be obviated by passing the sutures through the rectus. After the operation care should be exercised not to drag on the liver, which should be supported by mattress stitches through and through the liver. Muscle flaps and a transplanted flap of the omentum were also used as supports for the stitches.



DR. ALBERT J. OCHSNER.
Chicago, retiring president.

difference in the operations, though there would be more superficial trauma in decapsulation of the liver than in decapsulation of the kidney. He referred to the importance of proper drainage of the gall passages on account of the fact that the bile itself was toxic. He said that contrary to the usually accepted view he did not believe ascites was always due to back pressure. Where there was a real back pressure this implied a fault of functioning of the liver. He then discussed the lateral anastomosis of the cava with the superior mesenteric, an operation which he had performed on the cadaver and which was shown very clearly in the lantern slide.

Dr. Alonzo E. Taylor, professor of biochemistry, in the University of Pennsylvania, discussed



DR. VIRGIL P. GIDNEY,
Committee on Arrangements.



DR. ELLSWORTH ELIOT, Jr.,
Committee on Arrangements.



DR. LEROY BROUN,
Committee on Arrangements.



DR. JOHN O. POLAK,
Committee on Arrangements.

the chemical functions of the liver. He said that the functions of the liver might be divided into three groups: 1. The digestive; 2, the glandular secretory; and, 3, the metabolic. He discussed in detail the effects of obliteration of the portal circulation of the liver on the various functions of that organ, coming to the conclusion, from experiments tried on dogs, that most of the functions of the liver were replaceable and would be performed in case of obliteration of the portal circulation by other organs. He took the ground that detoxication of the proteid products, for instance, really took place in the walls of the small intestines rather than in the liver itself, while it was generally accepted that the wall of the intestines was the site of the regeneration, or synthesis, of the proteids. As the result of a survey of the digestive functions of the liver, Doctor Taylor said there was no reason to believe that the closing of the portal circulation would affect that function. It was impossible to draw any deductions from the study of the bacterial processes in the dog which would be of value in studying those processes in human beings, since the bacterial flora of the dog differed so materially from that of man. Doctor Taylor said that at present we had no knowledge of the rôle played by hormones in the liver.

Surgery of the Spleen.

Dr. William J. Mayo, of Rochester, Minn., said that we had a fairly accurate knowledge of all the organs except of the liver and the spleen. We were not yet sure of the exact functions of the spleen. It responded to chemical stimulation and also had an internal secretion. He referred to the function of the adrenals in the secretion of a stimulus which acted both chemically and by direct contact. He said that the liver destroyed bacterial poison, and that it had been suggested that the dark color of the liver was due to killed bacteria. The intimate relation between the liver and the spleen was shown by the fact that changes in the liver were frequently accompanied by changes in the spleen. The spleen was peculiar in that the blood came in direct contact with the parenchyma of the organ. The spleen strained out the broken down epithelium and the excess of white corpuscles. The speaker referred to the fact that the spleen seemed unable to dispose of the malarial organism, the presence of which was the cause of the ague cake. He said that owing to the relative inaccessibility from without a disease of the spleen was not often recognized. He said that the blood of primitive animals was white, as was the early blood of the fetus. Leuchemia was a reversion to an embryonic condition presenting an excess of leucocytes, just as sarcoma was a reversion to an embryonic condition in the excessive development of tissue cells. Splenic anemia was considered as progressive. Its etiology was discussed briefly. A study of this disease had

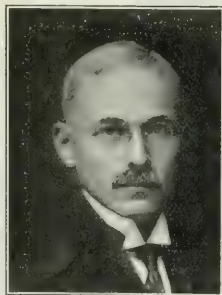
led to the conclusion that the removal of the spleen would be helpful. Since that conclusion had been reached, the spleen had been removed by him in eighteen different cases with good results. In twenty-five per cent. of the cases there was some pain in the long bones indicative of hypertrophy of the marrow. It seemed that the removal of the spleen sometimes effected a cure in cases of tuberculosis. Doctor Mayo referred to the movable spleen as productive of many untoward symptoms, and said that attempts at fixation of the movable spleen had not been satisfactory, being followed by pain. Sarcoma of the spleen was rare, though splenic tumor was not very infrequent. The removal of the spleen in cases of tumor had been successful where operations had been performed early. Doctor Mayo said it was unfortunate that the surgery of the spleen practically meant its destruction. He then described in detail the operation for the removal of the spleen, illustrating the description by lantern slides showing the long incision necessary. He said that the principal difficulty was the control of the hemorrhage of the pedicle. This was best accomplished by the use of the elastic clamp. The clamp not infrequently embraced the tail of the pancreas and the stomach, but these organs did not seem to be unfavorably affected by this treatment. The reported mortality in splenectomy had been given as ranging from 18.5 to 27.4 per cent. Doctor Mayo said that under proper conditions he did not think the mortality should run above ten per cent., or possibly even above five per cent. He then showed lantern slides of spleens which had been removed for various conditions, giving both the general view and the microscopic section, from which could be seen the infiltration due to the diseased condition. In one case the spleen weighed as much as 5,280 grammes and practically all the spleens shown presented externally a mottled appearance. An abstract of Doctor Mayo's remarks will appear in an early issue of the JOURNAL.

Dr. Charles H. Peck, of Roosevelt Hospital, New York city, discussed briefly the indications for the removal of the spleen, and referred in particular to the occurrence of fracture of the spleen. In these cases removal was generally indicated, though the mortality was high, running up as high as thirty per cent. He reported one case, the first so far that he was aware of, in which he had removed the spleen from a patient suffering from congenital hemolytic jaundice. Cholecystotomy had been done on the patient twice with negative results. The removal of the spleen, however, had produced immediate improvement, and the results had been eminently satisfactory.

Dr. Abraham Jacobi was called on as president of the American Medical Association, and spoke of the standardization of medicine through the efforts of the congress and of the



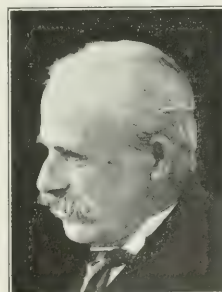
DR. PARKER SYMS,
Committee on Arrangements.



DR. HOWARD LILIENTHAL,
Committee on Arrangements.



DR. ROBERT T. MORRIS,
Committee on Arrangements.



DR. LEWIS S. PILCHER,
Committee on Arrangements.



DR. F. I. KEYES, JR.,
Committee on Arrangements.

gery who has reached into the realms of psychology and hitched that science to surgical progress."

Anesthesia and Anoci Association.

Doctor Crile opened his address with an explanation of surgical shock, saying that the nerves were fuses which, when ignited, ignited the brain, which was the magazine. The brain cells responded to every injury. The stored energy of the brain cell was consumed in surgical operations, and the only way to prevent this consumption of energy was by the employment of some method which would exclude all harmful or noxious associations or stimuli. He explained that the term, anoci association, meant the absence of harmful association such as fear or dread of the operation on the part of the patient. This exclusion of harmful association was accomplished by putting to sleep all those cells which responded to the effect of general anesthesia. Some of the brain cells, however, were not affected by the general anesthetic and it was the effect of the shock on these cells which produced a disastrous effect upon the patient. This effect Doctor Crile proposed to prevent by blocking off sensation from the areas in the field of operation by the use of local anesthesia.

The speaker explained that he first anesthetized the patient with ether or nitrous oxide and then introduced a local anesthetic along the nerves leading from the operative field to the brain. As local anesthetics he used novocain and quinine and urea hydrochloride. He showed a series of charts giving the results of anesthesia by this method in preventing the rise in the pulse and temperature hitherto considered as an inevitable result of the administration of an anesthetic. Observations of a large number of cases showed that the temperature and pulse rate of the patient generally rose the day before the patient came to the hospital. Both temperature and pulse rate also rose after operation, this rise constituting what was termed postoperative fever. This postoperative fever, Doctor Crile was convinced, was purely a neurological creation.

He said that one of the essential elements in anoci association was the attention to every detail connected with the comfort of the patient. This involved a larger hospital force, a larger number of nurses, and greater individual care of the patient. It might be objected that the mere comfort of the patient was a secondary matter, but statistics showed that the question of comfort was an important item in the power for the resistance of the disease. At the Lakeside hospital the deaths under anesthesia, in 1898, under the ordinary methods were over six per cent. in the first thousand cases. In the last thousand cases anesthetized under anoci association the deaths amounted to 1.5 per cent., though the death rate of all cases in the hospital

association. He said that a decade ago surgery meant cutting; now it meant conservation.

TUESDAY EVENING.

The Tuesday evening meeting, also held in the grand ballroom of the Waldorf-Astoria Hotel, was opened with an address on anesthesia and anoci association by Dr. George W. Crile, of Cleveland. In introducing Doctor Crile, Dr. Edward Martin, of Philadelphia, the president, said: "Here is a man, the first in sur-

was 2.5 per cent. The harmful effects of anesthesia were due to trauma of the brain cells from shock conveyed to those cells not affected by the general anesthetic. This trauma could be obviated by blocking the pathway of sensation from the field of operation to the brain. This was an essential element of the procedure. Nitrous oxide was to be preferred to ether for the reason that the former did not oxidize the brain cells with which they were brought into contact, as did the ether. He urged the adoption of this method as reducing both the morbidity and the mortality.

In discussing the paper Dr. George D. Stewart, of New York, paid a tribute to the classic contributions of Doctor Crile to the subject of surgical shock, saying that his first knowledge of Doctor Crile came from reading his prize essay on surgical shock, which had presented the first satisfactory definition of this condition. He said that every surgeon practised anoci association. The patient came to the surgeon because he believed that this particular surgeon could protect him from harm. This was anoci association. In one of the great clinics of the West anoci association was carried out to a marked extent by having the anesthetic administered by a handsome young woman. He felt sure that any one would be less apt to offer resistance to an anesthetic administered by a beautiful, attractive young woman than by some big brute of a man. He had known one of the older surgeons who was eminently successful who practised anoci association by filling his patients up with alcohol so that they came to the table in a thoroughly happy frame of mind, and this old method of anoci association had proved very successful.

In view of the brilliant results reported by Doctor Crile, it would seem incumbent on every surgeon either to follow his lead or to apologize for not doing so. In his own case he had attempted to follow Doctor Crile's suggestion, but had found the element of time so important a factor that he had abandoned the Crile method. As already said, the element of time was a very important factor in shock and the time required for the infiltration anesthesia so materially lengthened the time taken up by the operation

that so far as his own experience had gone, the possible advantages had been more than counterbalanced by the bearing of this additional time on the amount of shock. He had not been pleased with the substitution of nitrous oxide or, as had been suggested, of nitrous oxide and oxygen, for he did not wish to have his patients coming and going from under the influence of the anesthetic as was the case where the mixture of oxygen and nitrous oxide was used. With nitrous oxide alone he had failed to obtain that complete relaxa-



DR. A. T. BRISTOW,
Committee on Arrangements.



DR. FREDERIC E. SONDERN,
Committee on Arrangements.

tion which was so essential in abdominal surgery. A New York surgeon had recently practised anoci association by adding oil of orange to the ether used for anesthesia. To carry out this idea we must shut out disagreeable sights, disagreeable odors, and logically we would have to put ear tabs on the patients so that disagreeable sounds would also be shut out. The reports of Doctor Crile sounded like the results of magic, but it was the magic of a magician who also was a most wonderful technician.



DR. FRANK HARTLEY,
Committee on Arrangements.

Excision of the Posterior Spinal Roots.

Dr. Otfried Foerster, of the University of Breslau, Germany, read in English a paper on The Indications and Results of Excision of the Posterior Spinal Roots. He said that science was a community of nations; each contributed its quota; Germany knew exactly what was being done by the scientific world of America and watched with particular interest the wonderful advances in surgical technique which had been made recently in the United States. He had come full of admiration for the American surgeons and he felt that the Americans and the German surgeons would go forward hand to hand always in the front.

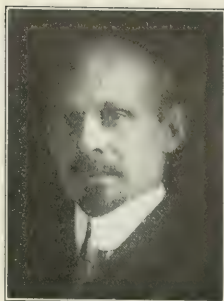
Doctor Foerster reviewed briefly the history of the operation for the excision of the posterior spinal roots which had first been recommended by Doctor Dana in the United States in 1888. He practised root resection for the relief of pain in forty-four cases in which six deaths occurred. In twenty-two of these the cervical roots were cut, in eleven thoracic roots, and in eleven lumbrosacral. Fifteen of these cases were of plexus neuralgia, five traumatic neuritis, two arteriosclerosis, two herpetic neuritis, one arthritis, one athetosis, seven cancer of sacrum, one of phlebitis, one tuberculosis, and one tabes. In these cases twelve were successful, twenty-three were failures, and three patients showed some improvement.

The resection of the root for gastric crises had been made in sixty-four cases in which six deaths occurred. Of the fifty-eight survivors fifty-six were successful and two failures. In twenty-nine cases there was no relapse, in eighteen there was considerable improvement, and in nine there was small improvement only. The failure in the majority of all cases was due to oversight to cut a sufficient number of roots or the right roots. In fact, this question of the selection of the proper roots was really the crux of the whole situation. Doctor Foerster showed lantern slides in which the areas of sensation affected by the resection of certain roots was outlined. He cited a number of individual cases showing the results obtained by the resection of certain roots.

Resection had been done for spasticity in one hundred and fifty-nine cases in which there were fourteen deaths. Eighty-eight of these had congested spastic paraplegia, six deaths occurring. In three hydrocephalus cases there were two deaths. In twenty-three spastic arm paralysis two deaths occurred, in eleven cases of disseminated sclerosis there were four deaths, six of syphilitic spinal spastic paraplegias, one tumor of spine, four traumatic spinal spastic paraplegias and three infantile spastic paraplegias were treated without fatalities.

One of the most important points was the identification of the roots.

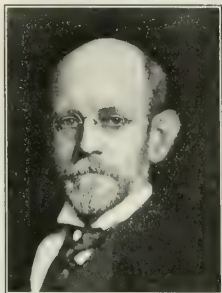
A series of very effective slides were shown giving the results of operations in cases of spastic paralysis in boys ranging from seven to eleven years of age. In one of these in particular the patient's limbs were knotted and curved in a most remarkable manner and he was unable to make any voluntary motion. After resection of the proper roots, followed by a long course of gymnastic exercises, the patient was able to walk and use his hands. In conclusion, Doctor Foerster emphasized the



DR. L. G. COLE,
Committee on Arrangements.

importance of after treatment in cases of spastic paralysis so as to restore the function of the limb, for without this after treatment the limb would remain useless.

Dr. Charles H. Frazier, of the University of Pennsylvania, presented a paper on surgery of the spinal column. He said that the accessibility of the cord was a great advantage and made operations on the spinal column much less dangerous than operations on the brain. He referred to a paper presented by Doctor Allen at the second



DR. EDWIN B. CRAGIN,
Committee on Arrangements.

congress of surgeons, advocating immediate operation at the point of injury in cases of complete transverse fissure of the cord. Operation on the cord held out great hopes in the removal of tumors. He said that the seeming variability in the results showed the need for a more complete study of the relations of the nerve roots to sensation areas. He described a case of vesical paralysis which had been very much helped by performing an end to end anastomosis of the third ventral and the first lumbar roots. This was, he believed, the first application of this idea to man, though Hilmington had made an experiment of the last lumbar and the second and third sacral roots in dogs. The results of this experiment were hopeful, but there had been no histological study of the final results of the operation. He then made some reference to the technique of the operation of resection, noting particularly the influence of position. He advocated the use of self retaining tractors, believed in a one stage operation, made a watertight closure with three tiers of sutures, and did not use drainage except in special cases. He cautioned his hearers regarding the damage which resulted from any unnecessary handling of the cord. He advocated the blocking off of sensation by the injection of four per cent. novocaine solution just above the site of the operation.

Dr. D'Orsay Hecht, of Chicago, discussed the surgery of the spinal cord from the standpoint of the neurologist and suggested the introduction of serocytological observations as an aid to diagnosis of disease of the cord. He made a plea for early operation on tumors of the cord, which were, he thought, much more frequent than was generally supposed.

Dr. Alfred S. Taylor, of New York, discussed the paper by Doctor Foerster, dwelling particularly on the technique of the operation. He advocated hemilaminectomy as giving complete exposure to the dorsal surface of the cord and still affording excellent results after the operation. He opened two or three vertebrae in this way and then probed for the tumor in case it was not exposed. When the tumor was located further portions of the vertebrae could be removed without unfavorably affecting the spinal column.



DR. CHARLES N. DOWD,
Committee on Arrangements.

This was done after the exposure of the cord by the application of an electric current, which produced the following reaction: Second sacral root, plantar flexion of toes, plantar extension of foot; first sacral root, plantar extension of foot; flexion of knee; fifth lumbar root, flexion of knee, extension of hip, fourth lumbar root, dorsal flexion of foot, extension of knee, flexion of knee; third lumbar root, knee extension, adduction of hip, second lumbar root, knee extension, adduction of hip.



DR. WILLY MEYER,
Committee on Arrangements.



DR. J. BENTLEY SOUIER,
Committee on Arrangements.

He cited one case in which resection of the roots failed to give relief to the extreme pain resulting from the trauma to the brachial plexus, and suggested that the failure was probably due to the development of active, progressive neuritis, which had penetrated into the cord itself. He cited his own experience in several cases with varying results.

Dr. Charles A. Elsberg drew particular attention to the technique of laminectomy, disagreeing with Doctor Taylor as to the advantages of hemilaminectomy. Doctor Frazier had said that two stage

operations were not necessary, his own experience pointed the other way, for when the operation was performed in two stages it was found that the tumor was protruded by natural forces in such a way as to enable the surgeon to remove it practically without touching the cord itself. Doctor Elsberg advocated a long laminectomy, exposing at least three or four spinal processes. He spoke of the important rôle played by the ligamentum denticulatum in the relations of this ligament.

Doctor Bauer, of Breslau, presented the results obtained by Doctor Kuttner, professor of surgery at Breslau, and described the technique followed by him. Kuttner advocated the two stage operation and his results had been very satisfactory except in operations on patients subject to epileptic seizures. For this reason he had found it necessary to exclude such cases from this operation.

WEDNESDAY EVENING.

The third evening meeting of the congress was held as usual in the grand ballroom of the Waldorf-Astoria. Doctor Martin opened the meeting at 8.10 Wednesday evening by introducing Dr. Charles F. Stokes, surgeon general of the United States Navy. The president of the congress said that he had promised

Doctor Stokes not to call on him for an address, but the members themselves did the calling and the surgeon general made a few brief but very happy remarks, saying, among other things, that the bill to organize a naval reserve had at last been passed by Congress and that he expected to call on the members of this congress to enter the reserve and be prepared for the emergency that would at some time in the future require the treatment of ten or fifteen thousand wounded men within twenty minutes.

The Enteroptotic Woman.

President Martin then introduced Dr. Robert R. Smith, of Grand Rapids, Mich., who spoke on the enteroptotic woman. He showed a number of lantern slides in which the enteroptotic woman was contrasted with the normal. He said that these patients could be divided into two groups, the first, which were generally designated as the acquired form of enteroptosis, consisted of women who were well nourished, with deep chests, strong abdominal walls, and full waist lines. Under the

influence of visceral enteroptosis these characteristics were gradually modified, the patients showing a tendency toward round shoulders, the lower pole of the stomach prolapsing and the general carriage of the patient becoming less erect and buoyant. There was every gradation from this type to the characteristic type of the second group, which was generally termed congenital, though as a matter of fact enteroptosis was not congenital, but the conditions were congenital, which in later life resulted in enteroptosis. Photographs were shown

of a number of children from seven to eleven years of age belonging to the congenitally enteroptotic type. In these children there was always an absence of fat, disproportionately long limbs, and they were usually much taller than children of the same age of a normal type. They showed rounded, drooping shoulders, compressed ribs, and thin, flat chests. The type was quite distinct and when once identified could, he said, be readily recognized at a glance. This type was particularly characterized by flaccid musculature. X ray pictures of children of this type, in which the location of the stomach and intestines was indicated by bismuth, rarely showed any material displacement of the viscera, the prolapse generally beginning to occur about the age of puberty. The history of these cases nearly always showed marked hereditary influence. The symptomatology of enteroptosis he divided into four groups: 1. Psychic; 2. pain; 3. organic disturbances; and, 4. functional insufficiency. This functional insufficiency, particularly disturbance of the digestive function, was one of the most frequently observed symptoms. He said that the mechanical obstruction to the functional performances of the intestines undoubtedly played a very important part in producing the stasis which was the result of the prolapse of the viscera, but he cautioned his hearers not to lose sight

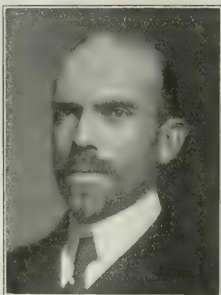
of the patient herself in his study of the prolapsed organs, as the general treatment was a very important factor.

Chronic Intestinal Stasis.

Mr. W. Arbuthnot Lane, lecturer on surgery in Guy's Hospital College, London, said that when he first began to draw attention to the important rôle played in the causation of disease by delay in the passage of the contents of the intestines, he had been ridiculed, but those who had scoffed at operations for constipation were now coming to realize that chronic stasis was much more than mere constipation. He defined chronic stasis as a "delay in the transmission of the intestinal contents independent of whether it is accompanied by constipation or not." He said that he considered the intestinal tract simply as a living sewerage system. "Some portions of this tract were inhabited by bacteria, which were benignant when in their proper habitat and became harmful only when through some fault in the sewerage sys-



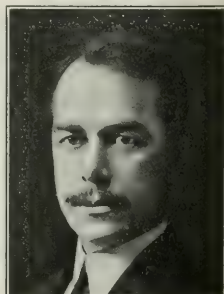
DR. W. H. BISHOP,
Committee on Arrangements.



DR. GEORGE WOOLSEY,
Committee on Arrangements.



DR. JOHN ROGERS,
Committee on Arrangements.



DR. HOWARD C. TAYLOR,
Committee on Arrangements.



DR. ALFRED S. TAYLOR.
Committee on Arrangements.

tem they passed out of their normal habitat, infecting other organs, which they sometimes even reached by entering the blood stream from which they might affect organs not in direct contact with their original habitat. He cited a number of cases having widely varying symptoms, which on close study were found to be referable to chronic stasis and which were relieved by ileocolostomy. Stasis not only produced coloration of the skin, but was a frequent cause of serious nervous affections. He cited one case of tic dou-

oureux, in which the patient had been sent to him from South Africa for excision of the ganglion. He declined to perform this operation, but instead short circuited her intestines, with the result that all pain disappeared after eight days. Degeneration of the breasts, not infrequently terminating in cancer, was, he said, often due to intestinal stasis. He said that he did not believe that cancer could occur in the abdominal viscera except in the presence of stasis. He referred to cases of exophthalmic goitre which had been completely relieved by ileocolostomy. He then discussed the details of the technique of the operations performed for the relief of intestinal stasis and the causation of the formation of acquired mesentery. Mr. Lane exhibited a number of diagrams showing the use of the kink of the ileum and how this useful kink degenerated from a useful factor in peristalsis to a positively harmful interruption of the function of the ileum.

Dr. John G. Clark, professor of gynecology in the University of Pennsylvania, in discussing the address of Mr. Lane, said that many affections were formerly considered as medical which were now looked upon as surgical. Fecal stasis he still considered as on neutral ground. He said that mere measurement could not be accepted as a proper indication of the normality of the colon, as there was a very wide variation in this organ even in the embryo, and a colon which might be considered as widely abnormal might still carry on its functions satisfactorily. He had removed the colon in seven cases without any primary fatality, but he still considered the removal of the colon as a very grave operation, particularly where the colon was anchored. His attempts to anastomose between loops had proved a failure. Excision in the redundant type of sigmoid had given good results. He thought that the profession should not accept any new surgical procedure until after very careful consideration both of the procedure itself and of its after effects.

Replacing and Retaining Operations in the Treatment of Gastric and Intestinal Stasis.

Dr. Robert C. Coffey, of Portland, Ore., said that when

it was announced that he was to read a paper on this subject in Seattle the surgeons of Seattle had fled. He felt a certain grim pleasure in observing that some of these same surgeons who had run away from his paper in Seattle were now condemned to hear it by their presence in this audience. He said that quadrupeds did not suffer ptosis, even though they ate the same food as man. Ptosis was the price we paid for the privilege of walking erect. If a dog should be made to walk on his hind legs for a considerable space

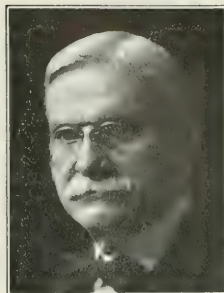
of time it would be found that he, too, would suffer from ptosis. Many of the symptoms of chronic recurrent appendicitis were, he said, really due to ptosis. He spoke of the important function which fat played in holding the visceral organs in place and said that the benefits derived from the Weir Mitchell rest cure and forced feeding were largely due to the replacement of this lost or absent fat. Doctor Coffey devoted the major portion of his remarks to explanations of lantern slides of a number of skiagraphs showing

the effect produced by suitable operations in a number of cases of visceral enteroptosis. A study of a large number of these skiagraphs had demonstrated, however, that the mere prolapse of the organs or even the amount of prolapse did not furnish a positive key to the seriousness of the case, as in many cases the organs continued to perform their functions in a normal manner, even though very badly displaced. In the large number of skiagraphs shown the displacement of the stomach and of the colon before operation was contrasted with the approximately normal condition assumed by these organs after operation. The technique of the operation performed by Doctor Coffey was described in full in the October number of *Surgery, Gynecology, and Obstetrics*. The operation consisted essentially of the freeing of the lower end of the ligament supporting the colon, raising and attaching this with the omentum to the side of the abdominal wall, thus forming a kind of hammock supported at both ends and dividing the load on the ligament between the two ends instead of having it supported entirely from one.

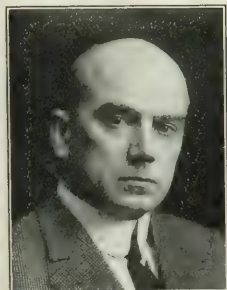
Orthopedic Principles in the Treatment of Enteroptosis and Chronic Intestinal Stasis.

Dr. Joel E. Goldthwaite said that abdominal visceroptosis resulted in the strain which showed itself in the imperfect poise of the patient. The effects of this imperfect poise brought the subject within the realm of orthopedics, for it produced joint strain and frequently even brought about flat foot. He said that Doctor Coffey's reference to ptosis as the penalty we paid for the privilege of walking upright was most happily put. He said that ptosis itself was really of no great consequence unless it happened to occur in such a manner to inhibit or retard the functions of some of the organs. As a matter of fact probably every one was subject to ptosis of some kind. He said that in the congenital type of enteroptotic women referred to by Doctor Smith the long cylindrical type of stomach was found. This was not a result of enteroptosis, as was sometimes assumed, but was merely a lack of development, for this was the embryonic form of

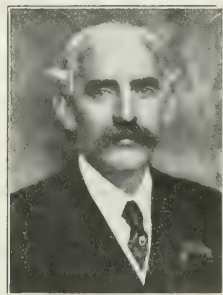
the stomach, which in its normal development became pear shaped. The congenital enteroptotic person was also generally deficient in the matter of the small intestines. We should have twenty feet of small intestines, but in this type patients were frequently observed who had not more than ten feet of intestines. He said that in the acquired type there might be but a slight degree of ptosis accompanied by very great pain and inconvenience. In acquired type the characteristic pose was gradually assumed and might fre-



DR. WILLIAM M. POLK,
Committee on Arrangements.



DR. JOHN F. ERDMANN.
Committee on Arrangements.



DR. JOSEPH A. BLAKE.
Committee on Arrangements.



DR. W. E. STUDDIFORD,
Committee on Arrangements.

patient could not receive the full benefit until space had been provided for the organs, and this was the function of the orthopedist. Mere exercise would not restore tone to the flaccid muscles which had grown "stale." The patient should be put to bed on a flat bed without any pillow or with only a very small one. After meals overextension of the abdominal walls should be brought about by placing a pillow beneath the back of the patient just below the shoulders, not the small of the back, but high up so as to expand the thorax and draw the viscera upward. After lying this way for an hour the patient should assume the "prone hanging" position, with the head down over the edge of the bed for a short time. These exercises promote the digestion of the food and its passage out of the stomach. The patient should then assume the "frog" position, which would generally be followed by a stool. He explained that the reason why these patients suffered so much from intestinal indigestion at night was because of the relaxation of the muscles during sleep. The patient should then be put into a plaster cast modeled on the patient in the posture caused by placing a pillow under the shoulders so as to produce the expansion of the abdominal walls. When, after the rest cure, the patient was allowed to get up she should be provided with an apparatus to keep her in the proper attitude. If the patient began to lose weight after going about the rest cure should be again applied. Doctor Goldthwaite spoke on this subject with keen personal interest, as among the photographs shown of patients treated in the manner indicated above was one of his own boy, who had responded in a most remarkable manner to the treatment.

He said that while the cure of individual sufferers was a necessary part of the function of the physician the treatment of enteroptosis had a much wider and more important bearing, for through it the entire race would be benefited. The doctrine of the survival of the fittest had been abandoned and now we saved the unfit. It had been shown that one child in every five belonged to the class of congenital enteroptotics. Science taught that we could not eliminate the hereditary tendency toward the enteroptotic condition, but if every child having this tendency was so treated as to reduce it to the minimum we might hope to eventually wipe it out. Every breeder of animals was aware of the fact that certain undesirable strains could be bred out of his animals. In the same way by suitable care of the children having a tendency in this direction we might hope to breed out this tendency in the human race. He said that the dull, laggard child was generally not a bad child, but merely suffering from conditions which it was incumbent on the physician and

quently be seen in the fat policemen with relaxed muscles, rounded shoulders, flattened chests and protuberant abdomen. It was this type which had the most frequent victims of gallstones. One of the most important factors in the pain and discomfort in enteroptosis was the pressure of the organ on the solar plexus.

The first step to be taken for the correction of this difficulty was the remodeling of the body so as to provide a site for the proper replacement of the displaced organs. No matter what the surgeon might do the

surgeon to cure and that with this cure the whole life of the child would brighten, be better, and give greater promise. He said that if the physician and surgeon could take these children and help them they might develop the race in a way which would make the mission of the physician a great one.

THE ORGANIZATION OF THE CONGRESS.

The organization of the Third Clinical Congress of Surgeons of North America was admirably carried out, and reflected credit on the officers and the committee. The offices of registration filled the ballroom of the Waldorf-Astoria, where a score of clerks registered the visitors, charging a fee of five dollars and giving a button and a ticket which gave access to all the evening meetings and to any of the clinics except certain special clinics for which, on account of limitation of space, special tickets were required. These special tickets were issued every morning for the day. A full programme of the clinics was printed in the NEW YORK MEDICAL JOURNAL for November 9th. The material presented covered almost the entire range of surgery. In addition to the strictly surgical clinics demonstrations were given in the various laboratories in pathology, radiography, bacteriology, etc., so that the visitors had a wide range from which to choose. No formal entertainment was provided, but numerous private dinners were given to groups of the visitors by local surgeons. Among the foreign guests were Dr. Otfried Foerster, privat dozent of nervous diseases at the University of Breslau, Germany; Mr. W. Arbuthnot Lane, lecturer on the practice of medicine, Guy's Hospital Medical School, London, England, and Dr. William Weibel, first assistant to Dr. Ernst Wertheim, of the University of Vienna.

The local arrangements were in the hands of the following committee: Dr. George E. Brewer, chairman; Dr. Joseph A. Blake, Dr. George Woolsey, Dr. Robert T. Morris, Dr. Brooks H. Wells, Dr. John O. Polak, Dr. Frank Hartley, Dr. Ellsworth Eliot, Jr., Dr. Charles H. Peck, Dr. Howard C. Taylor, Dr. William M. Polk, Dr. L. W. Hotchkiss, Dr. Virgil P. Gibney, Dr. Willy Meyer, Dr. Howard Lilienthal, Dr. James W. Markoe, Dr. Edwin B. Cragin, Dr. John Rogers, Dr. George D. Stewart, Dr. LeRoy Broun, Dr. Louis J. Ladinski, Dr. John E. Weeks, Dr. James F. McKernon, Dr. W. H. Bishop, Dr. Robert L. Dickinson, Dr. Franklin H. Martin, Dr. A. T. Bristow, Dr. Lewis S. Pilcher, Dr. Charles N. Dowd, Dr. John F. Erdmann, Dr. Frederic E. Sondern, Dr. Parker Syms, Dr. E. L. Keyes, Dr. J. Bentley Squier, Dr. W. E. Studdiford, Dr. Walton Martin, Dr. Alfred S. Taylor, Dr. L. C. Cole.

The following acted as a committee on hospital clinics: General surgery, Dr. Ellsworth Eliot, Jr.; gynecology and obstetrics, Dr. LeRoy Broun; orthopedic surgery, Dr. Virgil P. Gibney; genitourinary surgery, Dr. J. Bentley Squier; surgery of the eye, ear, nose, and throat, Dr. James F. McKernon; surgical research and laboratory demonstrations, Dr. John Rogers; Brooklyn clinics, Dr. Robert L. Dickinson.

On Monday evening Dr. Alexis Carrel, of the Rockefeller Institute, delivered a special lecture on the studies which won for him the Nobel prize.
(To be concluded.)



DR. BROOKS H. WELLS,
Committee on Arrangements.



DR. LOUIS J. LADINSKI,
Committee on Arrangements.



DR. GEORGE D. STEWART,
Committee on Arrangements.

Pith of Progressive Literature.

BERLINER KLINISCHE WOCHENSCHRIFT.

September 2, 1912.

1. GOLDMANN: Vital Staining and Chemotherapy.
2. MACCURDY and EVANS: Experimental Lesions of Central Nervous System Examined by A Aid of Vital Stain.
3. FRANK: Relation of Primary Thorax Anomalies and Certain Lung Diseases.
4. GÉRONE: Treatment of Pneumonia with Neufeld-Handle's Pneumococcus Serum.
5. HIRSHFELD and LOEWY: Corset and Apical Breathing.
6. LANGGAARD: Poisonous Action of Methyl and Ethyl Alcohol.
7. BURGER: Hemorrhages in Pons and Medulla, Particularly in Vagus Region, in Methyl Alcohol Poisoning.
8. FRANK and HEIMANN: Biological Diagnosis of Pregnancy after Abortion: Clinical Significance.
9. TÖPFER: Treatment of Inflamed Annexa with Special Reference to New Operative Method.
10. NEUMANN: Food Value and Use of Soja Bean for Man.
11. VOORHOEVE: Theoretical Foundations for Calcium Treatment of Hemorrhage.
12. KALKER: Diathermic Treatment in Heart, Lung, and Kidney Affections.
13. ZALOZIECKI: Cerebrospinal Fluid and Salvarsan.

September 9, 1912.

14. MARTIN: So Called Precipitation Phenomenon.
15. L. LANDAU: Gynecological Findings and Specialized Treatment.
16. DÜHRSEN: Surgical Treatment of Uterine Hemorrhage in Pregnancy, Ectopy, and Puerperium.
17. MACKENRODT: Indications in Uterine Hemorrhage.
18. SIGWART: Therapy of Perforating Injuries of Uterus.
19. BRÖSE: Poisonous Quality of Extravasated Blood in Free Abdominal Cavity.
20. T. LANDAU: Amenorrhea in Gynecology.
21. BLUMREICH: Röntgen and Operative Treatment of Myoma.
22. HIRSCHBERG: Menstruation Fistulas.
23. SIFFEL: Röntgen Treatment in Gynecology.
24. STRASSMANN: Operative Union in So Called Double Genital Tract and Closure of One Half.
25. NAGEL: Vaginal Extirpation of Uterus.
26. LIEPMANN: Urogenital Trigonum; Clinical Operative Significance.
27. JOLLE: Technique of Operation on Obese Abdomen.
28. MOLINARI: Influence of Moribund Fetus on Nephritis of Pregnancy.
29. FREUND: Severe Toxic Pregnancies.
30. HADLER: Pulmonary Tuberculosis and Pregnancy.
31. BOKELMANN: Treatment of Female Sterility.
32. GOTTSCHALK: Puerperal Eclampsia without Convulsions.
33. VOIGTS: Stroganoff's Treatment of Eclampsia.
34. GUTZMANN: Indication for Extraperitoneal and Intraperitoneal Cesarean Section.
35. RUNGE: Pregnancy, Labor, and Puerperium Complicated by Genital Tumors.

September 16, 1912.

6. FALTA and NOWACZYNSKI: Uric Acid Excretion in Uric Diseases of Hypophysis.
7. SCHROEDER: Determining Sugar in Blood.
8. GUDZENT: Biological and Therapeutical Experiments with Thorium and Cell Products.
9. METZNER and CAMMERER: Measuring Thorium X Preparations.
10. DEIGALSKI: Epidemiology and Control of Diptheria.
11. MOSSE: Familiar Hemolytic Icterus.
12. BLÜHDORN: Meningitis serosa and Related Conditions in Children.
13. KAROWSKI: Present Diet in Kidney Disease.
14. RITTER: Statistics of Tuberculosis.
15. REINER: Structure of Calcineus in Normal and Pathological Conditions.
16. RICHTER: Treating Articular Rheumatism and Rheumatic Diseases with Ervasin.
17. SEGERS: Hexal Poisoning.
18. PROELL: Dental Literature of 1910 and 1911.

September 23, 1912.

1. JOLLE: Changes and Decomposition of Carbohydrates.
2. WALDSCHMIDT: Tuberculosis of Kidney.
3. PINNER: Perforation of Postoperative Peptic Jejunal Ulcer into Transverse Colon.
4. NOGUCHI: Extirpation of Normal Spleen in Man.
5. BRANDENSTEIN: Basedow's Symptoms in Pulmonary Tuberculosis.
6. ZWIG: Serodiagnosis in Tuberculosis.
7. ALBU: Benign and Malignant Polyps of Sigmoid Flexure and Rectal Ampulla.
8. ROTHMANN: "Dietetic" Treatment of Suppurative Diseases of Uterus: Tract in Infants.
9. NAGELSCHMIDT: New Measurable Interrupted Current.
10. JOSEPH: Improved Bladder Syringe for Cystoscopy.

September 30, 1912.

1. STILLER: Pathogenesis of Orthostatic Albuminuria.
2. HAGEMBERG: Hypertension and Sugar in Blood.
3. CARO: Blood Findings in Adiposity.
4. KÖNIG: Luminal.
5. ARONSOHN: Hysteria, Cultural Product.
6. WOLTER: Atropine Poisoning.
7. BAUER and MÜRSCHHAUSER: Chemotherapy of Tuberculosis.
8. FROMME and RURNER: Significance of Phenolsulphonphthalein Test in Estimating Function of Kidney.
9. SITZLER: Protargol in Surgical Cases.
10. MOSENTHAL: Large Free Body in Ankle Joint.

69. KORLANCK and ROEDER: Animal Experiments on Influence on Sexual System of Nasal Manipulations.
70. HIRSCH: Abortive Attempts in Extrauterine Gestation.
71. HADDA: Case of Telangiectic Granuloma of Hand.
72. ZIEMANN: Gonococcus Vaccine as Possible Diagnostic Aid.
73. HEIMEMAN: Phlegmon of Nasal Septum after Facial Erysipelas.
74. BECKER: Prognosis of Melancholia.
75. BURNS and CORN: Epidemic Occurrence of Seborrheic Eczema.

9. Treatment of Inflamed Annexa by a New Operative Method.—Töpfer believes that the inflammatory diseases of the annexa should be treated conservatively except when large and easily accessible collections of pus can be relieved by a slight operative procedure. Indications for operations present themselves only when the conservative method has been tried repeatedly for a long time without relief, and when the complaints and the social condition of the patient must be taken into consideration. Two operative measures are to be taken into account: 1. Vaginal salpingectomy in mild cases where the uterus is movable and not many adhesions are present. 2. In severe cases only a ventral or combined operation can be applied which will leave the uterus or at least part of the ovaries intact. Solm's method of the extraperitoneal storing of the stumps, the complete uncovering of the small pelvis, and the possibility of vaginal drainage will prevent stump exudates and the formations of adhesions, and bring about healing and cure of the patients. Radical operation at present is the exception and is permissible only in patients of advanced age.

11. Calcium Treatment of Hemorrhage.—Voorhoeve says: 1. The calcium content of the blood in man may be increased by the ingestion of large doses of calcium. The calcium content and its method of combination in the diet must be measured most accurately. 2. The decreased calcium content of the blood is not always the cause of a chronic tendency to hemorrhage. 3. Nothing is known of the calcium incorporation of the components of the blood coagulating factors with the exception of the calcium content. 4. Therefore the increase of calcium in the blood does not necessarily cause an increased coagulation time of the blood.

13. Cerebrospinal Fluid and Salvarsan.—Zaloziecki disproves Ravant's deduction and discusses the changes in the spinal fluid which may result from salvarsan. Any explanation of the direct connection between it and the neurorecidives is declined.

26. Operative Significance of Urogenital Trigonum.—Liepmann illustrates his article with drawings, to show how complicated is the musculature of the pelvic floor, and why an analytical method of suturing which takes into account each muscle group is not justifiable. A comprehensive suture of the centrum musculare and an exact suture of the levator includes the whole of the pelvic floor according to the author's investigations. The dualism of a diaphragma pelvis and trigonum is artificial. The whole pelvic floor is a physiological and surgical entity.

34. Intraperitoneal Cesarean Section.—Gutzmann found that extraperitoneal section is indicated in all cases of narrowed pelvis where the passage per vias naturales cannot be expected and also in cases of infection in which drainage must be instituted. The significance of an intact peritoneum

in all infected cases is proved by his cases. Classical Caesarean section is indicated in those cases where a sterilizing operation is contemplated, in placenta prævia centralis, and in labor disturbances after direct anteifixation of the uterus on the abdominal wall or on the vagina.

43. Diet in Kidney Disease.—Kakowski says he has nothing very new or radical to add to the treatment of acute nephritis. After it was proved that the kidney is not a filter but a gland, the idea of organotherapy for the treatment of nephritis found favor. Notwithstanding the numerous reports of success, however, especially with the injection of serum in acute cases, the method has not come into vogue. The author reviews the status of the drug therapy at the present day; also hydrotherapy, mechanotherapy, and climatotherapy. In respect to diet, he says: 1. During the first two days of an acute attack, weak alcohol, water, then boiled milk in increasing doses (one, 1.5, but not exceeding two litres per diem) in small frequent doses can be given. From the tenth day on, cream and butter may be added to the milk. From the fifteenth to the twentieth day, according to the progress of the disease, sugar, rice, farina, white bread, and weak tea are permissible, in other words, a diet consisting of carbohydrates. 2. In subacute nephritis, harmless vegetables and fruit, especially pumpkins, may be added to the milk, carbohydrates, and fat, also two or three soft boiled eggs. 3. In chronic parenchymatous nephritis we must take into account the general nutrition of the individual and a mixed diet must be prescribed individually. He recommends carbohydrates and fats which do not exceed seventy grammes of proteid, also grains of all kinds, harmless vegetables and fruits, butter, fresh bacon, eggs, tea, juice of fruits, milk, and almonds. In cases where meat must be given, the effect should be most carefully judged by a method which the author describes in detail. The patient begins with a boiled spring chicken which has been killed in the presence of eye witnesses. After the physician has convinced himself of the harmlessness of this diet, fresh fish, veal, pork, mutton, and beef may be tried. All foods that are not absolutely fresh are dangerous and therefore strictly prohibited, for example, preserves, bolognas, cheese, imported fish, etc., also such agents as alcohol. 4. In contracted kidney with its long duration, the general state of nutrition of the patient and the heart action are more to be considered in prescribing diet than the kidney lesion itself. The amount of water should not exceed 1,500 c. c. a day, given in equally divided doses. 5. In nephritis with azotemia the ingestion of proteids is absolutely contra-indicated. 6. In nephritis with retention of chlorides the latter must be reduced to 5.0, to 2.5, or less. 7. The general point in any case is to individualize the diet for each patient, keeping him in nutritional equilibrium (2,500 calories) and giving as little as possible of those products which are harmful. These requirements are made possible by a lacto-vegetable diet. The objection that this diet cannot keep the patient in weight does not hold good, since the greater part of the population of the world nourishes itself on this very same diet.

ZENTRALBLATT FÜR CHIRURGIE.

October 10, 1912.

R. LEROUX and J. MURARD: Ateriomy of External Iliac Artery because of Obstruction to Circulation at Lower Extremity. Induced by Arteritis.

BULLETIN DE L'ACADÉMIE DE MÉDECINE.

October 1, 1912.

C. FIESSINGER: Curable Forms of Angina pectoris.

Curable Forms of Angina pectoris.—Fiessinger contends that the danger to life of angina pectoris has been somewhat exaggerated. He divides cases of angina pectoris into six groups, according to the cause, viz., coronary involvement, aortitis, myocarditis, interstitial nephritis, obesity, and aerophagia; this order of enumeration is that of decreasing gravity. The treatment is divided by Fiessinger into general and special, the first applying to all types and consisting of nitrites, prolonged rest in bed, and the administration of seven small meals daily, one feeding every two hours, in order to avoid gastric distention and the resulting increase of anginal pain. The first meal, at 8 a. m., may consist, for example, of one vegetable, of four or five tablespoonfuls of some dish made with flour, or of fruit with sugar, together with a wineglassful of hot water. A cup of cocoa with milk may be ordered twice daily. At noon fifty grammes of some tender meat may be given if the excretory and myocardial functions permit. As for special, causal treatment, angina from coronary narrowing is, as a rule, due to syphilis and demands antiluetic measures. Angina, the result of aortic disease, may also be syphilitic, but in any case potassium iodide in doses averaging one gramme,—though sometimes limited to 0.3 or 0.2 gramme where there is concomitant renal disease,—is of service when given for twenty days in each month; rest in bed for six weeks to two months is also of importance. In angina accompanying myocarditis, digitalis in very small doses and theobromine may sometimes do good, although rest in bed is here again the best measure for relieving the pain. Angina in interstitial nephritis sometimes disappears spontaneously after dilatation of the left auricle due to sudden exertion; in other cases, a milk and vegetable diet, small meals, frequent use of laxatives, theobromine, and small amounts of digitalis will nearly constantly lead to improvement. In the obese, angina promptly disappears when the weight is reduced; theobromine in doses of 0.5 gramme twice daily should, in addition, be given for a month. Aerophagia is a frequent cause of anginal pains in young patients. Small, frequent meals, sodium bicarbonate, and absorbent powders constitute the chief therapeutic measures indicated. It should not be forgotten, however, that gastric disturbances may appear secondarily in cases of true, organic angina.

PARIS MEDICAL.

October 10, 1912.

1. P. LEROUX and FAUGÈRE-DEAUVEU: Lead and Nerve Centres.
2. PAUL CÉMENT: Hemirrhic Oophorectomy.
3. REGAUD, NOGIER, and LACASSAGNE: Harmful Action of X Rays on Digestive Tube.
4. JACOULET: Bennett's Fracture.

4. Bennett's Fracture.—Jacoulet recalls that this fracture of the proximal end of the first metacarpal bone is not rare; diagnosis is frequently

difficult, however, owing to the great swelling and edema, and a true trapezometacarpal luxation may complicate the fracture. The dislocation is reducible only with great difficulty. Fracture of the trapezium can be recognized only by the aid of the x ray. The prognosis of Bennett's fracture is serious owing to the possibility of arthritis and of deformity from the callus; the hand may be rendered useless, a grave matter in artisans. Treatment consists solely in maintaining position after reduction. Continuous traction on the thumb may be required for thirty or forty days; dorsal compression has been used by Grashey. The writer prefers a plaster apparatus around thumb and wrist, with continuous traction on the former maintained by means of two strips of diachylon plaster applied on the palmar and dorsal surfaces. Cutting down in order to suture the fragments should be reserved for very serious complications preventing use of the hand.

PRESSE MÉDICALE.

October 9, 1912.

E. ENRIQUEZ and GASTON-DURAND: Hypertonic Stomach.

The Hypertonic Stomach.—Enriquez and Gaston-Durand, as a result of clinical and radiographical work, differentiate a type of gastric disorder characterized by increased tonicity of the organ, without necessary involvement of the pylorus or presence of ulcer. The condition represents, from the standpoint of gastric motility, the same increase of nerve action as is expressed in hyperchlorhydria from the standpoint of the secretory function. Its symptoms rather closely parallel those of Soupault's hypersthenic dyspepsia, and consist of persistent, cramplike pains, with exacerbations an hour or two after meals, frequently accompanied by nausea or, oftener still, by vomiting of small amounts of food, either immediately after meals or at the period of increased pain. The capacity and expansibility of the stomach are diminished, but the swallowing of air in small amounts—*aerophagia* or false eructations—is a very characteristic symptom. The hypertonicity is generally, though not necessarily, combined with excessive gastric peristalsis and also frequently with hyperacidity. In some cases the hypertonicity does not appreciably modify the symptomatology of coexisting disturbances, but it may lead to phenomena out of all proportion with the apparent morbid factor, e. g., intense seizures of pseudoangina. It occurs as frequently in the male sex as does hypotonicity or atonicity in the female. The treatment consists of administering sedatives for the nervous system, appropriate dieting, and sedative hydrotherapy. Of drugs, monobromated camphor, belladonna, and hyoscyamus, given simultaneously, have obtained the best results. In cases of obstinate hyperchlorhydria that are uninfluenced by alkalis, prompt benefit will often result from atropine or belladonna, owing to removal of the concomitant, unsuspected hypertonicity.

ANNALES DE DERMATOLOGIE ET DE SYPHILIGRAPHIE.

August-September, 1912.

1. BALZER, GOUGEROT BURNIER: Disseminated Vegetating Dermatomyosis Due to *Mycoderma pulmonum*.
2. HENRI PID: Polymorphism of Syphilis. Particularly of Latent and Larval Forms, in Connection with Personal Observations Recently Published and Case Yet Unrecorded of Syphilis hereditaria tarda.

1. **Vegetating Dermatomyosis.**—Balzer, Gougerot, and Burnier describe a new variety of dermal mycosis which appears as a vegetating dermatitis and is occasioned by the growth in the skin of *Mycoderma pulmonum*. The affection in the past has probably been classed as blastomycosis. The mycoderma is extremely common, especially on the surface of vegetable debris; it penetrates the hair follicles, occasioning first an acne pustule, and later ulceration or a verrucous dermatitis. All the lesions are caused by surface inoculations from scratching. The lesions are characteristic; usually on exposed parts of the body there appear acne pustules which extend, become ulcerated or crusted, and then vegetations appear; so that there is finally a mixture of ulceration and vegetating dermatitis, fungous and papillomatous ulcerative lesions, with minute abscesses in places, making fresh implantations of the organism. The affection lasts many months; and when cicatrization finally occurs relapses in the form of fresh marginal acneoid lesions are common. The iodic and arsenical medication has but little effect; surgical measures such as curetting and cauterization are required.

REVUE DE CHIRURGIE.

September, 1912.

1. AUGUSTE BROCA and BERNARD DESPLAS: Late and Evanescent Paralysis of Abductors in Fractures of Skull.
2. E. QUÉNU: Study of Posterior Marginal Fractures of Tibia.
3. G. WORMS and A. HAMANT: Fractures of Neck of Femur in Childhood and Adolescence (*To be continued*).
4. J. DUCUING: Complete Joint Grafts in Man (*Concluded*).

1. **Late, Evanescent Abductors Paralysis in Fractures of Skull.**—Broca and Desplas report two cases of this kind, both in children. In the first the paralysis appeared on the third day after the accident and disappeared on the seventh day. In the second, the paralysis occurred after a similar interval and disappeared in two months; it was accompanied by paralysis of the facial, appearing on the sixth day, and of the soft palate on the same side, appearing on the fourth day; these paralyses also disappeared after some weeks. After reviewing similar cases already recorded the authors discuss the cause of late paralyses, and conclude that these are probably due to pressure of a hematoma around the nerve or in its sheath. The prognosis in late paralyses is good.

2. **Fractures of Posterior Margin of Inferior Articular Surface of Tibia.**—Quénu found only two cases of uncomplicated fracture of the posterior tibial margin on record, and reports a third. While x ray examination is the final and decisive step in the diagnosis, the presence of this lesion may be suspected where the following three signs are combined: Swelling and ecchymosis on the outer aspect of the lower portion of the leg; sharp pain upon pressure on the posterior tibial surface in the depression between the outer malleolus and tendo Achillis; hyperextension of the foot, with inability to return the foot to a right angle. The prognosis is good with massage, rest in bed, and elevation. More frequently such a fracture complicates a fracture of the fibula or Pott's fracture, or is associated with other fractures at the lower end of the tibia. In these cases, in addition to the signs already given, backward displacement of the foot is usually pres-

ent. In fact, Quénu maintains that posterior displacement never occurs without such a marginal fracture. Difficulty of fixation in the corrected position is characteristic, and the prognosis depends upon the degree of success attained in this direction. Quénu counsels immediate application of a plaster cast, with general anesthesia until the plaster has hardened. In the reduction force is applied as though for the removal of a boot, and any valgus deviation corrected. X ray examinations should be made repeatedly in the succeeding days in order to make sure of continued good position of the parts.

4. **Joint Grafting.**—Ducuing discusses transplantation either of entire joints, with or without synovial sac, capsule, and ligaments, or of single articular surfaces (half joints). He analyzes the cases operated in by Impallomeni, Lexer, Küttner, Judet, and others, and considers at length the indications, technique, medicolegal status, and results of these operations. Joint grafting is indicated in young subjects whose general physical condition is good, and who present ankylosis of the knee in a faulty position, or tumors involving this joint, recurrence of which is not expected, and provided the condition of the related muscles is good, or if not, susceptible of improvement. In the case of the hip, the indications are less positive, though good results have already been obtained by grafting of this joint. Heretofore the results have been best where the joints have been transplanted without synovial sac or capsules; these are spontaneously reconstituted later. Ducuing believes the future of joint grafting very promising. The chief difficulty is the securing of suitable material for transplantation.

ROUSSKY VRATCH.

August 11, 1912.

1. V. A. MURATOFF: Alcoholism and Psychoneuroses.
2. B. P. BOBKIN and HIDEISURUMARU ISHIKAWA: Periodical Activity of Digestive Canal.
3. A. Z. BYLIE: Pathogenesis of Gastric Hypertension.
4. W. W. WEINBERG: Lowering of Stability of Erythrocytes in Alcoholic Intoxication.
5. G. W. GOLUBTSOFF: Characteristics of Pyocyanase, as Prepared in Dresden Laboratory.
6. A. N. DOMERNIKOVA: Bromoderma vegetans.
7. A. TROITSKOIA: Casuistics of Erythema.

3. **Pathogenesis of Hyperchlorhydria.**—Bylin discusses the relation of hyperchlorhydria to chlorine retention in the organism. It is known that the hydrochloric acid of the gastric juice is derived chiefly from sodium chloride, the latter being supplied in large excess by the food. Usually a man takes in fifteen to twenty grammes of sodium chloride a day, while only from one to two grammes are required to maintain the chlorine equilibrium. The excess of chlorine is eliminated almost entirely by the kidneys, which excrete from fourteen to sixteen grammes in twenty-four hours. Where the kidneys fail to eliminate the excess of sodium chloride, the latter is frequently got rid of by copious vomiting of stomach contents rich in hydrochloric acid. At all events, excess of sodium chloride in the system leads to increased formation of hydrochloric acid in the stomach, and in cases in which the elimination of chlorine by the kidneys is deficient, hyperchlorhydria is the result. The author details several carefully studied cases which seem to prove this theory.

4. **Effect of Alcohol on the Blood.**—Weinberg employed Liebermann and Fillinger's method in determining the resistance of the erythrocytes to hemolysis, following the ingestion of alcohol. A guineapig weighing 720 grammes received twenty c. c. of spirits (vodka) and twenty c. c. of water. The animal became intoxicated. The blood showed complete hemolysis. Another guineapig received 7.5 c. c. of spirits and 7.5 c. c. of water. Intoxication followed. Blood showed almost complete hemolysis. A man weighing 60 kilos consumed before dinner 450 c. c. of champagne; twenty per cent. of his erythrocytes lost their resistance to the sodium chloride solution. Another man who was an habitual drinker showed no effect from a similar quantity of wine.

5. **Pyocyanase.**—Golubtsoff used a culture of pyocyanus on the throats of convalescents from diphtheria as well as healthy carriers, but discovered that the particular lot was without any bactericidal properties. He cautions physicians to test pyocyanase before it is employed clinically.

6. **A Case of Bromoderma.**—Domernikova reports the case of a girl fifteen years old in whom developed a severe bromoderma vegetans on the fourth day after the administration of small doses of bromides. A histological description of the lesion is given.

7. **A Mistaken Diagnosis of Leprosy.**—Troitskoia reports the case of a woman, fifty-six years of age, who attracted considerable public attention on account of being a supposed leper. Further investigation, however, showed that the areas of erythema and the generalized anesthesia were a neurosis due probably to locomotor ataxia from which she was found to be suffering.

BRITISH MEDICAL JOURNAL.

October 26, 1912.

1. J. GOODHART: Passing of Morbid Anatomy.
2. L. W. SAMBON and A. J. CHALMERS: Pellagra in British Isles.
3. G. G. ALDERSON: Mitral Stenosis; Peripheral Emboli Causing Partial Monoplegia.
4. F. H. JACOB: Presence of Sugar in Cerebrospinal Fluid.
5. W. NICOLL: Anemia of Ankylostomiasis.
6. W. NICOLL: Flies and Other Insects as Carriers of Infection.
7. R. ST. J. BROOKS: Opsonic Index in Plague Vaccination.
8. A. J. CLARK: Destruction of Alkaloids by Emulsions of Body Tissues.
9. E. M. COWELL: Experimental Purpura.
10. E. W. H. GROVES: Observations on Operative Treatment of Fractures.
11. D. ORR and R. G. ROWS: Acute and Subacute Lesions of Spinal Cord Induced by Infection of Lymph System.

2. **Pellagra.**—Sambon and Chalmers report the finding of a number of cases of typical pellagra in several portions of the British Isles, though there have been but two cases reported by others. There, as in Italy and Spain, they find that the disease is present only in the regions of rapidly flowing mountain streams which are infected with the larvae of *simuliidæ*, insects which have been shown to be the means of transmission of the disease.

3. **Peripheral Emboli.**—Alderson's patient suddenly became sick and giddy, and her left arm fell helpless to her side. Three days later, with the same symptoms, she suddenly lost power of motion in her left leg and foot. Marked trophic changes soon took place in the affected parts, they were colder than the corresponding portions on the other side of the body, some movement was possible in both extremities, but there were no other signs of

paralysis here or elsewhere. Pulsation was absent from the arteries of the left forearm below the brachial artery and in the palpable arteries of the left lower extremity. Four days after she was first seen, she died very suddenly. Autopsy showed the presence of a marked mitral stenosis and of a large ante mortem clot in the left auricle. Obstruction of the vessels in the extremities was due to emboli, one in the brachial, the other in the lower half of the femoral.

4. **Sugar in Spinal Fluid.**—Jacob concludes from his observations: 1. In pyogenic meningitis, pneumococcus, streptococcus, and mixed infection sugar is invariably absent. 2. In cerebrospinal meningitis it is absent in the acute stage, but may return to some extent as the infection recedes. 3. It is present in tuberculous meningitis, except in rare cases, shortly before death. 4. It is present in poliomyelitis.

7. **Opsonic Index.**—Brooks experimented on rats and man to test the correlation between immunity and opsonic production in plague infection, the influence of previous vaccination, and the source of the opsonin. His conclusions are: 1. The substance which produces a rise in the opsonic index in immune pest serum is the nucleoprotein contained in the bodies of the bacilli. 2. Washed bodies of the bacilli, when used as a vaccine, do not cause any increase in the opsonic index. 3. Within limits, the larger the dose the greater the opsonic response. 4. A repeated dose of vaccine raises the index above the maximum of the first inoculation, even after the curve has fallen to its normal level. 5. In the early stages in rats the opsonic response and the degree of immunity produced rise together. 6. In man the maximum response is seen to be much greater than in the case of laboratory rats, and the response in a series of previously sensitized persons is somewhat greater than in a series of persons not previously vaccinated. 7. The local and constitutional effects of nucleoprotein vaccination compare favorably with those observed in other methods of protective inoculation.

8. **Destruction of Alkaloids.**—Clark carried out a series of tests upon the destruction of alkaloids by emulsions of body tissues with the hope of finding the mechanism by which it is accomplished. He concludes from his experiments that the livers of the frog and rabbit have the power of destroying atropine, and that this power persists after the destruction of all living cells, and is due to a soluble body resembling a ferment in its action. In the frog the liver has a marked power, the heart and kidneys a slight power of destroying atropine; no other organ in this animal has any such power. In the rabbit the liver has marked power and the blood less marked power of destroying atropine; no other tissues have any such power. In the cat, rat, and dog none of the tissues investigated have any power to destroy atropine.

10. **Fractures.**—Groves advocates the use of intramedullary bone pegs in the treatment of fractures for the following reasons: 1. The operation is easily and quickly performed and requires only a very small incision and exposure of the soft parts; 2, there is a minimum of injury to the periosteum; 3, the fragments are held in correct position; 4,

slight movement is permitted between the ends of the fragments, thus stimulating rapid union; 5, extension splints are not needed after operation, and massage and passive movements are very easily carried out. In animal work he has tried several materials for the pegs and has found that magnesium is the best because it undergoes slow absorption with resulting marked stimulation of callus formation. From this observation he is led to believe that it may prove serviceable in man in cases of delayed union.

LANCET.

October 26, 1912.

1. J. F. GOODHART: Passing of Morbid Anatomy.
2. G. H. SAVAGE: Mental Disorders.
3. F. E. TYLECOTE: Industrial Mercurial Poisoning.
4. A. WALTON: Operative Treatment of Fractures.
5. J. O'CONNOR: Reflections on Gastrojejunostomy.
6. H. DAVIS: Localized Intracapsular Sulphemoglobinemia.
7. R. S. NOYES: Case of Myxedema.
8. B. HUDSON: Use of Vaccine Treatment in Pulmonary Tuberculosis.

3. **Mercurial Poisoning.**—Tylecote treats of the chronic and, in general, rather mild form of mercurial poisoning which develops in those engaged in the manufacture of felt hats, owing to their continued exposure to mercurial mixtures. The portal of entry for the mercury varies with the process in which the individual is engaged, it may be the respiratory tract, buccal mucosa, or bad teeth, or through abrasions on the hands. There may be a tendency to the development of respiratory disease on the part of those who inhale the mercurial matter, but this is not seen in the others. In all cases, whether acute or chronic, the mouth should be examined, for some of the most distinctive symptoms are to be found there. They are: Slight salivation; the tongue is large, flabby, and dove colored, or silvery; the teeth are blackened, especially near the crowns; and there is usually some pyorrhea. These changes are most marked in smokers and those who chew tobacco. The edge of the gum is often cyanosed so that a casual glance might lead one to mistake it for a lead line. Many of the sufferers first complain of a tremor which is rather fine, rapid, and of irregular amplitude. It is generally increased on voluntary movement and stops during sleep. It is much less also when lying down. It is first noticed in the arms or hands, as a rule. It may be more marked on one side than on the other, and may often be easily detected in the handwriting. Some of the patients experience some difficulty in locomotion, though this is not common. The heart, bloodvessels, and kidneys are usually not materially affected. Treatment consists in rest in bed, administration of small doses of potassium iodide, and the abandonment of the occupation.

4. **Operative Treatment of Fractures.**—Walton gives the following indications for the use of plating in fractures: Operation is strongly indicated in the presence of one of the following complications: 1. Very wide separation of the fragments so that it is difficult to bring them together; 2, tilting of the fragments so that even if brought together the apposition would not be good; 3, intervention between the fragments of some other tissue, such as aponeurosis, tendon, or muscle. Operation will probably be required in the case of

some fractures which often do well without. It is called for in these when nonoperative measures fail after a brief but sufficient trial. The T or Y shaped fractures through joint surfaces will usually require operation because: 1. Slight irregularities in the joint surfaces are likely to be followed by considerable disability; 2. fibrous ankylosis is likely to result from the presence of blood and exudate in the joint cavity; 3. passive movements are required early and cannot be carried out well unless the fragments are mechanically fixed. The third class calls for operation only after other methods of treatment have failed; this includes, chiefly, failure in securing correct apposition of the fragments. In the remaining fractures operation is wholly uncalled for.

6. **Sulphemoglobinemia.**—Davis's patient was totally free from symptoms other than peculiar pigmentation, except that she had some digestive disturbance of a minor grade. Her face was a deep slate blue, almost a blue black. This color involved the entire face, scalp, and exposed part of the neck, and was absent from all other parts of the body with the single exception of the bases of the finger nails. The mucosæ were not pigmented. This pigmentation began eleven years prior to the time when Davis first saw her. Blood and urine examinations showed nothing of interest. Subsequently, however, blood was drawn from the ear instead of the finger, and the absorption band of sulphemoglobinemia was found. Later spectrum analyses by another observer confirmed the previous findings; that is, absence of the absorption band from blood drawn from portions other than the ear. This suggests that the abnormal blood pigmentation was confined to the small areas mentioned. An organism was isolated from the blood which is thought to be the causative factor of the condition in this case. A further peculiarity of the case is the fact that the intensity of the color varied from time to time, even changing at short intervals. Recently there has been a tendency for the pigmentation to spread to other portions of the body.

8. **Vaccines in Tuberculosis.**—Hudson reports good results from the use of autogenous vaccines in the treatment of patients with pulmonary tuberculosis in whom there is an added infection, such as that of an abscess cavity. The treatment by vaccine may accompany or precede the use of tuberculin. He emphasizes the fact that all of the general hygienic and climatic measures should also be employed in the treatment.

GLASGOW MEDICAL JOURNAL.

October, 1912.

1. J. SOUTTAR M'KENDRICK and JOHN H. TEACHER: Cancer of Throat Treated by Radium.
2. JAMES CRAIG: Some Phases of Articular and Muscular Rheumatism.
3. DAVID WATSON: Diagnosis of Chronic Gonococcus Infections.
4. JOHN MORTON: Stricture of Esophagus.

JOURNAL OF LARYNGOLOGY, RHINOLOGY, AND OTOLOGY.

October, 1912.

1. WILLIAM MILLIGAN: Operative Treatment of Labyrinthine Vertigo in Nonsuppurative Disease of Internal Ear.
2. JULES BROCKHAERT: Technique of Regional Anesthesia in Rhinology.
3. H. L. GREGORY: Acute Cerebrospinal Meningitis of Nasal Origin.

JOURNAL OF TROPICAL MEDICINE AND HYGIENE.

October 1, 1912.

1. LAWRENCE G. FINK: Blackwater Fever in Burma.
2. H. M. JAMES: Comments upon an Article on Blackwater Fever by Doctor Fink.
3. LUCIUS NICHOLLS: Pellagra. "Sandfly Protozoon" versus "Zeist" Theory.
4. REIGHARD WELLMAN and ALBERT HAND: Experiments with Culture Media Suitable for Use in Tropical Countries.
5. R. H. CASTOR: Pigmented Maculæ on Body.

BOSTON MEDICAL AND SURGICAL JOURNAL

October 31, 1912.

1. VINCENT Y. BOWDITCH: Memorabilia: Extracts from Medical Notes Made by the Late Henry Ingersoll Bowditch, M.D., of Boston.
2. ARTHUR L. CHUTE: Cases of Prostatic Obstruction Presenting Overdistended Bladders.
3. EDWARD O. OTIS: Artificial Pneumothorax in Advanced Unilateral Cases of Pulmonary Tuberculosis.
4. LAWSON BROWN, HARRY LEE BARNES, and VICTOR F. CULLEN: Routine Medical Work in Sanatorium.

2. **Prostatic Obstruction.**—Chute believes that the mortality in operations for the relief of prostatic obstruction depends largely on the condition of the kidneys; that urinary back pressure and the damage and embarrassment this inflicts on the kidneys is the commonest form of renal danger in prostatics. Its importance lies in the fact that a patient may be very near the uremic state without this being evident, for our functional tests do not give us absolutely definite information as to how near the uremic state a patient is. Our most accurate idea is obtained from the symptoms of general toxemia, which are referred sometimes to the digestive tract, less often to the nervous system.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

November 2, 1912.

1. JOHN G. CLARK: Gallstones Coincident with Other Surgical Lesions.
2. WALTER W. HAMBURGER: Sporotrichosis in Man. Cases Reported in United States; Consideration of Clinical Varieties and Important Factors in Differential Diagnosis.
3. ARTHUR C. MARTIN: Application of Conservative Surgery to Ovarian Dermoids.
4. J. ARCHIE ROBERTSON: Bilateral Fibromatosis of Ovaries, with Ossification of Ovarian Fibroma.
5. SAMUEL AMBERG and J. H. MASON KNOX: Influence of Sodium Iodohydrate on Reactions of Inflammatory Character.
6. HENRY KRAEMER: Retail Pharmacist as Purveyor of Pure Drugs.
7. L. F. KEBLER: Quality of Drugs on Market.
8. R. H. TRUE: Drug Plant Cultivation.
9. L. HARRISON METTLER: Multiple Sclerosis.
10. F. X. DERGUM: Multiple Cerebrospinal Sclerosis, Presenting Unusual Symptoms Suggesting Paresis. Clinical and Pathological Findings.
11. ANGUS MCLEAN and R. C. ANDRIES: Ileus Considered Experimentally.
12. OLIVER T. OSBORNE: Some Common Types of Hyposecretion of Thyroid.
13. R. E. CASTELAW: Importance of Careful Investigation before Removing or Destroying Organs.

1. **Gallstones Coincident with Other Surgical Lesions.**—See this JOURNAL for June 15th, page 1293.

2. **Sporotrichosis in Man.**—Hamburger believes that sporotrichosis is a widespread disease, chiefly found in the country and farming districts, and that many unhealed ulcers diagnosed as being due to tuberculosis, syphilis, glanders, blastomycosis, actinomycosis, etc., are really manifestations of unrecognized sporotrichosis. This disease is not always a local skin affection, but under favorable conditions it becomes a generalized systemic infection like other granulomas, *sporotrichum* having been found in muscles, joints, bones, kidney, lung, etc., even in the blood, having been recovered from the blood stream by the usual methods of blood culture. As soon as the attention of

the profession, especially those practising in the farming districts, was directed to the infection, a number of these cases were soon reported. The writer has found twenty-eight cases reported in American literature, including the one reported here. In addition, he has collected thirty cases of highly probable spirotrichosis. Following a history of slight trauma, a slow period of incubation, and a slowly ascending infection along the course of the deep lymphatics, there is a production of characteristic small, round, hard, subcutaneous nodules which uniformly evolve into softened cold abscesses or cutaneous ulcers, which pursue a lengthy course, with little or no pain or rise in temperature, and little or no effect upon the general health. There is local and general eosinophilia, and the organism can be cultivated on two per cent. glucose agar at room or incubator temperature. The treatment consists of potassium iodide, internally, in increasing doses up to six grains a day, or more, and a weak iodine solution (water, 500 grammes; potassium iodide, 10 grammes; iodine, one gramme) locally. The ulcerated points should be cauterized with tincture of iodine.

5. **Influence of Sodium Iodoxybenzoate on Reactions of Inflammatory Character.**—See this JOURNAL for June 15th, page 1291.

7. **The Quality of Drugs on the Market.**—See this JOURNAL for June 15th, page 1291.

8. **Drug Plant Cultivation.**—See this JOURNAL for June 15th, page 1291.

9. **Multiple Sclerosis.**—See this JOURNAL for June 8th, page 1224.

10. **Case of Multiple Cerebrospinal Sclerosis, Presenting Unusual Symptoms.**—See this JOURNAL for June 8th, page 1224.

11. **Ileus Considered Experimentally.**—McLean and Andries define "ileus," meaning literally a twist, as any condition in which the onward flow of intestinal contents is impeded, whether mechanical or adynamic. They conclude that death in ileus is not due to a toxemia, i. e., neither to absorption of bacteria or their toxins, nor to the absorption of some altered physiological secretion. A prime factor in the causation of death is a depletion of the vascular and lymph system, causing a grave disturbance in the circulation, especially the cerebral. A contributory cause, probably, is a pathological change in the sympathetic nervous system, a loss of sympathetic control. The indications in treatment are first, to relieve distention and then to refill the depleted vessels.

12. **Some Common Types of Hyposecretion of the Thyroid.**—Osborne reports ten cases exemplifying what he considers hypothyroidism or symptoms of subthyroid secretion. Some cases of disturbed thyroid secretion look like pure hysteria or neurosis, and for that reason the favorable results obtained from treatment will by some be ascribed to mental impression. Some of the conditions which the writer considers thyroid hyposecretion responsible for are: Cretinism, slow growth in children, some types of eczema, some forms of asthma, infantile obesity, chlorosis, amenorrhea, some digestive disturbances, some forms of epilepsy and gout, depressant hysteria, occasionally the vomiting of pregnancy, some forms of eclamp-

sia and melancholia, adiposis dolorosa, lipomatosis, myxedema, senility, and perhaps Raynaud's disease. These points he demonstrates in the cases presented and, in closing adds: "Lest I seem to advise the frequent and careless use of thyroid, please let me urge that, when it is needed, but small doses be used, as it is potent for harm." When not needed, its administration will aggravate the symptoms. A little dose of thyroid will stimulate a wavering thyroid gland to hypersecretion and Graves's disease. The writer suggests that it be placed on the poison list and not dispensed except on a physician's prescription. Much of the inactive thyroid on the market may be rendered active by combining with it some one of the iodides.

MEDICAL RECORD.

November 2 1912.

1. HENRY M. FRIEDMAN: Diagnosis of Mental Conditions.
2. N. GILBERT SEYMOUR: Caloric Feeding in Tuberculosis. Study of Efficiency of Dietary at Boat Camp "Westfield."
3. J. POMEROY: Tuberculosis of Brain: Tubercle of Left Optic Thalamus.
4. RAYMOND C. COBURN: Safety and Science in Nitrous Oxide Administration.
5. WILLIAM F. WAUGH: Therapeutic Resource in Hernia and Other Bowel Obstructions.
6. THOMAS A. CLAYTON: Tumor of Spinal Cord.
7. E. MAC D. STAUNTON: Simple, Efficient, and Elastic System for Indexing Case Histories and Filing Current Literature and References.

2. **Caloric Feeding in Tuberculosis.**—Seymour concludes his study of the dietary at the boat camp *Westfield*, that with no attempt to use special diets or forced feeding, other than the extra nourishments morning and afternoon, and an abundant supply of milk and eggs, a fairly high average of caloric value has been reached. When the home environments of the patients are considered with their ill nourished condition, he believes that a dietary of 3,000 calories or more daily could be used to advantage. This can be reached by the more frequent use of foods of higher value (cereals, macaroni, prunes, bread, and certain stewed fruits) in place of bulkier foods of fewer calories (potatoes, tomatoes, onions, cabbage, etc.). A more liberal use of butter at all meals, except dinner, and the substitution of lactose for cane sugar is advised.

3. **Tuberculosis of the Brain, with Solitary Tubercle of the Left Optic Thalamus.**—Pomeroy observes that solitary tubercle of the brain substance, uncomplicated by meningitis, is rare in pulmonary tuberculosis. Generally the tumors are multiple or are marked by meningeal infection. In the writer's case there were no evidences of meningeal involvement, nor any tubercles in other parts of the brain. It is an interesting feature that the lesion in the optic thalamus was the cause mainly of mental symptoms, emotional disturbances, certain aphasic difficulties, and few classical symptoms of the *syndrome thalamique*. Finally, there was an entire absence of vomiting, headache, convulsions, paralysis, or other marked motor symptoms.

4. **Safety and Science in Nitrous Oxide Administration.**—Coburn notes the following points as essentials: A preliminary hypodermic injection of morphine and atropine; pliable control of rebreathing and of oxygen throughout the administration; keep the blood always well oxygenated; keep the rebreathing bag close to the patient's face; all parts contaminated by breathing should be sterilized; small amounts of ether should be given as an

adjuvant anesthetic whenever indicated, or the field of operation should be infiltrated with a local anesthetic. Pressure reducing valves and percentage gauges are unnecessary. A constant flow of gases prevents pliable control of rebreathing. Continuous positive pressure is harmful.

5. Therapeutic Resource in Hernia and Other Bowel Obstructions.—Waugh recalls that about twenty years ago the French medical journals recorded a number of cases in which hyoscyamine was employed to facilitate the reduction of hernias, a full dose being administered and the patient left quiet until the physiological effect were manifest, when the hernial protrusion either was restored spontaneously or yielded to slight and painless manipulation. The writer suggests for this purpose a mixture of three parts hyoscyne and two parts atropine, of which the adult male dose is 1/100 grain, divided into ten parts, one part being given from every five to twenty minutes until the physiological effects are produced. The reduction of the hernia will then be easy, unless the sac is adherent, in which case operation may be, and usually is necessary. Hyoscyne relaxes the circular fibres of the gut. Many add strychnine, which energizes the longitudinal fibres, 1/250 grain of strychnine with each 1/1000 grain of the combined hyoscyne and atropine.

ARCHIVES OF INTERNAL MEDICINE.

September, 1917.

1. RALPH PEMBERTON and J. E. SWEET: Influence of Adrenals over Pancreas.
2. EUGENE F. DUBOIS: Absorption of Food in Typhoid Fever.
3. CARLTON L. WOOD and PAUL G. WEISMAN: Effect of Skin Irritant on Local Blood Flow in Hand.
4. ARTHUR STANLEY GRANGER: Presence in Urine of Certain Pressor Bases.
5. EDWARDS A. PARK and W. C. MCGUIRE: Criticism of Two Percussion Methods for Diagnosis of Enlarged Thymus.
6. Pellagra in Illinois; Condensed Report of Illinois Pellagra Commission (Concluded).
7. L. H. NEWBURGH and T. H. KELLY: Effect of Tuberculotoxine on Adrenal Function.
8. LOUIS M. WARFIELD: Studies in Auscultatory Blood Pressure Phenomena. I. Experimental Determination of Diastolic Pressure.
9. ROBERT A. HATCHER: Persistence of Action of Digitalins.

1. Influence of Adrenals over Pancreas.—Pemberton and Sweet had previously found that intravenous injections of epinephrine inhibited the flow of pancreatic juice, and that removal of the adrenals from dogs otherwise normal induced a flow of pancreatic juice which might last for hours. From additional experimentation in dogs, they have ascertained that injections of epinephrine, made when, after removal of the adrenals, the flow is at its height, inhibit it. Shortly after or before the blood pressure in these experiments falls to its previous level, the pancreatic flow returns; it can thus repeatedly be temporarily inhibited. These facts seem to indicate that there exists normally an influence of the adrenals over the pancreatic function.

2. Absorption of Food in Typhoid Fever.—DuBois conducted investigations in six typhoid patients who were given the so called "high calory diet," consisting of about 1,000 c. c. of milk, 300 to 400 c. c., of twenty per cent. cream, 100 to 200 grammes of lactose, two or three eggs, a couple of slices of toast, and some butter. A positive nitrogen balance was obtained in every case during periods when the temperature was still high. DuBois concludes that typhoid patients throughout the dis-

ease can absorb carbohydrates and protein as well as normal individuals. They can absorb very large amounts of fat, but the percentage of absorption is somewhat lower than normal, especially in the earlier part of the disease. The stools of patients on the high calory diet very closely resemble normal stools.

3. Skin Irritation and Local Blood Flow.—Wood and Weisman found that irritation of the skin of the hand by a mustard bath short of producing a definite dermatitis does not materially increase the rate of blood flow through the hand. The local redness is probably due to a dilatation of the cutaneous capillaries and venules without a corresponding dilatation of the underlying arterioles.

4. Pressor Bases in Urine.—Granger was unable to confirm the presence of pressor bases in normal urine, as reported by Abelous and Bain. He states that there is no definite chemical proof that the pressor substances spoken of by these authors are, as asserted, isoamylamine and parahydroxyphenylethylamine.

5. Diagnosis of Enlarged Thymus.—Park and McGuire, from a study of autopsy cases, conclude that the theory of thymus mobility, upon which certain methods of percussing this organ are based, is not supported by anatomical facts.

6. Pellagra in Illinois.—The Illinois Pellagra Commission, in its report, inclines to the conclusion that pellagra is due to infection with some living microorganism. A possible habitat for this parasite in man is the intestinal canal. Certain observations seemed to indicate that deficiency of animal protein in the diet may be a factor predisposing to the disease. Studies of a squad of individuals fed with a large excess of corn products for a year compared with a similar number given a strictly corn free diet revealed no differences in the number of cases or the severity of pellagra which developed in both.

7. Effect of Tuberculotoxine on Adrenal Function.—Newburgh and Kelly, attempting to produce an experimental chronic insufficiency of the adrenals in rabbits by daily injections of tuberculin (O. T.), were able to demonstrate a marked hypoglycemia, suggesting extreme adrenal insufficiency, but found that the pressor function of the adrenals remained uninfluenced and that no Addisonian symptoms appeared.

8. Auscultatory Determination of Diastolic Pressure.—Warfield performed experiments in three dogs to settle definitely the question whether, in the determination of the diastolic pressure by auscultation of an artery distal to the arm cuff, the pressure reading should be taken at the moment when the loud sound heard over the vessel suddenly becomes dull, or when all sound disappears. After first establishing that the tone phenomena in dogs corresponded to those in man, the author, in subsequent tests, was led to conclude that the proper point for the diastolic reading was at the tone change from clear to dull, and not at the point where all sound disappears. The latter change occurs, as a rule, at an appreciable interval below diastolic pressure.

9. Persistence of Action of Digitalins.—See this JOURNAL for June 15th, page 1201.

ARCHIVES OF PEDIATRICS

September, 1912.

1. THOMAS S. SOUTHWORTH: Dextrins and Maltose in Infant Feeding.
2. L. E. LAFETRA: Salvarsan in Infants and Young Children.
3. W. P. NORTHRUP: Infantile Scurvy and Modern Conditions.
4. ALFRED FRIEDLANDER and J. VICTOR GREENEBAUM: Influence of Food upon Intestinal Flora of Infants.
5. HOWARD KENNEY HILL: Retroperitoneal Lymphosarcoma Treated with Coley's Fluid.
6. J. FINLEY BELL and LEON T. LEWALD: Chronic Colitis in Child Three Years of Age, with Deformity of Sigmoid.

2. Salvarsan in Infants and Children.—LaFetra has treated, during the last year, twenty-five cases of hereditary syphilis, ten of which received salvarsan with or without mercurial treatment, while fifteen were treated by the use of mercurials alone. The ages of the former patients ranged from two months to five and one half years, of the latter, three weeks to one year. The mercurial treatment consisted of one quarter to one half grain of gray powder three times daily, together with inunctions of twenty-five per cent. blue ointment every second day. The salvarsan was given intravenously. The dose of salvarsan varied from gramme 0.05 to 0.1. The febrile reaction was seen only three times and was very mild. There was never any necrosis or inflammation at the site of venipuncture. Of the ten cases treated by salvarsan two ended fatally, all the others were decidedly improved with the disappearance of specific symptoms. Of the fifteen cases treated by mercurials alone three improved, two did not improve, and ten terminated in death. After the injection of salvarsan the Wassermann reaction was found to be still positive in two out of three cases in which the reaction was tested and in which the clinical symptoms had disappeared. The author comes to the following conclusions: 1. While the indirect method of giving salvarsan to the nursing mother is valuable and should be used when the mother is available, the surest method consists in giving the salvarsan to the infant. Both indirect and direct administration should be employed whenever possible. 2. The intravenous route of administration is the best. Usually it will be found easiest to expose the vein before attempting to insert the needle. 3. The dose should be not less than 0.01 gramme to the kilo of body weight. 4. Repeated injections and supplemental treatment by mercurials may be necessary. 5. The Wassermann reaction should be followed for a year.

4. Intestinal Flora in Infants.—Friedlander and Greenebaum studied two marantic infants in detail, attempting to ascertain whether definite changes in the bacterial picture could be brought about by change in food. Finkelstein's albumin milk was first administered, seven ounces every three hours, six feedings in twenty-four hours. After three weeks, complete series of bacteriological tests were made at intervals of a week, using stools collected by the anal tube. The food was then changed, and two per cent. fat was given, along with seven per cent. sugar and three per cent. proteid in the same quantity. The foods used had very little influence on the biological reactions of the fecal flora as a whole. There was, however, a slight lessening of the putrefactive reactions on the 2-7-3 modification. The lactic acid bacillus flora formed during its administration was continued when the food was changed to 2-7-3. In striking contrast to

the slight changes in the intestinal flora there was a remarkable change in the clinical aspect of the two cases. The general condition improved greatly, as did the gross character of the stools. After the administration of Finkelstein's food the gas bacillus disappeared in each case. The low sugar content of the food undoubtedly rested the gastrointestinal tract, so that after four weeks of its use an increase of sugar ad maximum (seven per cent. lactose) was not only tolerated, but utilized with great benefit to the child.

INTERSTATE MEDICAL JOURNAL.

September, 1912.

1. WILLIAM A. WHITE: Rationalization of Mental Medicine.
2. JOHN W. MARCHILDON: Wassermann Reaction in Diseases Other than Syphilis.
3. R. T. GLICHREST: Primary Carcinoma of Lung.
4. LYDIA M. DE WITT and FLORENCE L. EVANS: Laboratory Methods of Diagnosis of Typhoid Fever.
5. M. W. HOGE: Radiophalangeal Reflex in Lesions of Pyramidal Tract.
6. E. H. SKINNER: Triple Bismuth Meal for Gastrointestinal Fluoroscopy.

2. Wassermann Reaction in Diseases Other than Syphilis.—Marchildon observes that a positive Wassermann reaction sometimes occurs in leprosy, malaria, tropical diseases, and recurrent fever, but it is the exception and not the rule. The practical use of the Wassermann test would not be impaired by the unusual occurrence of such diseases in this climate. A Wassermann reaction seldom appears, if at all, in scarlet fever, and when it does, disappears rapidly, and would have no effect upon the practical use of the test. Finally, although an occasional positive Wassermann reaction may occur in diseases other than syphilis, it must, for every day use, be considered characteristic for that disease.

5. Radiophalangeal Reflex in Lesions of the Pyramidal Tract.—Hoge considers this reflex an aid to diagnosis in lesions of that part of the pyramidal tract in relation with the cervical enlargement of the cord. It is not of itself sufficient, but is of value when taken with other signs and symptoms. It does not, alone, necessarily indicate an active or severe lesion, as it is easily induced and is quite persistent, and may result from an old injury or affection which has not impaired function. It was found associated with other recognized signs of pyramidal lesion in a few cases, in which the possibility of the cause being a slight congenital defect, fully compensated, was entertained by Hoge.

6. Triple Bismuth Meal for Gastrointestinal Fluoroscopy.—Skinner adopts a schedule of bismuth meals which allows examination of the entire alimentary tract at one sitting. Each meal consists of two ounces of bismuth oxychloride thoroughly mixed into eight to twelve ounces of thin cream of wheat porridge, and eaten with cream and sugar or fruit juices. The same bismuth salt in equal dose may be mixed in about fourteen ounces of milk fermented with the Bulgarian ferment, if the patient prefers to drink. The first meal is taken at 10 a. m. on the day preceding the examination, the second, at 4 a. m. of the next day, and the patient reports for examination at 10 a. m. at the x ray laboratory the same day. The usual meals intervene. There will be a twenty-four hour bismuth meal in the colon, a six hour bismuth meal in the stomach, small intestine, and cecum. After the

examination, a third bismuth meal is taken, which gives position, outlines, and peristalsis of the esophagus and stomach. No untoward effects have followed this arrangement of bismuth meals.

JOURNAL OF BIOLOGICAL CHEMISTRY.

September, 1912.

1. W. F. KOCH: Occurrence of Methyl Guanidine in Urine of Parathyroidectomized Animals.
2. H. B. WILLIAMS: Animal Calorimetry. I. Small Respiration Calorimeter.
3. H. B. WILLIAMS, J. A. RICKE, and GRAHAM LUSK: Animal Calorimetry. II. Metabolism of Dog Following Ingestion of Meat in Large Quantity.
4. P. A. LEVENE and W. A. JACOBS: Guaninhexoside Obtained on Hydrolysis of Thymus Nucleic Acid.
5. P. A. LEVENE and W. A. JACOBS: Cerebronic Acid.
6. P. A. LEVENE and W. A. JACOBS: Cerebrosides of Brain Tissue.
7. DONALD D. VAN SLYKE and GUSTAV M. MEYER: Aminoacids Nitrogen of Blood.
8. P. A. LEVENE and W. A. JACOBS: Structure of Thymus Nucleic Acid.
9. P. A. LEVENE and W. A. JACOBS: Guanlylic Acid.
10. W. A. JACOBS: Preparation of Glucosides.
11. W. A. JACOBS: Removal of Phosphotungstic Acid from Aqueous Solutions.
12. A. I. RINGER: Protein Metabolism in Experimental Diabetes.
13. R. J. ANDERSON: Organic Phosphoric Acid Compounds of Wheat Bran.
14. ARTHUR I. KENDALL and CHESTER J. FARMER: Bacterial Metabolism. V.
15. ARTHUR I. KENDALL and CHESTER J. FARMER: Bacterial Metabolism. VI.
16. THOMAS B. OSBORNE and LAFAYETTE B. MENDEL: Role of Gliadin in Nutrition.
17. A. I. RINGER: Chemistry of Gluconeogenesis. I. Quantitative Conversion of Propionic Acid into Glucose.

7. **Protein Assimilation.**—Van Slyke and Meyer demonstrated that the blood of the dog normally contains nitrogen in the form of aminoacids to the extent of three to five milligrammes per 100 c. c. in the fasting animal, and that during normal digestion of meat the aminoacid content of the blood undergoes a marked increase. The hypothesis of Abderhalden, that the aminoacids formed in digestion are synthesized into blood protein while passing through the intestinal wall thus becomes superfluous. After entering the blood current the absorbed aminoacids circulate through the entire organism and are offered directly to the body cells. The smallness of the amount of aminoacids normally present in the circulation is accounted for by the rapidity with which the tissues take up these compounds from the blood as soon as they become unusually abundant therein. Twelve grammes of alanin, injected during thirteen minutes into the vein of a dog, were so quickly removed from the blood stream that five minutes after the injection only 1.5 gramme was left in the blood and after thirty-five minutes but 0.4 gramme.

12. **Protein Metabolism in Experimental Diabetes.**—Ringer showed that in phlorrhizin glycosuria the protein metabolism rises in part because of the hypoglycemia present. The giving of small quantities of glucose to phlorrhizinized animals results in a sparing of protein, although all of this glucose is eliminated in the urine without being burnt. In pancreatic diabetes, on the other hand, the giving of glucose does not spare any protein.

16. **Role of Gliadin in Nutrition.**—Osborne and Mendel, after referring to the fact that hitherto there has been no evidence available that the animal organism could synthesize any amino acid other than glycocoll, reports experiments made with gliadin on rats, which showed synthesis, not only of additional amino acids, but also of nucleic acid and casein.

NEW YORK STATE JOURNAL OF MEDICINE.

September, 1912.

1. G. H. TORNEY: Surgery of Battlefield.
2. C. F. STOKES: Wounds of Naval Warfare.
3. J. B. DEEVER: Surgery of Bile Ducts.
4. L. S. HAYNIS: Biliary Colic without Gallstones.
5. R. A. HIBBS: Operation for Pott's Disease.
6. L. W. HORCHES: Surgical Treatment of Irreducible Dislocations of Shoulder and Elbow Joints.
7. J. M. HITZROT: Treatment of Simple Fractures by Closed Method.
8. GEORGE DOCK: Symptomatology of Hyperthyroidism.
9. A. J. LAMBERT: Atypical Forms of Hyperthyrea.
10. S. P. BEEBE: Medical Treatment of Graves's Disease.
11. M. B. TINKER: Surgical Treatment of Hyperthyrea.
12. C. A. ELSBERG: Endotracheal Insufflation Anesthesia.
13. R. M. PEARCE: Chance and Prepared Mind.
14. J. MEYERS: Syphilis of Stomach.
15. H. D. FURNISS: Radiographs of Argylol or Collargol Injected Urinary Tract.

5. **Operation for Pott's Disease of the Spine.**—See this JOURNAL for May 27, 1911, page 1013. Hibbs here reports the performance of this operation in forty-three cases up to the present time. In all the cases the wounds have healed without complication, pain has been slight, and there has been no reaction from the operation. Eighteen of the patients have been without support for three to twelve months and have shown no symptoms of disease or any increase in deformity. It is noteworthy that in nine patients a fusion of the laminae and the spinous processes of two or more of the vertebrae involved in the kyphos was found to be present at the time of the operation. Eight of these latter patients were less than ten years of age, one being only two and a half, at the time of operation. In one the duration of the disease had been only four months. While the fusion involved two or three vertebrae in each case, in none was it complete in producing anchorage of diseased vertebrae to healthy ones above and below. This attempt on the part of Nature is an indication of what the surgeon should seek to accomplish by operation.

10 and 11. **Treatment of Hyperthyrea.**—Beebe urges the observance of all the general therapeutic measures for the alleviation of this condition in addition to the use of serum. He believes that of the patients who are seen early in the disease eighty per cent. will be cured or very much relieved by these medical measures; of those in the later stages of the disease, but not the most unfavorable as to duration or severity, fifty per cent. can be cured or so improved as to be able to pursue the usual activities of life without discomfort; in the last group fall the atypical cases, and here the results are so variable that no figures can be given.—Tinker, on the other hand, believes that surgical procedures offer far greater prospects of cure or benefit than do medical. He goes so far as to state that the very toxic cases never are cured under medical measures, and that all but the most desperate cases can be treated surgically with surprisingly good results. He feels that if the proper care is used the strictly operative risk is no greater than that in appendix operations. In further confirmation of his belief that surgery should be the method to be employed, he remarks that all his patients had previously undergone a variety of medical measures, including the use of serum, without lasting benefit.

12. **Endotracheal Insufflation Anesthesia.**—Elsberg has used this method in almost 500 cases of all kinds and so far has seen no bad effects in its train. Outside of its special field of usefulness,

thoracic surgery, he has found it of great value in cases of intestinal obstruction, for it completely does away with the dangers of aspiration of vomited matter; equally does this apply to operations in the buccal and nasal cavities and upon the larynx, in preventing the aspiration of blood and other material. It seems to be particularly well borne by patients who are very weak and cachectic. In goitre operations it is of value in the prevention of the tendency to cough, and of the trachea to collapse. Last, in those patients who have a chronic bronchitis or some pulmonary trouble, it seems entirely to do away with the dangers of subsequent pneumonia. After the completion of the operation the insufflation of pure air, or air and oxygen, enables the anæsthetist to bring his patient back to consciousness before he leaves the table. It is scarcely necessary to mention its usefulness in the maintenance of artificial respiration.

14. **Syphilis of the Stomach.**—Meyers reports a case of this rare manifestation of syphilis and reviews the literature of the subject. He draws the following conclusions from his studies: 1. That it is a rare manifestation of the disease, congenital or acquired, occurring mostly in males, at almost any age but most often in the fourth and fifth decades; 2, its pathology is characterized by multiplicity of lesions in many organs, and variety and plurality of lesions in the stomach itself; 3, its symptomatology corresponds to the pathological findings and presents no unanimity of symptoms; 4, four symptoms are, however, very common, alone or combined, i. e., pain, especially immediately after eating; emaciation, tenderness, hemorrhage; 5, clinically the cases should not be divided too strictly, as an exact diagnosis of the form of lesion is often impossible, except upon operation or autopsy; 6, it may be classified under, *a*, ulcer and its results, *b*, gumma and its sequelæ, *as*, tumor, *c*, widespread infiltrations of gummatous or more fibrous character leading to deformity, cicatrization, or involvement of the peritoneum or neighboring organs, *d*, a combination of two or more of the preceding; 7, the diagnosis is extremely difficult as a rule; in the face of a clear history or of a positive Wassermann it should be comparatively simple; 8, proper diagnosis is very important, as death may occur through hemorrhage, inanition, or stenosis, when timely intervention would have cured; 9, any form of mercury and the iodides gives as brilliant results as are to be found in the practice of medicine.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Die Bleichsucht. Von Prof. Dr. C. von Noorden, Vorstand der i. medizinischen Klinik in Wien, und Privatdozent Dr. N. von Jagic, in Wien. Zweite, umgearbeitete Auflage. Wien und Leipzig: Alfred Hölder, 1912. Pp. vi-259.

Inasmuch as this is a part of the Nothnagel system of medicine little more need be said, particularly when the older author is so well known. The subject matter is divided into eight chapters which treat the condition in great detail. Chapter four takes up very extensively the special symptomatology under different systems, as the

blood, vessels, respiratory tract, etc. Comparatively little space is given to the actual diagnosis, but that is covered very fully in the chapter on symptomatology. Many pages however, are devoted to the extremely important topic of the treatment. This is given in great detail and the reasons for the methods employed are gone into. The brief chapter on the theories of chlorosis is interesting, as von Noorden holds that it is probably due to a functional weakening of the blood forming organs, which may be either congenital or acquired. Mention is made of Kottmann's idea that this disease is due to some disturbance of an internal ovarian secretion. The literature of the subject is given in great length at the end of the book. This publication is a valuable contribution and is well worth having.

The Physician's Visiting List (Lindsay & Blakiston's for 1913. Sixty-second Year of Its Publication, Philadelphia: P. Blakiston's Son & Co., 1912. (Price, \$1.25.)

The Medical Record Visiting List or Physicians' Diary for 1913. New Revised Edition. New York: William Wood & Co., 1912. (Price, \$1.50 for sixty patients a week; \$1.25 for thirty patients a week; \$2.00 for ninety patients a week.)

As the robin designates the coming spring thus the physician's "visiting list and diary" reminds us that the old year comes to a close and we have to prepare for a new one. Both Blakiston's and Wood's physician's diaries are so well known that we can say hardly anything new in their favor. The table of contents is more or less the same every year; due attention is paid to the make up, that is the typography, binding, and even the lead pencil are as the physician is accustomed to. In short, old friends greet us and remind us of Christmas.

Mind Cure and Other Essays. By PHILIP ZENNER, A. M., M. D. Cincinnati: Stewart & Kidd Company, 1912. Pp. iv-157. (Price, \$1.25.)

Doctor Zenner has collected eight of his excellent essays or addresses in book form. He deals with such subjects as mind cure, prevention of disease in childhood, alcoholism, social diseases, defectives, medical inspection of schools, truancy, eugenics, etc., in popular agreeable language. The essays are obviously designed for the laity and, if that worthy portion of mankind, so pitifully ignorant and, alas! indifferent to facts bearing on their own welfare, can be induced to read and appropriate the recommendations herein offered, much good will accrue. Medical authors animated by altruistic aims will vibrate in sympathetic, yet amused accord with Doctor Zenner on reading the concluding essay entitled *The History of a Book*. In this is found a narrative of efforts to instruct the public in sex hygiene (than which no knowledge can more conduce to human betterment) and his troubles. Many other worthy authors, burning with righteous zeal, have likewise done their best to play the rôle of Abu Ben Adhem with less success.

The truth of the matter lies somewhat as follows: Many of our fellow citizens cherish the belief that they sincerely desire to learn how to preserve health, enhance vigor, conserve vital dynamics by prevention and self repair. As a matter of cold fact the vast majority have by no means reached that stage of mental evolution wherein they are emancipated from pathetic absurdities, traditional limitations, and of overmastering impulses toward minor and often hurtful self indulgences. Let no man who feels the stir of impulse to teach these willingly deaf or cunning procrastinators be discouraged. The book is admirable designed to play an important rôle, to act as a wedge in the armor of indifference which so ably defends "our best citizens" from learning how to live longer, be wiser, achieve greater things, evolve nobler personalities by good teaching in right thinking and living.

BOOK AND MAGAZINE NOTES.

Sir Conan Doyle, our gifted literary colleague, will delight medical readers as well as the great public with *The Lost World*, in which farce and melodrama are skillfully blended. The story is too short, especially at the price asked, and the frequent hints at a sequel are gratifying. There are annoying oversights in the proofreading, and Sir Conan frankly uses "human" as a noun, which, we be-

lieved, was considered by English writers to be a beastly Americanism. We are sure that Sherlock Holmes and Doctor Watson must have attended the lecture, the details of which are given in the last chapter, but there is no mention of their presence.

We do not mind confessing that we entered upon Dr. G. Frank Lydston's four act play, *The Blood of the Fathers* (Chicago: The Riverton Press, 1912), with an inclination to scoff, but we remained, if not to pray, still to be impressed with a clever and workmanlike drama. The obvious moral is subordinated to the play as a work of art, which is proper, and the various artifices of the stage are used with a sureness and ingenuity that are astounding to any reader familiar only with Doctor Lydston's scientific writings. The most experienced of managers cannot predicate the success of an acted drama from mere examination of the book, so we venture our opinion that this play would be available for popular production with much diffidence. We can promise our friends, however, great entertainment and thrill from its perusal. The hero, Gilbert Allyn, his friend, Ross Hartwell, Miss Carrington, and the Japanese valet, Matsada, are excellently done, and it must be remembered that this being a drama, the characters have to reveal themselves solely by the dialogue.

Meetings of Local Medical Societies.

MONDAY, November 18th.—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York; Elmira Clinical Society; Hartford, Conn., Medical Society.

TUESDAY, November 19th.—New York Academy of Medicine (Section in Medicine); Buffalo Academy of Medicine (Section in Obstetrics and Gynecology); Tri-professional Medical Society of New York; Medical Society of the County of Kings; Binghamton Academy of Medicine; Clinical Society of the Elizabeth, N. J., General Hospital; Syracuse Academy of Medicine; Ogdensburg Medical Association; Oswego Academy of Medicine; Psychiatric Society of Ward's Island.

WEDNESDAY, November 20th.—New York Academy of Medicine (Section in Genitourinary Diseases); Northwestern Medical and Surgical Society of New York; Woman's Medical Association of New York City (New York Academy of Medicine); Medicolegal Society, New York; New Jersey Academy of Medicine (Jersey City); Buffalo Medical Club; New Haven, Conn., Medical Association.

THURSDAY, November 21st.—New York Academy of Medicine (stated meeting); German Medical Society, Brooklyn; Newark, N. J., Medical and Surgical Society; Aesculapian Club of Buffalo, N. Y.

FRIDAY, November 22d.—New York Academy of Medicine (Section in Public Health) Academy of Pathological Science, New York; New York Society of German Physicians; New York Clinical Society; Manhattan Medical Society.

SATURDAY, November 23d.—West End Medical Society; New York Medical and Surgical Society; Harvard Medical Society; Lenox Medical and Surgical Society.

Official News.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending November 9, 1912:

Allen, W. H., Lieutenant, Medical Corps. Ordered to return to his station, Fort Sam Houston, Texas, from Marfa, Texas. **Baker, D.**, Major, Medical Corps. Left Fort McPherson, Ga., November 1st, on twenty days' leave of absence. **Burnside, J. R.**, Lieutenant, Medical Corps. Ordered to temporary duty at Marfa, Texas, from Fort Riley, Kansas. **Dorland, Judson**, First Lieutenant, Medical Reserve Corps. Resignation accepted on November 6th. **Enders, William J.**, First Lieutenant, Medical Reserve Corps. Honorably discharged from the service, at his own request.

Births, Marriages, and Deaths.

Married.

Beardsley—Hartness.—In Springfield, Vt., on Wednesday, October 30th, Dr. William Henry Beardsley, of Springfield, Mass., and Miss Anna Jackson Hartness. **Boudart—Bannon.**—In Trenton, N. J., on Friday, October 25th, Dr. Prosper Joseph Boudart and Miss Florentine Thaddeus Bannon. **Cooke—Jones.**—In Front Royal, Va., on Saturday, November 2d, Dr. Robert Page Cooke and Miss Nellie Virginia Jones. **Douglass—Hunnicut.**—In Birmingham, Ala., on Wednesday, October 30th, Dr. John Douglass and Miss Josephine Hunnicutt. **Grow—Kimball.**—In Lebanon, N. H., on Wednesday, October 30th, Surgeon Eugene Julius Grow, United States Navy, and Miss Arma C. Kimball. **Miller—Dempsey.**—In New York, on Sunday, November 3d, Dr. Wayne Miller and Miss Ellen Van Horn Dempsey. **Steele—Bynum.**—In Corinth, Miss., on Thursday, October 31st; Dr. Newton C. Steele, of Chattanooga, Tenn., and Mrs. Kate Jones Bynum. **Vosburgh—Rodman.**—In New York, on Saturday, November 2d, Dr. Arthur Seymour Vosburgh and Miss Elsie F. Rodman.

Died.

Agan.—In New York, on Wednesday, November 6th, Dr. David Henry Agan, aged sixty-four years. **Bayer.**—In San Francisco, Cal., on Tuesday, October 29th, Dr. Joseph Bayer, aged seventy-three years. **Bean.**—In Sheakleville, Pa., on Tuesday, October 29th, Dr. O. W. Bean, aged sixty years. **Cabot.**—In Boston, on Monday, November 4th, Dr. Arthur Tracy Cabot, aged sixty-one years. **Cross.**—In Boston, on Friday, November 1st, Dr. Hiram B. Cross, aged seventy-nine years. **Davis.**—In New York, on Monday, November 4th, Dr. Lewis J. Davis, of Watertown, N. Y., aged forty-five years. **Ernest.**—In Johnstown, Pa., on Friday, November 1st, Dr. Jacob E. Ernest, aged forty-eight years. **Fletcher.**—In Washington, D. C., on Friday, November 8th, Dr. Robert Fletcher, aged eighty-nine years. **Hamilton.**—In Chester, Pa., on Monday, November 4th, Dr. Frank Lincoln Hamilton, aged forty-seven years. **Leavitt.**—In Rockville, Ind., on Tuesday, October 29th, Dr. Harry Baldwin Leavitt. **Mallett.**—In Charlottesville, Va., on Thursday, November 7th, Dr. John William Mallett, aged eighty years. **Mayer.**—In Hamilton, Ohio, on Thursday, October 31st, Dr. Otto W. Mayer. **McGillivray.**—In Ottawa, Canada, on Thursday, October 31st, Dr. Alice McGillivray, of Hamilton. **McPherson.**—In Akron, N. Y., on Thursday, October 31st, Dr. John Duncan McPherson, aged fifty-four years. **Monroe.**—In Worcester, Mass., on Tuesday, November 5th, Dr. John E. Monroe, of Orange, aged fifty-three years. **Oviatt.**—In Oshkosh, Wis., on Wednesday, October 30th, Dr. Charles W. Oviatt, aged fifty-nine years. **Pickard.**—In Chicago, on Wednesday, October 30th, Dr. Joseph C. Pickard, aged seventy-one years. **Pitcher.**—In Mount Pleasant, Iowa, on Wednesday, October 30th, Dr. Festus Pitcher, aged thirty-nine years. **Pring.**—In San Francisco, Cal., on Sunday, October 27th, Dr. Ernest Pring. **Rex.**—In Brooklyn, N. Y., on Friday, November 1st, Dr. William Frederick Rex, aged thirty-one years. **Robinson.**—In Pottsville, Pa., on Monday, November 4th, Dr. William H. Robinson, aged sixty-seven years. **Small.**—In Brooklyn, N. Y., on Friday, November 8th, Dr. Henry George Small, aged sixty years. **Smith.**—In Frederick, Md., on Tuesday, November 5th, Dr. Franklin Buchanan Smith, aged fifty-six years. **Taylor.**—In St. Paul, Minn., on Wednesday, October 9th, Dr. John Dempsey Taylor, of Minot, N. D. **Thayer.**—In Boston, Mass., on Friday, November 1st, Dr. Henry R. Thayer, aged ninety-four years. **Toner.**—In Washington, D. C., on Wednesday, October 30th, Dr. John E. Toner, aged fifty-two years. **Urban.**—In Lancaster, Pa., on Sunday, November 3d, Dr. Benjamin F. W. Urban. **Wilburn.**—In Rochester, N. Y., on Thursday, October 31st, Dr. T. Barton Wilburn, aged sixty-eight years. **Woodruff.**—In Boonton, N. J., on Wednesday, November 6th, Dr. Marietta H. C. Woodruff, aged seventy-five years. **Woolverton.**—In Grimsby, Ontario, Canada, on Friday, October 25th, Theron Woolverton, aged seventy-three years.

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Original Communications.

ACUTE POISONING.*

Its Diagnosis and Treatment in Actual Practice.

By EDWARD C. HILL, M.D.,
Denver.

Every general practitioner will occasionally be called in a hurry to treat what is supposed to be a case of acute poisoning. Many such emergencies turn out to be attacks of various kinds of colic, or catastrophes demanding immediate surgical attention, such as perforation of the stomach or duodenum from ulcer. Homicidal poisoning is very infrequent, accidental poisoning is fairly common, and suicide by the poison route is the usual method. In Denver last year there were thirty-five suicidal deaths by poison, and sixteen other deaths from acute poisoning or absorption of deleterious gases.

The diagnosis of acute poisoning depends on four main factors: 1. The statements of the affected party or of his or her friends or relatives; 2, circumstantial evidence, such as finding in the room a bottle or other container labeled with the name of a certain poison; 3, the signs or symptoms manifested by the patient; 4, detecting the poison in the patient's vomit and urine or other excretions.

In the excitement of the moment the often incoherent remarks of attendant friends or relatives are not always to be relied upon, and hysterical patients (both male and female) will at times feign to have taken poison. A considerable proportion of would be suicides are addicted to drugs, which lessens the diagnostic value of finding drug containers in the room. Accidental poisoning is usually the result of mistaking for some medicine a poisonous substance kept carelessly near by, both being at times unlabeled. The most common error in this connection is taking for Epsom salt corrosive sublimate, oxalic acid, or other toxic substance.

Pain is of value as a symptom in relation to corrosive and irritant poisons only. It is immediate and extremely severe, steady, burning like fire from the throat downward, with the caustic alkalies and corrosive acids and salts. Undiluted phenol (carbolic acid) is very corrosive. I have seen the stomach and esophagus perforated in several places from the ingestion of one ounce of phenol. The pain of corrosive poisoning is always accompanied by more or less shock, followed by inflammatory

febrile reaction if the patient survives. Cramps in the calf muscles are sometimes complained of in connection with mineral acid poisoning. Very rarely the administration of opiates will excite abdominal pain, perhaps through tetanic contraction of the large muscles of this region.

Vomiting and purging are more constant features of acute poisoning than any other symptom, but their frequent occurrence with other conditions lessens their diagnostic value. Should, however, a number of persons partaking of the same food or drink, become sick in this manner, we have reason to suspect bacterial or other toxic factors. Bloody vomit is noted at times with corrosives and irritants generally, and bloody stools (simulating dysentery) from mercurial and ptomaine poisoning. Nature frequently saves a life threatened by an active poison, by means of rapid spontaneous evacuation through the mouth and rectum. I have known several instances of such recovery where many times the minimum fatal dose of arsenic or mercury bichloride had been taken. Lead poisoning differs from that due to other irritants in being attended by obstinate constipation.

Coma is a leading symptom, not only with opiates, but with phenol and alcohol poisoning. Phenol produces the contracted pupils and slow breathing seen from overdoses of morphine, and may cause coma or collapse within five minutes of its ingestion. It is distinguished by the carboloid odor of breath and vomit, by the white, hard patches in mouth and throat, and by a rapid rather than slow pulse. In acute alcoholism the odor of the breath is of some diagnostic importance, but, on the other hand, a man may have taken a few drinks and be stricken with apoplexy or the sun's heat. Wood alcohol is much more toxic than grain alcohol, and those who survive a debauch with it are frequently blind for life. Onesided paralysis is usually indicative of cerebral hemorrhage or embolism. Much the most frequent cause of coma is uremia, but in this connection we must remember that albumin and casts are to be found in the catheterized urine in nearly every case of coma. The diagnosis of uremic stupor must rest chiefly on past urinary findings, the ophthalmoscopic picture, and a very high blood pressure.

Convulsions are frequent in poisoning from any cause, particularly in children, being apparently of reflex origin in the action of irritants and corrosives. Spasms due to strychnine are tetanic in nature, very easily excited, and accompanied by a clear mind till near the fatal end, which depends upon interference with normal respiration. De-

*Read before the Medical Society of the City and County of Denver, September 17, 1912.

lirium is most marked with the belladonna group of drugs, which may give rise to fever and a red rash simulating scarlatina; the widely dilated pupils in the former instance are of differential value.

Shock and collapse, manifested by a thready pulse and excessively low blood pressure, is noted particularly with the depressant group of poisons, which includes as most important hydrocyanic acid and cyanides, aconite, cocaine, nicotine, and the coal-tar antipyretics. The cincture sensation is complained of in poisoning by cocaine and aconite. Hydrocyanic acid in lethal doses kills so quickly that the doctor seldom arrives in time to observe the symptoms. The cyanides are slower and distinctly caustic in action; the odor is characteristic. Cyanosis coming on acutely should always suggest acetanilid or some other benzene derivative, but this sign accompanies poisoning by any drug (potassium chlorate, for example) producing methemoglobinemia. The sulphuretted odor of ordinary illuminating gas and the bright red color of the lips of persons poisoned thereby, aid in differentiating coma due to this common cause.

Of other characteristic signs and symptoms of particular poisons may be mentioned: The bursting headache caused by nitroglycerin; the leucinuria and tyrosinuria of phosphorus poisoning; the salivation from mercury, bismuth, pilocarpine, and corrosives generally; the tinnitus aurium of salicylism and cinchonism; the "dead fingers" of ergotism; the mydriasis of belladonna, atropine, stramonium, hyoscyamus, aconite, alcohol, chloroform, and conium; the paralysis of aconite, hemlock, and physostigmine; the urticaria, in susceptible subjects, resulting from quinine, opiates, chloral, and salicylates; and the dry throat, ptosis, diplopia, and occasional scarlet rash of meat poisoning.

The prognosis of acute poisoning is not very hopeful as a rule. Unless Nature helps the patient by vomiting and purging, when the doctor arrives it is often too late to be of much service. Indeed the poisons, such as phosphorus, which are slow and insidious in their action, are among the most dangerous. In mercury bichloride poisoning death may ensue after several weeks' suffering. Yet occasionally it will fall to the lot of every general practitioner to save a life which would otherwise have been lost through poisoning.

In the treatment of acute poisoning time is a very important consideration. Action should be prompt, and each step should be taken with a definite object in view. When the best antidote is wanting, then the second or third best is in order.

Whatever the nature of the poison, the first thing to do ordinarily is to remove it from the stomach, in connection with the administration of a proper antidote. Except in the case of mineral acids and concentrated lye, which might lead to perforation of the stomach, it is well to wash out this organ repeatedly with water by means of a funnel stomach tube or the household fountain syringe (first removing the hard rubber point). For alkaloidal poisons generally, dissolve in the water potassium permanganate, from two to four grains to the pint, leaving a pint of the liquid in the stomach after lavage, to counteract the morphine or other alkalioid excreted

into this organ. In the absence of the permanganate, tannic acid (one or two drachms to the pint of water) or tea should be employed. Diluted alcohol is the best lavage antidote against phenol; ferric hydrate and magnesia, the best against arsenic; white of egg (one to every four grains), for bichloride of mercury; cobalt nitrate in water, for cyanides; common salt solution, for silver nitrate; starch water, for iodine; weak copper sulphate solution (three grains in a pint) for phosphorus; very weak ammonia water, for formaldehyde; albumen water or eggs and milk, for most metallic salts; lime water, for oxalic acid and oxalates; and a solution of baking soda, for zinc and copper salts.

In the case of corrosive acids and caustic alkalis threatening perforation, lavage may be dangerous, and it is often better to rely upon dilution and the administration of the proper antidote—fixed oils and fats for alkalis; mild alkalis (preferably milk of magnesia or lime water) for the mineral acids. In any event, the later treatment includes soothing the stomach by hot water compresses and demulcent drinks (linseed or slippery elm tea, albumen water, diluted mucilage, etc.). Olive oil, castor oil, and other fixed oils and fats (butter, lard) are indicated in most cases (excepting phenol and phosphorus) to serve as laxative demulcents. Apomorphine hypodermically and mustard, ipecac, or zinc sulphate by the mouth, are less efficient and desirable than lavage for evacuating the stomach. In a few special cases, lead poisoning and food poisoning, for example, the sulphate of sodium or magnesium is the purgative of preference. Resorption of poisons is prevented in a measure by frequent catheterization of the urinary bladder and by colon irrigations.

In poisoning by the active principles of plants, the oral or hypodermic use of the indicated physiological antagonist is in order, taking care not to give doses so large as to substitute one kind of poisoning for another. Among the most useful of these remedies are: Caffeine for opiates, nitroglycerin, for chloral; atropine for digitalis, eserine, chloroform, mushroom, and ptomaine poisoning; pilocarpine for belladonna; strychnine and ammonia for alcohol, cocaine, aconite, and coal-tar antipyretics; morphine for gelsemium and cocaine.

Purely symptomatic treatment is frequently indicated in cases of acute poisoning. Free blood letting in fresh air is probably the most effective measure in carbon monoxide poisoning. For the pain and shock of irritants and corrosives, the hypodermic use of morphine and atropine and the application of hot compresses and water bags will do most good. Protracted nausea and vomiting are best controlled by an ice bag on the epigastrium. Chloroform inhalations are the surest means of suppressing convulsions, but morphine hypodermically and chloral in milk per rectum are efficient in the milder cases. To arouse a comatose patient, electricity and slapping the chest and limbs with cold wet towels are of some service, as is likewise the rectal injection of coffee, but walking the patient about may lead to dangerous exhaustion. The recumbent posture, indeed, is urgently indicated in all cases of poisoning by depressants, and artificial respiration may rarely avail as a life saving procedure.

METROPOLITAN BUILDING.

THE RELATION OF PREGNANCY TO CERTAIN CONDITIONS OF THE DIGESTIVE ORGANS.*

By A. L. BENEDICT, A. M., M. D.,
Buffalo, N. Y.,

Consultant in Digestive Diseases, City and Columbus Hospitals,
Attendant, Mercy Hospital; Editor, *Buffalo Medical Journal*.

One of the early manifestations of pregnancy is a rather vague disturbance known as morning sickness. This has never been thoroughly studied from the standpoint of gastroenterology, as it is not usually serious enough to warrant consultation, or is not so regarded when it really is; as charity patients do not usually seek hospital care early enough, and as there is a contraindication to the use of any means that might disturb nutrition or possibly set up premature uterine contractions. In its most typical form it is probably a reflex motor phenomenon, due to the accumulation of saliva and mucus, there being no isochymia, continuous secretion of true gastric juice containing hydrochloric acid by an empty stomach, or evidence of fermentation.

In a recent patient, two months pregnant, with vague gastric symptoms, aside from nausea, the chyme one hour after the standard test meal of fifty grammes of bread, five of butter and 250 of water, amounted to about eighty c. c., had a total acidity of about fifty degrees and free hydrochloric acid (to the first color change with dimethyl) of about twenty-five degrees, in fact the entire examination resulted normally. In another case, of a young single woman, morning sickness began very shortly after the first missed menstruation. The patient was unusually intelligent and so thoroughly informed according to modern ideas of sexual education that it was difficult to understand how she could have been seduced, and, when seduced, impregnated. In fact, I am inclined to regard as her real seducer, not her lover, but an osteopath who had previously given repeated intravaginal massage for dysmenorrhea. The patient herself expressed the opinion that she had morning sickness simply because she had heard so much about it—in other words that it was merely the result of auto-suggestion.

True hyperemesis gravidarum is obviously a gastric reflex rather than a genuine digestive disturbance. Yet lavage may be effective, just as it sometimes is in obstinate singultus, by inducing local fatigue, mental impression, etc. In so far as hyperemesis is due to a toxic state, lavage also may be considered rational treatment as it has been demonstrated that the uremic poisons, morphine, etc., are eliminated into the stomach and may be thus removed.

Intermediate between morning sickness and hyperemesis, there may be various gastric perversions, either merely intercurrent or antecedent to the pregnancy or more or less directly related to the latter. With due caution not to introduce excitoreflex factors, and with caution not to neglect conditions of importance through timidity, these should be investigated and treated as in the nonpregnant

patient. Here, it ought to be said that the stomach tube is no more a badge of digestive specialism than the catheter is of genitourinary specialism or the forceps of dentistry. While there is no one gastric condition characteristic of pregnancy, probably the commonest one is catarrh, with diminished hydrochloric acid, mucus, moderate lack of proper motor power, fermentation of carbohydrates, and interference with normal gastric digestion, and even the introduction of colon bacilli by aspiration of bile and intestinal contents through retching.

In the majority of cases, morning sickness comes to the attention of the gastroenterologist in consultations with special reference to diagnosis. Naturally and properly, the attendant does not help, perhaps deliberately tries to throw the consultant off the track, in order to get an independent opinion. In multiparæ, early diagnosis of pregnancy is difficult for physical reasons but, excepting in widows, the history can be elicited freely while, in many primigravida, the reverse is the case. In a case occurring in the practice of a friend, the symptoms were so suspicious of pregnancy that the question was put to the girl; who gave the assurance that this was impossible. Later, the existence of pregnancy became clear and the girl, taken to task for asserting virginity, explained that she had been assured by some friend that impregnation could not occur if she consorted with three men, and that her declaration was based on this belief and was not intended to deceive. In a case of a girl of fourteen years, the gastric disturbance was of less importance than the anemia. The mother declared that the girl was scarcely out of the home except when at school and it was thought best to leave the matter undecided. After the fifth suppressed menstruation, the mother gave sixty c. c. of a ten per cent. spirits of pennyroyal, which produced a beautifully complete abortion, without the least toxic symptoms. The ultimate explanation was paternal incest, dating back farther than the child could remember. Such tragedies as these, contrasted with numerous cases in which our suspicions have proved to be unfounded, place the consultant in a very unenviable position of vacillating.

The fact that morning sickness is familiar to all should not make us feel that we understand it. It is not necessarily encountered in pathological cases analogous to early pregnancy; it may occur so soon after conception that it is difficult to imagine an adequate excitoreflex cause; it is usually over before either mechanical or chemical or nutritional effects of pregnancy are quantitatively important. Indeed, it is frequently followed by better health and nutrition than has ever before been experienced, and some women say they are never well except when pregnant.

True hyperemesis is not thoroughly understood, and probably cannot be referred to a single pathogeny. Yet it occurs at a time when and usually under circumstances in which a marked reflex may be considered logical, on account of the marked mechanical and metabolic disturbances. As is well known, hyperemesis may follow an ordinary morning sickness without an appreciable intermission.

It would be interesting to discuss the thyroid and other ductless glands in their relation to pregnancy

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and in their interrelations; icterus gravis, true fatty metamorphosis of the liver; intrinsic, renal, nervous, and possibly other types of eclampsia; dextrostruria and other glycosurias, disturbances of glycogenesis and glycolysis; and various other complications of pregnancy, probably of a chemical nature. In passing these with mere allusion, I make no pretense of sparing you fatigue. Any one who could elucidate these metabolic conditions would be amply justified in holding you till morning.

The purely mechanical features of pregnancy should not, because of their familiarity, cease to arouse our wonder and stimulate our investigation. Including the fetus, liquor amnii, placenta, and hypertrophied uterus, we have a fifteen to twenty pound tumor developing in nine months. This is far beyond the average, either of gross weight and bulk, or of rapidity of growth, of any pathological neoplasm. The sudden disappearance of the greater part of the tumor and the rapid absorption of the remainder, the hypertrophied uterus, also involve disturbing factors, largely mechanical, quite analogous to those involved in the artificial extirpation of neoplasms approaching the maximum. These processes occur much more frequently in immature females than do somewhat analogous processes due to neoplasms and fluid accumulations. The repetition of these processes in the same individual has no analogue in the case of neoplasms and scarcely any among other forms of pathological accumulation, excepting in certain transudations.

The nutritional improvement frequently noted during pregnancy is usually attributed to the stimulus necessary for the growth of the fetus, the response being sufficient to improve the mother's condition also. A comparison may be made to the action of a sudden demand on a man's resources, leading to exertion and development of latent powers to such a degree as to make him successful in business. The common explanation is probably correct in most cases, though we should recognize the fact that the procreative period is also the one in which single women and men often gain health and strength far beyond the promises of a puny childhood and feeble adolescence. The exercise of prudence in eating, exercise, dress, etc., for the first time in the life of a formerly careless girl, is also a simple explanation not to be overlooked.

There is, however, a mechanical explanation which certainly applies to many cases. Many slender, poorly developed, lean girls, subject to all sorts of trivial ailments and never strong have upright stomachs, loose kidneys, prolapsed colons, etc. The gradual enlargement of the uterus acts as an intra-abdominal pessary, far superior to any external support or operation. The opposite type of broad waisted, flabby women, with splanchnoptosis, even if due in part to previous pregnancy, is equally benefited by such support. In the former type much of the general depression of health is due to inadequate room for important vital organs. Pregnancy gradually dilates the abdomen, while the temporary support afforded by the uterus allows several months of good nutrition to result in the deposit of fat so as to counteract the splanchnoptosis, to a large degree permanently. In the latter type the flabbiness persists, and we get the history of well

being limited to middle pregnancy. In this connection it must not be forgotten that abdominal support and intraabdominal tension are not limited to the mere holding of a given organ in a given place. They involve support to the portal circulation also, and hence to a great variety of secretory, excretory, and nutritive functions.

Within the last few years, the development of endoscopy has greatly extended the field of local therapeutics and of diagnosis by inspection. The sigmoidoscope has brought at least the lower foot of the bowel under direct control and has done away with much glittering generality regarding colitis, chronic constipation and diarrhea, pelvic congestion, autointoxication, and dyspepsia. The more it is used, the smaller becomes the percentage of failures to pass this instrument, and the more justification do we find for passing it in obscure cases. Do not, however, understand me as advising its use as a routine. That would savor too strongly of the extreme views regarding the use of the stomach tube, eye strain, arteriosclerosis, uric acid, etc.

In a case of diarrhea of eight months' duration in a woman of thirty-five years who had borne three children, the diarrhea beginning with some trivial indiscretion of diet and almost totally incapacitating the patient, the suggestion to use the sigmoidoscope was opposed by the attending physician on the ground that the diarrhea must be due to some condition higher than the large bowel. There had just been demonstrated an achylia gastrica and we all know that imperfectly digested chyme entering the small intestine, is a logical cause of intestinal indigestion. But we are growing sceptical of physiological theory, and the facts are that achylia does not present typical symptoms, that it is usually discovered by routine examinations without previous suspicion of the nature of the case, that, while it may occur *with* intestinal indigestion, pernicious anemia, and the various other conditions that logically ought to depend upon it, it often is encountered in persons of good general health, and the general health of achylic patients may be fully restored without resumption of gastric digestive power. Empiric experience has also taught me that occult blood in the feces may come from a point as low as ten inches above the anus, that a considerable degree of organic stricture may, by subsequent retention and moulding of soft feces yield full sized evacuations, while tapelike and wormlike feces may be due to transient functional constriction. Various other points in opposition to theory might be cited. Therefore, with no good argument against the logic presented, the sigmoidoscope was passed, various spots of inflammation and erosion were found, touched with five per cent. protargol, and the diarrhea was practically controlled within a week.

These conditions, though by no means confined to parous women, are so frequent after the bearing of one or more children that I cannot avoid the conclusion that they are due largely to uterine pressure upon tissues subject inevitably to chemical and bacterial irritation, these latter conditions being obviously increased mechanically by pregnancy. It is also significant that the cases in which one fails

to get the long speculum through the rectal valves, or above the six inch level at which they are located, are most frequent among parous women, and that this level corresponds approximately to the sacral promontory against which the uterus presses most upon the bowel.

It is also highly probable that, by penetration of septic material, perhaps long after delivery, these same inflammatory and ulcerated areas give rise to deep sinuses and fistulae. In passing, we may note that the word *fistula* is often used for this region where the term *sinus* is more appropriate.

The gastroenterologist is learning to place more and more emphasis on the latter part of his compound title. For example, in a hundred new cases in serial order, just twenty per cent. were really stomach cases, over fifty per cent. essentially bowel cases, the remainder including the esophagus, liver, pancreas, etc. Let us now consider the termination of the bowel. Barring babies, persons overcome by some serious sickness, certain neurotic cases, and organic lesions pretty strictly of a surgical nature, most cases of incontinence are due to lacerated perineum. Even if there is no lesion other than the muscular defect, the condition is of the utmost importance. It is easy enough to speak of it as trivial, as not endangering life, as interfering only with social matters, etc. But social life, in the broad sense, is the object of business and organic life. A woman who is a nuisance to herself and others is liable to the gravest domestic disaster, if solitary and more or less dependent, she is often prevented from having a home; if forced to earn her living, she finds it difficult to obtain and hold employment.

Nor can we accept the optimism of some surgeons who state that even a neglected perineum is amenable to radical cure. A torn and neglected sphincter is not simply a doughnut with a bite taken out of it. It atrophies, and the extrinsic, supporting perineal muscles atrophy from disuse, owing to the inability to obtain continuous annular support for contraction. Both common sense and actual experience show that late plastic operations, when there is practically no perineum, merely a little skin, connective tissue, and wisps of muscle fibre, are not usually successful.

Aside from the direct muscular failure resulting in incontinence, the instability of the perineal floor implies poor circulation, lessened resistance to infection, increased liability to practically all other lesions of this part, and, so to speak, lack of standing room for the various procedures which the latter require.

For example, in 1903, a woman with torn sphincter and skin thick perineum, dating back seven years, consulted me on account of tuberculous anal fistula. The only feasible operation was to gnaw away the diseased tissue, relying largely on the ear spoon of a pocket case, and apply corrosive antiseptics. The result was a radical one so far as the fistula and the tuberculosis were concerned. Later, a competent surgeon—the slur on myself is intentional—repaired the perineum, getting what he considered a good result in the way of retention of feces, but the patient can see only a slight mitigation. Since then another child has been born, and

the sigmoid conditions which were undoubtedly present after the first pregnancy, but not clearly recognized by me, have been exacerbated.

It must be admitted that a torn sphincter does not interfere much with either radical or palliative or curative local treatment of piles, though one must be exceedingly careful in the preliminary dilatation of the sphincter. But it prevents a confident favorable prognosis, as fresh hemorrhoids tend to develop. The Whitehead operation seems appropriate, but there are many objections to it.

In the case of complete fistula—and we need not argue as to whether it is always tuberculous or not—torn sphincter and perineal atrophy complicate the matter seriously. To cut through and let the tract heal by granulation impairs the sphincteric control still further. More complete destructive and suturing operations are difficult, partly on account of the narrow margin of sound tissue, and because the habit of incontinence seems to render difficult the regulation of the fecal flooding of the field of operation.

We must not forget, meanwhile, that the perineal laceration and atrophy tend to induce distinctly pelvic displacements, which react upon the abdominal organs and upon the general health. With the perineal floor sprung, there is likely to be what may be termed internal enteroptosis, as opposed to external enteroptosis, which also depends largely upon pregnancy, through the production of diastasis of the recti and abdominal flabbiness. In such cases, there may literally be a pelvic colon. Normally, I am inclined to regard this modern term as a pseudonym for the upper rectum, and the last part of the sigmoid. So far as can be judged from a limited experience at necropsies, there is no normal pelvic colon in any essential sense.

I must admit a rather conservative view of enteroptosis. The intestines, with the exception of a few parts, have no definite location, and naturally gravitate and squirm into various positions and must inevitably accommodate themselves to the shape and relations of the abdominal cavity. Nor do I believe that the term enteroptosis implies a general splanchnoptosis. (Just in parenthesis, let us register a protest against the miserable mongrel term visceroptosis.) Ptosis of the liver is exceedingly rare. Ptosis of the kidney seems to date from puberty or possibly earlier, and not to depend upon strains and apparent loss of support. Gastroptosis is quite common, but the term is often falsely applied to sagging of a moderately dilated stomach. None of these ptoses seem to depend materially upon uterine ptoses, including prolapse, procidentia, flexions, and versions. But this admission does not imply a disbelief in the harmful effects of pelvic displacements due to perineal defects or other conditions. The portal circulation is impeded, congestion tends to cause faults of secretion and absorption, hence fermentation and putrefaction tend to occur in excessive degree, colon bacillus virulence plays a large rôle in gallstones and pancreatic disease, while indol has been shown experimentally to cause hepatic sclerosis. The essential etiological factor in what is commonly termed appendicitis, is this same heightened bacterial activity. While the

relation of lacerated perineum to alimentary cancers, ulcers, achylas, etc., is far fetched, it may nevertheless be genuine.

I would conclude, therefore, with an urgent appeal for immediate repair of the perineum whenever possible, and for secondary repair as early as possible, certainly before marked atrophy has taken place.

354 FRANKLIN AVENUE.

THE TEACHING OF PULMONARY DISEASES.

BY JOHN B. HUBER, A. M., M. D.,
New York.

Professor Pulmonary Diseases, Fordham University Medical School;
Visiting Physician, St. Joseph's Hospital for Consumptives.

By way of foundation for the teaching of the diseases of the lungs and the pleura, I emphasize, in my teaching at Fordham, the essential anatomy and physiology of these organs and tissues; and I require also that the student be proficient in the topography of the chest wall. I next outline an anamnesis, the history taking, to include the following data:

Diagnosis: Date, address, name, sex, color, nationality, height, normal weight, weight on examination, environment, alcohol, tobacco habits, family history, previous history, and beginning of present illness.

Symptoms: Cough, sputum, hemoptysis, dyspnea, temperature, pulse, respiration, chills, night sweats, pain, sleep, throat, digestion, menses, laboratory and special tests, reactions, complications, intoxications, nervous system, circulation, genitourinary system, bones and joints, lymphatics.

Preventive measures, treatment: Rest; hygiene; diet; medication.

PHYSICAL DIAGNOSIS. I. *Inspection:* Color of skin—blanching, cyanosis, pigmentation, icterus; shape of chest—dilatation, contraction, local depression; irregularity of chest expansion; frequency of respiration.

II. *Palpation:* Inequality of chest expansion; vocal fremitus—increased, diminished, absent. Pleural fremitus. Bronchial fremitus.

III. *Percussion:* Dullness; flatness; tympanic resonance, vesiculotympanic resonance; cracked pot resonance.

IV. *Auscultation of breathing:* Intensity—exaggerated, diminished or absent; rhythm interrupted; expiration prolonged. Quality—rude, bronchial, cavernous, amphoric.

V. *Auscultation of voice and whisper:* Diminished intensity—weak, feeble or absent. Increased intensity—exaggerated, bronchophony, pectoriloquy, egophony.

VI. *Mensuration.*

VII. *Succession.*

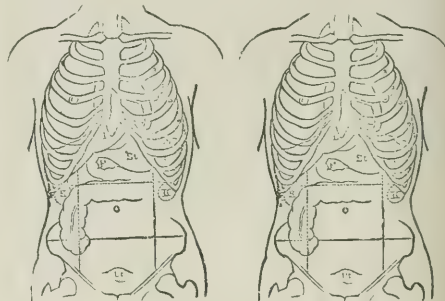
VIII. *Râles:* Dry—sonorous, sibilant, moist—mucous, crepitant, subcrepitant, gurgles, mucous click. Pleural and various.

HISTORY TAKING.

Such a history blank as the foregoing may be printed upon cards, allowing the proper blank spaces to be filled in by the diagnostician, for use as a card system. My own case histories are made on printed cards (containing the salient points here given) four by eight inches, fitting exactly into one of my desk drawers. A card has on one side the memoranda of the first consultation, and on the other those of subsequent examinations, generally monthly; with this card is clipped another, on the physical diagnosis, used in the same way. Upon the physical diagnosis card are stamped diagrams of the chest, as shown below.

Denote cavities and dense consolidations by heavy shading; infiltrations by light shading. If it is well defined, bound the cavity or the consolidation. Indicate fine râles by pin point dots; the grosser râles by large dots, or minute circles. A multiplicity of signs is inadvisable. History cards are to be had (eight by eight inches or thereabout) for use in especially prepared files.

Overlaboration, undue complication, and the printing of a multitude of headings, is inadvisable. Any such scheme as that above given must necessarily be rather suggestive and connotative than exhaustive. The headings should stimulate the examiner to elicit many details beside those especially called for. The history blank has not been invented that can include every possible question. In noting, for example, if the patient is married, we inquire if the wife is ill, etc. In noting the occupation we learn if it is a dangerous trade, if the patient is able for his work, or if it exhausts him unduly. In stating the previous history we should be greatly impressed to know of gland and joint disease in childhood; we ask when is the cough most severe; is the dyspnea nocturnal or on exertion? In considering the throat we note if there is hoarseness.



Diagrams of the chest.

In a consideration of digestion we should note appetite, the condition of the stomach and bowels, beside every other possible sign, from the teeth to the sphincter. A test of the stomach contents is desirable in most consumption cases.

Beside the ability to glean information, three traits are essential in the examiner—the selective faculty, good judgment, and intuition. The student who lacks in these should strive to cultivate them. We must collect the symptoms by careful note taking of all the ascertainable facts in a given case, otherwise no reliable scientific deduction can be made. In diagnosing tuberculosis, for example, an examination may require a full hour. If the patient (who, not being a physician, does not understand why it should take so long to reach a conclusion) tires, as much as can be ascertained should be got at first, and the anamnesis completed at a subsequent visit.

We must next survey broadly the whole case history, and must be able to discriminate between essential points and those which bear little or not at all upon the question. Then we must reach conclusions from a judgment of many factors, one

among which might be irrelevant; several of which, taken together, would be suggestive; a number combined would establish the diagnosis beyond doubt. Intuition—the sensing of a physical condition—is generally instinctive, born in one; but this faculty can, and should be developed in the practitioner.

THE PHYSICAL SIGNS.

The student is strongly advised to copy the foregoing scheme of physical examination in a vest pocket memorandum book, and to memorize it so perfectly that every detail will spring at once to mind, no point being missed, and the data succeeding each other seriatim and without omission. He who begins rightly here, will have little trouble afterward.

It is imperative to become familiar with the normal chest before studying the pathological signs. Except the râles (which are the adventitious sounds, because they are never heard in health), almost all the other physical signs of pulmonary disease are found in the normal chest; the signs are pathological only because they are heard over areas where they would not normally be heard. For example, slight fremitus is heard and felt over the right upper chest anteriorly, because the right bronchus leaves the trachea at more nearly a right angle than does the left, so that the air in passage vibrates more; dullness is normal over the heart, but when found over the upper pulmonary lobe, it indicates a consolidation lesion or a cavity; flatness is normal below the seventh rib on the right side, because the liver rises behind the right lung in that region; but flatness at the second or third or fourth rib would indicate a pleural effusion. So, a sound is pathological when it is not the natural sound of that part of the chest.

Therefore, for a preliminary to the study of pulmonary lesions, I earnestly urge the student to examine the chests of his fellow students, and to give the latter a reciprocal opportunity, so that the physiological phenomena in the chest may be thoroughly learned and appreciated.

The student should purchase a stethoscope with care; the ear pieces should fit into the external ends of the aural canals. Sometimes students buy instruments that do not communicate with these canals at all. The phonendoscope is also an excellent instrument, more acute than the stethoscope; however, it gives the sounds a metallic character. We must insist always on a thorough examination: in women one region after another may be uncovered. The corset must be removed. Women may sit on a revolving stool during examination.

The two sides of the chest are almost never perfectly symmetrical; there is generally a slight curvature of the spine.

In palpation the hands or the fingers are evenly applied to the chest surface; and here, as in the physical examination generally, the two sides of the chest are examined together, in order to get "relative" signs. My own preference is to use the right hand alone, first on one side and then quickly on the other; but both hands may be used simultaneously.

Increased vocal fremitus is a tremulous vibration felt over solidified portions of the lung in tuber-

culosis, pneumonia, or edema; diminished or absent vocal fremitus occurs when the pulmonary tissue is separated from the chest wall by gaseous or liquid accumulations in the pleural cavity, and in emphysema by reason of the dilated air vesicles. Pleural or friction fremitus is due to the friction of two roughened pleural surfaces in plastic pleurisy. Bronchial or sonorous or rhonchial fremitus is found in bronchitis.

Mediate percussion is that generally employed. The middle finger is most always used; it is gently but firmly and evenly pressed upon the region to be percussed, as if it were for the time being a part of the patient's body. The tips of the fingers of the other hand (most use the right hand) are then tapped, at first gently and then forcibly, especially for deep seated lesions. The striking hand is worked from the wrist, like the percussing mechanism in a piano. The bare skin is best for percussion, or a thin undershirt of noncrackling material may be worn.

We must percuss with equal force the two sides of the chest, for comparison, at the same stage of the respiratory act, in inspiration or in expiration; and we must compare only corresponding portions. A note during inspiration on the right must not be compared with a note during expiration on the left.

In the percussion note we seek to ascertain the intensity, pitch, quality, and duration. Intensity is increased or diminished by the force of the percussion stroke, by the amount of air contained in the lung tissue, by the thickness of the soft parts covering the ribs, and by the elasticity of the costal cartilages. The pitch is always low over healthy lung substance; the more air in the corresponding pulmonary tissue, the lower the pitch; thus the pitch varies in the different regions of the chest. We must learn to detect abnormal pitch by first familiarizing ourselves with the normal variations. The quality is the element in sound by which we distinguish one sound from another. The duration of a given sound generally varies according to the pitch of that sound; the higher the pitch, the shorter the duration, and *vice versa*. Those who are familiar with orchestral concerts will know, for example, that the bass viol gives a note of great intensity by comparison with the flute. The pitch is alike for all instruments if they play in tune; they must conform with the key in which the composition is to be played. The key of C, for example, is lower pitched than that of F of the same scale. The quality of the cornet is harder than that of the violoncello. The note F, struck on the piano, is of shorter duration than the lower pitched note C.

Dullness gives diminished intensity, a raised pitch, the quality hardened, and the duration shortened. (Students are sometimes puzzled by "raised" pitch in dullness; by comparison with the normal percussion note, the dull note is raised.) We get dullness over the heart normally. Flatness indicates total absence of air; here the intensity is short, the pitch higher than in dullness, the quality hard, and the duration short. We get this note over the thigh. The tympanic note suggests fullness; it is increased in intensity, is lowered in pitch, has not the normal pulmonary (vesicular) quality, but rather

that of an abdomen distended by gas; when heard over the chest, it denotes air in the pleural cavity (pneumothorax). The vesiculotympanic note is more intense and lower pitched than the normal note; it has both the tympanic and the vesicular (normal pulmonary) characters. It is most characteristic in emphysema. It may be heard over a large superficial cavity having thin, tense walls, as in tuberculous. Cracked pot resonance is often heard in connection with amphoric breathing, and when a large, thin walled, pulmonary cavity communicates freely with a large bronchus. It resembles the sound produced by striking the moist palms, loosely folded across each other, upon the knee.

Auscultation, as Professor Loomis well observed, is a kind of eavesdropping; "for in it you bend your ear to catch the significance of sounds that come from hidden quarters which no one may open." Here we use the stethoscope, or the ear over a cloth. The patient should at first respire ordinarily; then he should take a full inspiration, cough, and then breathe again naturally. In auscultation we consider also intensity, pitch, quality, and duration; and to these elements of sound we now add rhythm, which last refers to the relative succession of the two periods in the act of breathing.

Exaggerated breathing differs from the normal only in increased intensity and duration; diminished or feeble breathing differs from the normal (or vesicular) breathing in diminished intensity and duration. Absent or suppressed breathing occurs when the play of the lung is suspended, as when the lung is pressed against the spinal column by fluid or air in the pleura, or when a completely obstructed bronchus prevents the air from either entering or leaving a given area.

Interrupted rhythm, or "cog wheel respiration," is jerking in character and is found in asthma, pleurodynia, the first stage of pleurisy, and incipient phthisis. In prolonged expiration the normal ratio between inspiration and expiration may double or treble in time that of inspiration; it is always due to want of freedom in egress of air from the lungs. In rude breathing respiration has lost its natural softness; the breezy character is lost; the sound is higher pitched; the expiration is more intense, higher pitched, and of longer duration than the inspiration. This breathing always indicates more or less lung consolidation; it embraces every degree of modification between the normal breath sounds and complete bronchial (tubular) respiration.

Bronchial or tubular breathing is most important to study by reason of its frequency and its significance in disease. The inspiration is high pitched and tubular; the two sounds are separated by a brief period; the expiration is still higher pitched and more intense than the inspiration, as long or longer and of the same tubular quality. Bronchial breathing, heard when we should hear normal breathing, evidences consolidation. Cavernous breathing has on inspiration a soft blowing, low pitched, nonvesicular sound; the expiratory sound is lower pitched than the inspiratory and always prolonged and puffing. It indicates a large empty cavity near the surface, having free communication with a bronchus; the walls of such a cavity must

be so flaccid as to expand on inspiration and collapse with expiration. Amphoric breathing is as when we blow gently into the mouth of an empty bottle; there is a musical intonation or metallic quality; this breathing is found with phthisical cavities, or when, in pneumothorax, a bronchus has opened into the pleura.

In auscultation of voice and whispers we instruct the patient to say, slowly, "1, 2, 3," or "99." The voice sound is weak or feeble or absent in pneumothorax and in large serous effusions of the pleura. The voice sounds are exaggerated where there is a moderate amount of solidification. Bronchophony is normally heard at the upper part of the sternum and between the spines of the scapulae; in other regions it denotes disease. It is of greater intensity and of higher pitch than normal; and is of vibrant quality. It has the same significance as bronchial breathing; it is heard best in the second stage of lobar pneumonia.

Pectoriloquy resembles the normal resonance over the larynx; it is like an exaggerated bronchophony, and is not a common sign; it may indicate a pulmonary cavity. Egophony suggests the bleating of a goat; it is also a modification of bronchophony, and is rarely heard; it may suggest a pleural effusion over solidified lung tissue.

The exaggerated differs from the normal whisper in greater intensity and higher pitch; it indicates slight solidification. In whispering bronchophony the blowing sound is intense, the pitch high, the sound seems near the ear, and consolidation is indicated. In whispering pectoriloquy the words are distinctly audible at the surface of the chest—a good indication of a cavity.

The cough of the laryngeal or tracheal region is hollow, and varies in pitch and intensity with the individual voice. The bronchial cough has a quick, harsh character, with marked fremitus. Cavernous cough is hollow, metallic, sepulchral, perhaps accompanied by gurgles. Amphoric cough has a loud resounding and metallic sound, not forcibly transmitted to the ear, and conveying the impression of a large, empty space.

Mensuration is most conveniently done by the tape measure. We ascertain the comparative level of the two sides; and the amount of expansion and retraction accompanying inspiration and expiration of the two sides. We measure on the level of the sixth costosternal articulation. The average circumference in the adult is thirty-two and one half inches. In the right handed the right side is about one half inch larger than the left, and *vice versa*. We expect on full inspiration a normal expansion of about two inches. A pleural effusion may give an excess on the diseased side of several inches over the unaffected side.

Succession is a sudden, forcible shaking of the patient, with the ear applied to the chest wall; the sign is evident practically only in hydrothorax or pyopneumothorax. The sound is as if one shakes a partly filled bottle close to the ear. It is gurgling and splashing; it is almost always accompanied by amphoric breathing and metallic tinkling. This latter sound is like the dropping of a pin or a small shot into a metallic vessel; it has been described by Dr. Joseph Walsh as the echo of a bubble bursting

in a liquid, shut up in a spacious cavity which also contains air.

The râles, or rhonchi, are adventitious sounds, because they are never heard in health. The high pitched whistling râle is the sibilant, the low pitched and snoring sound is the sonorous râle. The crepitant râle consists of a series of minute, crackling sounds, heard only at the end of inspiration; it characterizes the first stage of pneumonia, congestion, and edema. The subcrepitant râle is a moist bronchial sound caused by the breaking of minute air bubbles of equal size and comparatively few in number; it is found in the smaller bronchi, and the liquid through which the air passes may be mucus, serum, pus, or blood. It is heard both in inspiration and expiration, in a number of lesions, markedly in tuberculosis. The mucous râle is produced in the same way as the subcrepitant; it is found in the larger tubes. It is heard in inspiration and expiration, and is modified or entirely removed by coughing; it is heard whenever the tubes become partially filled with liquid of any kind. These râles, restricted to an apex, indicate a tuberculosis. Gurgles are produced in cavities partially filled with liquid, below the level of which a bronchus freely opens; the sound is due to the bubbling of air up through the liquid. When cavities exist without gurgles, we may infer they are filled with liquid, or that they contain no liquid, or that the level of the liquid is below the opening of the bronchial tube. The mucous click is a single, quick sound, not removed by coughing, due to the sudden and forcible passage of air through a small bronchus, the sides of which have been brought together at one or more points (either by external pressure or by agglutination from within). It is an important sign in incipient tuberculosis. Pleuritic friction sounds are abrupt, jerking, grazing, grating, creaking or crackling, superficial sounds varying in intensity, heard both in inspiration and expiration, and due to the rubbing upon one another of the inflamed surfaces in plastic pleurisy. Sometimes these friction sounds are attended by sounds resembling râles, which latter are of two kinds; creaking râles heard at the apices produced by pleuritic adhesions or by crepitation in lung tissue; or dry crumpling sounds, resembling those produced by inflating a dried bladder, and probably due to the forcible distention of a large air space in emphysematous lungs.

40 EAST FORTY-FIRST STREET.

THE INSURABILITY OF WOMEN.*

With Special Reference to the Effects of Major Operations.

By T. HEWSON BRADFORD, M. D.,
Philadelphia,

Medical Director of the Philadelphia Life Insurance Company.

That women should have the privilege and benefit of life insurance has been a subject of much interest to me. In 1905, I had the honor of reading before this association a paper on Women as In-

surance Risks; in 1906, at Boston, before the American Association of Medical Examiners, one entitled, Are Women as Insurable as Men? It is my intention to embody some of the facts therein contained, with the addition of the effects of major operations. This is an extensive field, and to enhance the interest of the subject the opinions and experience of some well known surgeons and gynecologists, as well as those of several medical directors of insurance companies, have been obtained.

The question regarding their fitness, pro and con, must be considered. For many years the leading insurance companies of this country and abroad hesitated to accept women as risks, some refusing absolutely to consider them upon any plan, and others upon terms which were almost prohibitory. With experience and a more thorough knowledge of statistics, many of these objections have been modified, and others entirely eradicated.

Statistics having proved that the majority of sudden deaths from internal or pathological causes to be in men, and the greater tenacity of life in women, it seems remarkable that companies should have ever refrained from accepting women as risks. Thrift, forethought, economy, and prudence in management of details have long been qualities and characteristics of women, and the introduction of them as risks in life insurance conduces to confirm and strengthen these qualities and fosters true motherhood in securing to their progeny the means to avoid cares and trials, which, but for their foresight, would surely be the lot of the family.

Environment as a factor in life insurance is happily for most women more healthful, comfortable, and sanitary; as a class, womankind is less exposed to dangers and accidents; as a rule, their lives are more sheltered, and the temptations of life are less. The vices to which men are addicted are rarely followed or practised by women, although, unfortunately, such sometimes is the case, but elimination among the latter of the excessive use of stimulants and narcotics is certainly conducive to longevity. Should a woman be physically affected by a life of dissipation, she never has enough money to keep her policy in force, indeed may scarcely be considered, although it is possible that her premium may be paid by interested friends.

On account of exposure to meteorological conditions and excesses in living, pneumonia is much more prevalent and fatal among men than women, and, for the same reason, typhoid fever. It is a fact, especially after the age of fifty years, nephritic and vesical diseases are more prevalent among men. Pregnancy and parturition are no longer looked upon as pathological processes, but are recognized as physiological events, as Nature decreed they should be. So puberty and the menopause, essential stages through which women must pass, are only serious periods because the fundamental laws of Nature are not strictly observed. How necessary it is for mothers and teachers to instruct young girls in the necessity for care, freedom from exposure and fatigue during the menstrual period! How very often pelvic troubles could be avoided and the ills of after life radically prevented if counsels and instructions of physicians and

*Read before the Philadelphia Medical Examiners' Association, March 5, 1912.

teachers were heeded! This is the age of advanced antiseptic surgery and obstetrics. The proportion of mortality in modern maternity hospitals is about one half of one per cent. One per cent. is about the mortality for parturition in cases well cared for.

Those seeking the benefits of insurance are principally hard working women with families depending upon them, or others having some means, who wish the insurance as an investment. These are generally robust and good "risks," so far as the usual examination can detect, but they may have incipient malignant disease of the cervix uteri or fundus or a fibroid, therefore the examinations should be more rigid than required by the usual blank. The interrogations should be most explicit. Great stress should be laid on the possible existence of any pelvic disorder, characterized by pain over the fundus or ovarian regions, the existence of leucorrhea, or tendency to amenorrhea, dysmenorrhea, and metrorrhagia. The waist of the dress, the corset, and such other clothing as may interfere with careful auscultation and percussion of the chest, must be removed, the shoulders and upper chest should be bared, permitting a thorough examination of the apices, for it is only by this means that the early symptoms of that great enemy of insurance companies, tuberculosis, can be detected.

Likewise over the abdomen the examination must not be made through a gauze undershirt, but percussion made over the parts when they are bare. Many a case of latent appendicitis can be detected by the existence of tenderness and induration over MacBurney's point, and by external palpation, the presence of uterine fibroids.

It is absolutely necessary to protect the companies from mortality among female risks that a vaginal examination be made. In risks when conditions exist detected by interrogations, such an examination should be insisted upon, for only thus can a salpingitis, pyosalpinx, fibroids, or a beginning malignant growth be diagnosed, for these may exist without the knowledge of the risk until they become painful, or tumors increase in size. It is my prediction that the day is not far distant when the examination blanks for the insurance of women will contain the clause requiring a vaginal examination. At first many women may demur, but a larger number would readily acquiesce if the requirements were printed upon the paper and they were made to understand how essential it was for their future welfare that the exact condition should be known.

In a woman over thirty years of age, if married, more importance might be placed on this examination than on the family history. In young unmarried women, with good records, this would not be necessary, but if their occupations subject them to temptations, examination should be made. Vaginal examination should be made, except when satisfactory evidence is furnished that the pelvic organs are sound. If there is any indication that trouble exists, and the risk declines the necessary examination, then rejection is the only alternative.

A fruitful source of many of the ills so prevalent in the female sex at the present time are the methods and practices so constantly employed to prevent conception, or the term so often quoted by one

who was once our Chief Magistrate, race suicide. This is becoming frightfully prevalent. You, as medical men, know too well what these disgusting practices are, so I shall not describe them; suffice it to say they have a most deleterious effect upon the individual mentally, morally, and physically, producing irritability of temper, melancholia, chronic invalidism, chronic oophoritis and salpingitis, rendering the marriage state most unhappy, and frequently terminating in divorce. Bad as this is, it is far worse when the fetus has become viable and abortion is induced. With a history of miscarriage or abortion a risk should not be accepted until a living child is born at term. With a history of repeated abortions the woman should not be accepted at all, for the cause may be very likely syphilis.

A widow whose husband has died of tuberculosis should not be accepted until two years after his death, and then only when there is no evidence of infection. Cancer as an hereditary factor must be closely investigated in women risks. This disease is far more transmissible in women than in men. To guard against fraud in the substitution of healthy for abnormal urine great care should be exercised, for this has frequently occurred.

Dr. Charles Lyman Green in his valuable work, *The Medical Examination for Life Insurance*, writes:

The female sex is not, as a rule, favorably regarded by insurance companies by reason of the following facts:

- A. Misstatements as to age are frequently made.
- B. Examinations are more superficially made in the case of women than of men.
- C. Very serious pelvic disease may exist without outward evidence, and women are especially prone to conceal vital facts bearing upon this point.
- D. Substitution of healthy for abnormal urine is very easily accomplished.
- E. Their insurance has been made in many instances a means of perpetrating a fraud and has been the cause of murder.

In reply to question A, close examination and inspection will discover that the wrong age has been given. B and C have been answered above, showing how important it is to have a vaginal examination. D can be prevented only by having the woman in a room by herself, care to be taken that she has only one vessel for use, and that the temperature of the urine is carefully observed. E is more difficult and could be prevented only by close inspection and investigation.

In the book of instructions issued by the Philadelphia Life Insurance Company is the following:

Women are insurable upon the same conditions as men: When they are wage earners and the beneficiaries are dependent upon them for support.

When applying for investment insurance.

If married, when their husbands are insured by this or some other company for an amount at least equal to that for which they are applying; or, if their husbands are uninsurable.

When business interests necessitate insurance.

We do not desire women recently married, engaged to be married, pregnant, or approaching the change of life. Applications should not be accepted from women on term plans.

Regarding major operations, we shall consider those belonging to the pelvic region only; those appertaining to other regions of the body would be rated the same as in men and are irrelevant to this paper.

With antiseptics and improved technique, abdominal operations, unless complicated by pneumonia or nephritis, have an exceedingly low mortality. In appendectomy women are considered in the same light as men, and accepted six months after the operation, but particular attention is paid to the abdominal eschar for any tendency to ventral hernia. This, however, is not so necessary as in former years for now the adaptation of the muscular fibres is more complete and perfect union the result.

When the uterus and annexa are removed before the climacteric an artificial menopause is established. This is very similar to the natural menopause with its various neurotic phenomena and vasomotor disturbance, but not so severe nor prolonged.

With excellent technique and no intestinal adhesions, the prognosis is most favorable to living out the expectancy, of course eliminating any suspicion of malignancy. Acute melancholia occasionally develops after an operation; it is believed to be more common after an ovariectomy, and has followed a repair of the perineum, but is of short duration.

Traumatic neurasthenia persisting after an operation may occur and exist for weeks or months. This condition tends to recovery. It may be suggested that the nervous shock incident to so severe an operation may be detrimental to the woman's health in the future, but could it be more deleterious than the fearful drain and apprehension from a bleeding fibroid, which at any moment may cause a frightful hemorrhage, imperiling life? They usually recover entirely from the shock at the end of six months.

My attention was called to this subject by a risk which Dr. S. W. Gadd examined for me several months since. The woman had been operated upon by Dr. Theodore A. Erck for a fibroid by hysterectomy; her recovery was uneventful and there were no undue symptoms of the menopause; at the time of the examination she was in perfect health in every respect. After consulting Doctor Erck she was accepted.

Some years since, while an examiner for one of the old line companies, I examined a very robust and healthy woman upon whom hysterectomy had been performed three years previously. The surgeon who operated upon her, Doctor Montgomery, told me that the operation was performed for a bad bilateral laceration of the cervix uteri, and as she was rapidly approaching the menopause, he advised total extirpation of the uterus and annexa. This was done with perfect success. The case with the complete history was submitted to the home office, but was not accepted; had this occurred at the present day, when we have more definite knowledge upon the subject, the company would probably have considered it favorably.

Conservation is the watchword of the hour. This is especially true in modern gynecology, for tubes and ovaries which a few years since were sacrificed or doomed to extirpation are now conserved. By these conservative operations the diseased portions of the ovaries and tubes are dissected out, and the healthy tissue is permitted to remain. These abdominal section cases may be rated as to assurance in the same class as that of appendectomy.

That I might give you the result of knowledge and experience of prominent surgeons and gynecologists to whom I had written regarding the prognosis of hysterectomy in cases of fibroids, pyosalpinx, hydrosalpinx, and other causes, with the exception of malignancy, I received replies from the following eminent men: Dr. Howard A. Kelly, Dr. Barton Cooke Hirst, Dr. John Montgomery,

Baldy, Dr. E. E. Montgomery, Dr. W. Easterly Ashton, Dr. George M. Boyd, Dr. John B. Deaver, Dr. Theodore A. Erck, and Dr. John G. Clark, and the following medical directors: Dr. Frank Wells, Dr. Harry Toulmin, and Dr. Charles H. Willits.

Howard A. Kelly, M. D., professor of gynecology in Johns Hopkins University, writes:

In an experience of considerably over 1,600 cases of fibroid tumors, and an equal number of pyosalpinx and hydrosalpinx, I have found that where a complete operation is done and the patient makes good, immediate recovery, without signs of intestinal adhesions and without any evidence of injury to a ureter or its constriction by ligature, the recoveries are complete and life continues on to its natural termination. In other words, with the removal of the disease an obstacle and hindrance to life and the continuance of life is removed, and the patient is then able to live out her natural term. I am certain that the removal of this disease *per se*, including the removal of these organs, has no relation whatever to the length of life.

Barton Cooke Hirst, M. D., professor of obstetrics in the University of Pennsylvania, writes:

It would be impossible to give you accurate figures about hysterectomy for causes other than malignancy without going over the records of something like three thousand gynecological patients, but I can say this: The primary mortality of the operation has been reduced to about one per cent, or less in my hospital service and the only risk to life that the patient has later is in intestinal adhesions and a possibility of obstruction of the bowels in consequence.

With the improved technique of sewing the stump, I think this difficulty is practically excluded. Even in former years when the technique was not so good, I know of only one case in which there was a death from this cause some years after the operation.

John Montgomery Baldy, M. D., professor of gynecology in the Philadelphia Polyclinic, writes:

In fibroid tumors of the uterus, pyosalpinx and hydrosalpinx, provided the operation is safely performed, there is no intrinsic mortality at all. If nothing else supervened the patient would live forever.

In individual cases, however, where a patient has bled to death almost from a fibroid before operation, or a woman has had her blood badly degenerated by a long and severe acute or subacute poisoning, due to the pyosalpinx, there is no telling what might happen to them soon after the operation. Every disease which might be prevalent at the time might affect them. In other words, they would be more susceptible. A year after an operation, provided they were in *good physical condition*, there would be absolutely no danger from their past conditions.

E. E. Montgomery, M. D., professor of gynecology in the Jefferson Medical College, writes:

Your letter of inquiry regarding the prognosis of total hysterectomy, in cases of fibroids, pyosalpinx and hydrosalpinx, dysmenorrhea, or any other cause with the exception of malignancy, has been received. Your question is a difficult one to answer. Of course as to the operation itself the mortality with proper methods is not very great; five per cent. in cases in reasonable condition of health, would be considered a justifiable mortality. As to the subsequent morbidity, it depends very largely upon the situation of the patient. Some patients naturally have more vasomotor disturbances than others, but in those individuals being so situated that they have to support themselves and get to work, or in those in whom the operator can so arrange affairs that the patient will have her mind kept occupied, the complete recovery from the condition is much greater. I do not think the removal of the uterus itself shortens life. I would say that eighty per cent. of the cases end in recovery from the operation unless some complications arise or injury had occurred during it, and are restored to good health, and live to as great an age as they would had the operation not been done.

William Easterly Ashton, M. D., professor of gynecology in the Medico-Chirurgical College, writes:

As a rule supravaginal and not total hysterectomy is done in cases of fibroids or in cases of pyosalpinx in which the uterine tissue itself is infected. It is never done for dysmenorrhea.

Of course, in cases of fibroids that have undergone degeneration, the total operation is indicated. In these cases I would advise against insurance, but in the supravaginal cases I see no reason why they should not be first class risks, all things being equal.

George M. Boyd, M. D., professor of obstetrics in the Medico-Chirurgical College, writes:

I am in receipt of your communication of February 26th, and in reply to the question you ask, I would state that I believe that it is now the consensus that hysterectomy should be performed in all cases of fibroid tumor as early as possible, the removal of the tumor undoubtedly prolonging the patient's life. In this group of cases, however, there often exist other constitutional disturbances, which would, in my opinion, make the insurance a very favorable one. In cases of pyosalpinx and hydrosalpingitis, hysterectomy is sometimes resorted to, but not in all cases. In this second group of cases the operative interferences would in the majority of cases (in my opinion) improve the insurance risk, for often the patient is completely cured of her disease.

John B. Deaver, M. D., professor of the practice of surgery in the University of Pennsylvania, writes:

In answer to your letter I beg to say, in my experience total hysterectomy in the case of fibroid and infected uterus in the absence of malignant degeneration, the proportion of complete recoveries is practically ninety per cent, and the length of life materially prolonged. The mortality of this operation in my hand is less than two per cent.

Theodore A. Erck, M. D., associate in gynecology in the Philadelphia Polyclinic, writes:

In reply to your inquiry relative to the prognosis of hysterectomy in cases of fibroids, pyosalpinx, and hydrosalpinx, excluding malignancy, I should say that the ultimate prognosis is most favorable. While it takes some of the patients varying lengths of time to recover from the conditions of anemia, infection, etc., that were caused by their lesion, they ultimately almost all enjoy good health. The menopause in these surgical cases varies in different individuals and is in my opinion not worse, but rather better than in many women having normal pelves.

John G. Clark, M. D., professor of gynecology in the University of Pennsylvania, writes:

I am in receipt of your letter concerning the reading of your paper. I have very little time to look very definitely into the question which you ask. I am, therefore, able to make only a general statement, namely:

In women over thirty years of age in which a hysterectomy is performed, longevity should not be particularly influenced, barring the accidents incident to complications left by the operation. The influence which hysterectomy has upon longevity depends upon the age at which it is performed, namely, in young women, it exercises such a profound influence upon their general physical health and upon their nervous system as to render them very nervous and possibly shorten their lives. In mature women, however, where the operation is performed to meet a threatening condition, such as fibroid or serious pelvic inflammatory trouble, it should not materially influence their lives other than for an improvement, and consequently increase longevity.

I offer you this letter with reluctance, for I realize that it is merely a general statement not based upon any definite data.

Frank Wells, M. D., medical director of the John Hancock Life Insurance Company, of Boston, writes:

I have before me yours of the 28th instant, in regard to the insurability of women with special reference to the effects of major operations.

Permit me to say that we have no statistics which would guide us in this matter. We have established a rule, however, that when a woman has had any abdominal operation for disease of the generative organs, we postpone the case for three years from the time the operation was performed. If it is stated in the examination that the operation was performed more than three years before and the applicant has had no pathological symptoms of any kind since, the risk is advised.

In regard to appendectomy, we are in the habit of approving such a risk six months after an operation has been performed, provided that all the factors are normal. In some few cases we have advised the risk within a shorter time.

Harry Toulmin, M. D., medical director of the Penn Mutual Life Insurance Company, writes:

In reply to your letter of the 28th instant, I desire to state that it is our opinion that an applicant who has had his appendix removed is a perfectly good risk with a normal expectancy three months after the operation if the wound has been immediately closed; and a year after the operation if the wound has been left open, to heal by granulations. We think the danger of adhesion is much greater in this second class, and that is the reason for the longer postponement.

After an operation for simple benign tumors in the female pelvis, such as fibroids or ovarian cysts, we consider the expectancy of life normal after a lapse of six months.

If an operation has been performed on account of some inflammatory condition, we would not consider the risk safe until a year and a half has elapsed. If there has been no recurrence of symptoms, the case would then be considered on whose expectancy is normal.

Charles H. Willits, M. D., medical director of the Provident Life Insurance Company, writes:

Your favor of February 28, 1912, has just been received. Our company considers female in the same light as male risks in reference to appendectomy. We think them as good after a satisfactory radical operation in which there is no hernia or weakness of the abdominal muscles, as if they had never had appendicitis. In regard to hysterectomy, up to this time we have never accepted women in whose cases this operation has been performed. We regard women as good as male risks and accept them at the same rates and on the same plans as men, with the exception of our renewable term policy which we do not issue to women who are not married, or to women who are married and have not borne children.

From the foregoing statements the conclusion will be reached that women are safely insurable for the following reasons:

1. That their longevity exceeds that of men.
2. With the foresight of the sex they adhere strictly to their contracts, not permitting their policies to lapse.
3. If a thoroughly rigid physical examination is made, such as has been described, and a most careful investigation is instituted on the line of moral hazard and insurable interest in all cases of female applicants, insurance companies cannot err in accepting women as risks.
4. Major operations, if there is no history of tuberculosis or suspicion of malignancy, can have no effect upon the assurability, if sufficient time is allowed to elapse after the operation; in cases of appendectomy, salpingotomy, and ovariectomy, six months; for supravaginal hysterectomy, two years.

By allowing two years to elapse after hysterectomy the artificial menopause has been thoroughly established.

AIR IMPURITIES.

Dusts, Fumes, and Gases.

BY CHARLES BASKERVILLE, PH. D., F. C. S.,

New York.

Professor of Chemistry and Director of the Laboratory, City of New York; Chairman, Committee on Occupational Diseases in Chemical Trades, New York Section, American Chemical Society.

The nature and extent of air impurities discussed in this paper are dependent upon local conditions. For our purposes they may be classified under three heads, namely,—

1. Dusts;
2. Fumes;
3. Gases.

These divisions are not exclusive, as fumes in abundance may become a dust; for example, a sudden escape of white arsenic fumes results in a cloud of dust. Again, smelter fumes (mainly sulphur dioxide) much diluted, may be classed as gaseous. The classification, therefore, is neither specific nor dependent upon inherent properties of the materials. It is merely a convenience and must admit of a broad and liberal interpretation. A technical discussion as to proper lines of differentiation would be of little profit and less interest.

As these air impurities are the outgrowth of the progress in modern civilization, they may be considered from three other points of view, namely,—

1. Their relation to the community at large;
2. Their relation to the individual property tenant neighboring the source; and
3. The relation of the individual working at their production. Prevention, reduction, or recovery, one or all three, are associated with financial economy or economic efficiency of the individual (health), or both.

DUSTS.

Dust may consist of worn road materials, street sweepings, household waste, and trade refuse.¹ It may be looked upon in a measure as the intermediate product of ceaseless wear and tear, consisting of fine, more or less dry particles of earth and refuse of the most varied character, capable of being raised and wafted by the wind.

City Dust. The city streets are put to more use than the streets of the village and to more different uses than the roads of the country. They serve not only as arteries of travel, but are as well the connection to every household, and consequently serve as the natural outlets for rejecta and wastes, as well as for crowds of people of the most varied inclinations and tastes. City dust consists of pulverized excretions and rejecta of many human beings and animals, the wastes of hundreds of shops, stores, and factories, as well as the material which is worn or eroded from buildings and streets. It is constantly being subjected to a pulverizing treatment, becoming pulverized dirt, as a rule rich in bacteria, being distributed by the winds, suspended in the air, and distributed promiscuously. It is said (Soper, *Modern Methods of Street Cleaning*, p. 7, 1909) that the quantity held constantly in suspension is so great

that it even affects the city's climate. Certainly we know that it discolors our persons and our clothing; that it deposits on and darkens buildings and monuments; that it is often laden with microorganisms. And flies thrive upon the organic rejecta in the streets.

Microorganisms in city dust are intermittently exposed to unfavorable conditions, such as desiccation, unfavorable temperature, germicidal action of light, etc., but their more or less constant presence indicates that we cannot depend upon such sanitary agencies.

Of the components of street sweepings which enter into the formation of dust, it would seem that the distribution of some of these is, to a certain extent, unavoidable: Manure, detritus from pavement wear, droppings from carts, materials of building construction, leaves, and remains of fruit. In addition to the dust resulting from the pulverization of these refuse materials, there is also a "general air dust" which is difficult of definition as to composition, but which is probably composed of the finely divided lighter portions of all the waste. It is this dust which, in a penetrative form, enters offices, homes, schools, and hospitals, even in the absence of the wind necessary to waft the more quiescent street dust.

It is utopian to dream of a dustless city, but Berlin comes near being one. Water is the main cure, but the writer has advocated, in season and out of season, the desirability of using a suitable disinfectant, as a very dilute chloride of lime solution, in wetting down the streets. The chemical is exceedingly cheap, and the outlay would be more than covered by the decrease in "dust borne" diseases. It will be of interest to call attention here to Doctor Nesbit's ridding Wilmington, N. C., of flies just one year ago—and with them stamping out a typhoid fever epidemic—by sprinkling the streets five times with an attenuated mixture of water and light pine oil.

With the development of rapid transit systems in modern cities, it may be well to direct attention to a new and specific form of city dust investigated by Doctor Soper (*Air and Ventilation in Subways*, p. 200, 1908), who found that the average weight of dust in subway air was 61.6 mg. per 1,000 cubic feet of air, or 2.25 mg. per cubic metre. The figures for the streets were 1.83 mg. per cubic metre. The subway dust was found to consist chiefly of angular particles of iron, but no case of siderosis seemed to have been reported.

Road Dust. There are 2,151,270 miles of public roads in the United States proper, outside of all municipalities, and these constitute at least one of the great national dust factories. The suppression of road dust is one of the two most important problems which confront road engineers to-day.

As in the case of city dust, wear is the fundamental cause of road dust formation, but in this case there are other factors which tend to remove and distribute dust when formed, thus exposing fresh surfaces to wear (Hubbard, *Dust Preventives and Road Binders*, p. 4, 1910). Chemical agencies, as water carrying small amounts of carbonic, humus, and other acids, slowly decompose many materials found in the rocks used for road building, and even

¹Compare, however, atmospheric dust, which may consist of cosmic as well as terrestrial particles. Reference is had above to dust which may be a potent etiological or predisposing factor in the production of disease.

water alone is capable of producing secondary products of the primary minerals. This action tends to disintegrate the rock, and it proceeds at a more rapid rate as the road material becomes finer; but it often exerts a beneficial effect upon the road by consolidating, through the formation of colloid or crystalloid bodies, the surface of the highway.²

The *physical agencies* which tend to hasten the formation of dust are: 1. The disrupting action of frost; 2, the action of wind; 3, the attrition of falling rain; and, 3, the transporting power of water. Of these, the effects of frost and wind are most important, although the action of wind has an indirect relation to dust formation and is one of the most direct causes of the dust nuisance.

The *mechanical agencies* of dust formation on roads are abrasion, impact, local compression, and shear, all of which forces are attributable to traffic, especially shear to the tractive force exerted upon the road surface by the wheels connected with the driving mechanism of self propelled vehicles (Hubbard, *loco citato*).

Cushman (*Municipal Chemistry*, p. 210, 1911) has attempted to arouse the civic sense to the necessity of dust suppression. He pointed out that the public roads of the United States are losing as much as 500,000 tons of material every dry day in the year. "If we assume that there are 100 dry days in the year, we may well ask ourselves what is the economic bearing upon our national and civic life of the annual movement, from places where it is needed to places where it is highly undesirable, of 50,000,000 tons of material. . . . What shall we say . . . of the effect of these moving dust clouds upon the public health, of the public discomfort, of the beauty destroying effects?"

The problem of dust prevention is closely associated with that of road preservation, and any solution of the two problems must deal largely with methods designed to overcome the tendencies of the automobile, namely, the air currents generated in its rear and the great tractive force exerted by its rear wheels upon the road surface, although, obviously, the effect of impact and abrasion of ordinary traffic must also receive consideration.

Of the three general methods of minimizing dust formation—the sanitary removal of dust from road surfaces; the retention of dust upon the road surface; and the prevention of dust formation—the most promising, according to Hubbard, would seem to lie in the treatment of roads with chemical substances known as dust preventives and road binders, which may be applied either to the surface or in the body of the road. However, "the importance of other methods . . . should . . . never be lost sight of, for it is only by a combination of methods that the two problems can be successfully solved." The road of the future will probably be one having a cement concrete base and a bituminous concrete surface, for the broken stone road of the present time is unsatisfactory, even though it is bituminized or otherwise treated at intervals to palliate the dust nuisance by temporarily binding the dust particles.

So far, it has not been the custom in the United States to devise any systematic method of road maintenance, and the roads of this country are suffering more than those of European countries in consequence thereof. It is undoubtedly more economical to make frequent repairs than to allow a road completely to disintegrate, and then reconstruct or resurface it. When this subject receives the attention of our State highway commissions and engineers, to such an extent that a system of road patrol, at least for the main roads, similar to that of France, is organized and maintained, the dust problem will be reduced even under the present methods of road construction.

Dust from Tarred Roads. It has been observed that the dust from tarred roads has seemed to be more irritating to the eyes than the dust from untarred roads, and in 1910 an investigation of this point was made in France by means of experiments on animals (see True and Fleig, *Comptes rendus*, 151, 593). It was found that dust from untarred roads had only the slightest effect when sprinkled on the eye, and that dust from old tarred roads, from which the coating had more or less disappeared, gave effects little different. Dust from old tarred roads with a well preserved surface brought about conjunctivitis and other lesions, while dust artificially produced from such roads gave still more severe effects.

Any noxious effect of the dust from tarred roads must be due primarily to the chemical action of the constituents of the tar upon the mucous membrane of the eye, for the investigations of True and Fleig show that the results correspond to the proportion of tar; second, to the mechanical irritation produced by the dust; and third, to the germs present. It has been observed that the dust from tarred roads contains fewer germs than that from untarred roads. Bituminous vapors have only a slight action upon the eye (*Comptes rendus*, 151, 769).

While bituminous dust may rapidly produce various lesions in the eyes, and may leave persistent leucoma, the condition of the eye and the action of sunlight are both predisposing causes. The experiments which have been conducted on these points do not, moreover, constitute an argument against the tarring of roads, as admitted by True and Fleig themselves; for when tarring is well done, it diminishes the chance of injury to the eyes.

Industrial Dusts. It is well known that various industrial dusts cause irritation of the respiratory passages and of the eyes and skin of workmen. Such dusts may be considered in three classes, namely:

1. *Insoluble Inorganic Dusts.* This class includes metals (antimony, arsenic, type metal, brass, bronze, copper, aluminum, iron, steel, lead, manganese, vanadium and ferrovanadium, silver, tin, zinc, and solder) in a state of fine division (dusts, atomized metals, metallic powders); flue dusts; various ore dusts (iron ore, etc.); silica, sand, emery, flint, glass powder; carbon, graphite, diamond, coal, soot; brick dust, marble, granite, cement, terra cotta; lime, gypsum, plaster, meerschaum; phosphates, guano, etc.

Fibrosis of the lungs may result from the inhalation of siliceous or metallic particles; for example,

²Page, Cushman, and Hubbard have studied the chemical reactions which occur in roads, and their investigations (see U. S. Department of Agriculture, Bureau of Chemistry *Bulletins* 85 and 92, Office of Public Roads *Bulletin* 88) have thrown much light on the subject.

we have "potter's asthma" and "grinder's phthisis" (chronic catarrhal bronchitis among knife grinders). Pneumonia has been reported as frequent among workmen in blast furnaces, owing, in part, directly or indirectly, to the inhalation of slag dust; cardiac dilatation is said to occur among workmen in slate quarries; ankylostomiasis among brick makers, miners, etc.; and recurrent inflammation of bone with hypertrophy among pearl dust workers.

Helthaler (*Independent*, December 27, 1906) has shown the high rate of death among various classes of metal workers in America who are apparently in ignorance of the peculiar dangers of their occupations; and Prinzing (*Handbuch der medizinischen Statistik*, p. 489, 1906) has demonstrated the high death rate from phthisis among steel grinders and other workmen at Solingen, Germany, for the years 1885 to 1895. It is certain that the inhalation of iron dust may diminish in time the respiratory efficiency of the lungs through a loss in their elastic property; or may reduce the resistance of the organs to invasion by harmful bacteria; or may infect the lungs through a transportation of disease germs to places favorable for their inoculation. The disease known as siderosis exists commonly among metal polishers, knife grinders, and others engaged in metal working. The earliest symptoms of this disease are, according to Soper (*The Air and Ventilation of Subways*, p. 205, 1908), catarrh and bronchitis, but shortness of breath is pronounced by all authorities to be the most characteristic symptom. Eventually there follows what appears to be phthisis without the presence of tubercle bacilli, yet genuine infective phthisis is the most common cause of death. The effects may be delayed for years, but metal working is indeed a dangerous occupation; undoubtedly many die from infectious pulmonary diseases who do not know that the breathing of dusty air has led to their infection.

2. *Soluble Inorganic Dusts.* This class includes such substances as are likely to be swallowed and absorbed, *e. g.*: Metal particles (lead, brass; copper, zinc, arsenic, mercury, and silver) and soluble inorganic salts. Many dusts of this class are dangerous not only because of their irritating or poisonous properties, but also because of their inflammability, *e. g.*, potassium chlorate.

3. *Organic Dusts.* This class comprises sawdust, fur, skins, feathers, broom and straw, grains and flours, jute, flax, hemp, cotton, wool, carpet dust, street sweepings, tobacco and tobacco box dust, hides and leather, felts, rags, paper, horsehair, etc.

As representative diseases caused by organic dusts we have: Flax dressers' disease, a kind of pneumonia due to the inhalation of particles of flax; pneumokoniosis due to the inhalation of dust by ganister workers; alkaloidal poisoning from African boxwood by workmen engaged in shuttle making; and malignant pustule and a febrile disease among rag sorters.

As in the other classes, the components of this class are all irritating to the respiratory tract and eyes, and especially are they capable of forming inflammable, and even explosive, mixtures with air when in the form of dust. In addition, there are various trade eczemas, and anthrax has been frequently reported among wool sorters.

The solution of the industrial dust problem presents many difficulties. Undoubtedly, however, disease from dust may be much reduced by the following procedures:

(a). Those engaged in the following occupations should wear "workmen respirators": Sorting rags in paper factories; workmen on threshing machines; milling; batch mixers in glass factories; stone cutters and sculptors; and all those working in factories where the air is contaminated with irritating or poisonous dust.

(b). Those employed in the manufacture of oxidizing agents or lead workers, should be compelled to change their clothes before leaving the factory. This is done in some works in this country now.

(c). Glasses for the protection of the eyes of the workmen should be looked upon as necessary in plants where irritating dusts are unavoidable.

(d). The dust on the floors of printing, type casting, metal working, and other establishments may be laid by means of certain useful preparations. Heise (*Arbeiten aus dem kaiserlichen Gesundheits-Amt*, xxx, 93, 1909) considers those consisting entirely of nondrying (mineral) oils to be the best for the purpose.

Where vapors are likely to occasion industrial poisoning, ventilation will serve to prevent their accumulation; but in the case of dusts, economic considerations often render such a procedure difficult except, naturally, the maintenance of normal ventilation.

NOXIOUS FUMES AND GASES.

Industrial Fumes, Gases, and Vapors. The air of cities and towns where chemical manufactories exist is often contaminated with noxious gases of industrial origin. The usual gases which give rise to complaint in manufacturing localities are the following: Chlorine, which is emitted by pottery kilns and ceramic products manufactories, and from plants for the electrolysis of halides; hydrogen chloride, which is produced by the combustion of coal, and by pottery kilns, ceramic products manufactories (partly from the coal and partly from the clay), nickel and cobalt smelting, platinum refining, glass manufacture, fertilizer manufacture, the chloride of lime industry, and alkali manufactories; sulphur dioxide and sulphuric acid, which result from the combustion of coal, coke, petroleum, and gas, copper smelting, bleaching operations, etc.; fluorides and hydrofluoric acid, which are emitted from acid phosphate and heavy chemical plants; hydrogen sulphide, from chemical works, especially those which produce ammonia; carbon monoxide, which is emitted from iron furnaces and from copper smelters; organic vapors, from, for example, glue refineries, bone burners, slaughter and packing houses; zinc fumes from zinc smelters and from brass foundries; arsenical fumes from copper smelters; phosphoric fumes from match manufactories; and carbon disulphide and sulphur chloride from some rubber works.

Lehmann (*Methods of Practical Hygiene*, p. 174, 1901) compiled the following table from the reports of many investigators to show at what concentrations the various common industrial gases are

capable of producing immediate and observable effects upon health:

Name of Gas.	Per 1000	Rapid and dangerous injury.	Desirable for 10 to 60 min. without grave effects.	Trifling action for some hours.
Hydrochloric acid	1000	1.5	0.05	0.005
Sulphurous acid	1000	0.4-5	0.05	0.01
Carbonic acid	100	About 30	6 to 8	1 to 2
Ammonia	1000	2.5-4.5	0.3	0.10
Chlorine; bromine	1000	0.04-0.06	0.004	0.001
Iodine	1000	...	0.003	0.005-0.001
Hydrogen sulphide	1000	0.5-0.7	0.2-0.3	0.1-0.15
Carbon disulphide	1000	0.01	0.002	0.001
Carbon monoxide	1000	2 to 3	0.5-1.0	0.2

However, the destructive action of fumes in the vicinity of chemical plants is generally due to the presence of sulphurous acid, sulphuric acid, or hydrochloric acid; and the foregoing consideration is given on account of the occupational hazards on the part of workmen employed in chemical manufactories and smelters.

Of the gases which affect the respiratory passages and eyes the most important are the following: Illuminating gas, gases from coke and coal, carbon monoxide, carbon dioxide (in brewing, baking and in the manufacture of aerated waters), chromic acid, chlorine, sulphuric, hydrochloric and nitric acids, and nitrogen oxides (workmen in acid factories, heavy chemical works, engravers, etchers, lithographers, etc.), mercury cyanide, heated lead, ammonia, naphtha and benzine (petroleum refineries and dry cleaning establishments), arseniureted hydrogen (copper refiners), sulphur, hydrogen sulphide, sulphur dioxide, and carbon disulphide, sulphur chloride, nitrous gases, hydrocyanic acid, smoke (fire extinguishing), and the vapors of various organic compounds and substances (tar, creosote, carbolic acid, petroleum and its products, methyl alcohol, fusel oil, varnish solvents, dinitrobenzol, nitroglycerin, formaldehyde and formic acid, pyridin, etc.). In addition to irritating the respiratory tract and eyes, such substances as the halogens, mineral acids, formic acid, alkalis, creosote and carbolic acid, various dyes, etc., cause injuries to the skin, giving rise to burns, eczema, fissures, ulcers, etc. It has been said that workmen in by product coke plants, coal tar color works, and in the roofing and paving industries are troubled with epitheliomatous cancer or ulceration of the skin or of the corneal surface of the eye, owing to constant exposure to pitch and tar compounds; that workers with chromates, tanners, and dyers have "chrome ulceration" of the skin; and that there are various trade eczemas, often of a troublesome nature.

Virtually no accidents have been recorded with hydrogen chloride gas, and hydrocyanic acid gas and arseniureted hydrogen are not of frequent occurrence in American plants. Carbon monoxide occurs in colliery workings after explosions, in gas producers, blast furnace gases, and in the manufacture of calcium carbide and phosphorus; hydrogen sulphide occurs in gas liquor storage tanks, gas purifiers, sulphate stills and saturators, and in sewers; chlorine is found in and about bleaching powder chambers, manganese stills, and Deacon and other chloride plants; and nitrous and nitric acid fumes, which are very insidious in their action, are met with in vitriol chambers, especially in Gay-Lussac

towers, during repacking and cleaning, in the manufacture of nitrate of iron and nitric acid, and in all breakages of vessels containing nitric acid.

The prevention of accidents and diseases among the workmen in chemical and metallurgical plants is a subject which has received much consideration in England and Germany. From the experience in those countries we may conclude that the following preventive measures may be taken:

1. In petroleum refineries, extraction rooms, ether manufactories, and in all plants where inflammable liquids and vapors are likely to be present in the air, and in flour mills and in all mills where inflammable dusts are likely to be wafted about or suspended in the air, the belts on all machinery should be treated with a suitable compound to prevent or minimize the possibility of static discharges. The other measures necessary for minimizing the fire risks are well known.

2. Workmen in plants wherein the air is contaminated with halogen, mineral acid, metal, or other irritating vapor should be required to wear "workmen respirators."

3. Instructions should be given as to the use of oxygen and the methods of effecting artificial respiration. A very good description of such procedures is given in the *Chemical Trade Journal*, 19, 260, 1896.

4. Glasses for the protection of the eyes of the workmen should be required in plants where acids or caustic liquids are used or made.

5. The plants should be well ventilated, in order to prevent the accumulation of gases and vapors.

A number of safety devices have been made in Europe for workmen in chemical plants, many of which have been found to be of great value. These cannot be considered here. It has been also statistically shown that a great many of the accidents in chemical plants happen on Mondays.

While we have not given as much attention to the matter in this country as we might, the writer knows of earnest efforts on the part of certain large corporations to provide every precaution. One of the most difficult phases of the problem here is to secure the cooperation of the nonEnglish speaking laborers, which affects the Americans' appraisal of the value of a "dago's" life.

(To be concluded.)

TEN SEX TALKS TO GIRLS.

By IRVING DAVID STEINHARDT, M. D.,

New York.

X.

Continuing our talk of last week, we shall again take up the discussion of the infant. Baby's sleeping quarters should be the best in the house. The room should be moderately cool and always, night and day, well aired. Baby should always sleep alone—and absolutely under no circumstances in the same bed with the mother or father. The fewer people who kiss or handle the baby, the better. Baby should never be kissed on the mouth. Infants are best kept away from too close association with other children, be-

cause they are apt to "catch" catarrhal conditions and other infectious diseases from them. Such things as baby pacifiers, mouth rings, and other instruments of torture devised for baby's discomfort and to injure her health, are positively not to be allowed. They help the development of adenoidal tissue, upset the digestion, and are the finest carriers of germs known. I have already advised you of the inadvisability of using infant foods, and I want to advise you still more emphatically against ever using so called soothing syrups, unless you are willing to take the chances of having your baby so well soothed some time, that she will sleep on forever, in that deep eternal sleep that knows no awakening in this world, after a dose of one of these poisonous concoctions known as a soothing syrup. They are misnamed. They should be known as baby killers. Babies do not need soothing syrups, because unspoiled babies do not cry to excess or fret unless something is wrong with them. And when something is wrong, it should be corrected, and "dope" not given to the baby. Spoiled babies, likewise, do not require poisonous drugs to quiet them, but the proper kind of training to correct their peevishness.

Do not give your baby tea, coffee, or liquor of any kind with the idea you are strengthening the child, for you are doing exactly the reverse. Milk is first, last, and all the time, the best and proper food for any baby and every baby. Do not try to hurry your baby along in its development for the sake of having him do things before your neighbor's baby. Observations made over many years have shown that at certain ages babies do certain things, or develop certain new ideas, and if your baby develops along the lines of these observations there is no cause for worry. If the baby does not develop along these lines, do not worry, but consult your family physician and he will rectify the defect if it is one that comes within the powers of medicine. Do not under any consideration try to be your own doctor and experiment on your baby with your own home made remedies, or with the so called patent medicines to be found in such profusion at the corner drug store. If it were so easy to treat a sick baby, doctors would not have to make a life study of their profession, to keep abreast of the happenings and discoveries in the medical world. You know the real doctors are continual students of medicine, for to stop studying means to be unworthy of the trust put in them by their patients. Likewise, if it were so easy for untrained persons and the patent medicine manufacturer to recognize the baby's ailments and treat them, the death rate for babies would not be so disgracefully high as it now is. Rest assured, when the child of the corner druggist gets sick, or the child of the patent medicine manufacturer is ill, the doctor is consulted. Those men want skilled advice, and not home made or ready made curealls.

It is to be said with regret that some doctors do not know as much about babies as they should, yet babies and children are the most intelligent and interesting patients a doctor can have. At least I think so, and my work in my children's clinics has always been a source of great pleasure to me. To

those who study them, even the various cries of the baby are plain, some designating pain, hunger, temper, etc. Remember, getting teeth is a normal function and rarely disturbs any baby very much, so if about the time the baby should be getting teeth it is not well, do not just say "teeth" and let the matter rest. There is usually something else wrong, which should have prompt attention.

Do not permit your baby to be constipated. Serious results may come from constipation, and not the least serious is convulsions. To relieve constipation, however, the use of the rectal syringe, or glycerin suppositories daily, is very bad. Constipation is best relieved by giving the proper food, and until the daily habit is firmly established the use of a good preparation of milk of magnesia is allowable in the necessary dose, but must be stopped as quickly as possible. Castor oil is good for a general cleaning out in both adults and babies, but used constantly it causes constipation. Small doses of calomel can also be used in children for the purposes of a general cleaning out.

In the summer time care must be taken not to overclothe the baby or to expose the child unnecessarily to the direct rays of the sun or to the extreme heat. Also remember that frequent, cool sponging off is very acceptable to even small infants when the thermometer is trying to reach the boiling point. Likewise, while offering them their usual food at their regular feeding times, do not urge it upon them should they show an inclination to leave some. You know when it is hot, you yourself do not always feel like eating. Give them plenty of cool, boiled water to drink, however, between their feeding hours. Keep them out in the fresh air as much as you can both winter and summer, but while, during the winter, you seek sunny spots protected from the wind, in the summer you do just the reverse. You seek shade and cooling breezes for the baby.

Have I already said something about being extra careful about baby's food in the summer time? Well, this truth will bear much repeating, so I will talk about it again. Before any food, be it a liquid food or a solid food, is given to an infant or young child, let it be most thoroughly inspected and tasted beforehand to see that it is thoroughly good. It is so easy to prevent the diarrheal troubles of babies and young children in the summer time, so much easier than to cure them when they have this trouble, that it is worth while to take the preventive measures. Remember that "an ounce of prevention is worth a pound of cure."

When babies start to crawl, they should not be allowed to indulge in this pleasure on the bare floor or the covered one. They should have a large mat of some sort of material, a washable one preferably, put down to cover the floor, and their activities in the crawling line should be limited to this specially covered place. The reasons for this are very simple and sensible. All floors covered or uncovered are dirty and full of germs. They could not be otherwise, even in the very cleanest household, with every one walking over them no matter where they have come from. Part of this dirt and its germ contents will ultimately find its way into a baby's mouth, if the baby crawls about in the midst of it.

You can readily see, therefore, what a good chance the baby would have under such conditions of getting some disease every time it was allowed to crawl around. Likewise, with its own special cover to crawl on, there is no danger of baby finding some stray article such as a pin, a nail, or other thing to put into its mouth and swallow before the mother can see what the baby is doing. As regards putting things into the mouth, including its own thumbs or fingers, this habit can be stopped in children quite early in life by constant effort on the part of the mother or whoever has the baby in charge. Teach the baby that everything, including its own fingers, was not meant for the mouth, by removing the fingers from the mouth promptly if they are found there, and by stopping anything from getting there if you see it on the way to this destination. Constant, patient repetition finally convinces baby that this is wrong and a stop comes to it. It is much easier to stop putting other things into the baby's mouth than its own fingers.

Another thing which must be stopped in babies promptly, is the habit most of them have of putting their hands in and about the genital organs, especially when they are having their diapers changed. Removal of the hands at once, time and time again, teaches even the very youngest infant to stop this practice. It is very much easier to put a stop to this practice in infancy than later on in life. Likewise, the continuance of this habit tends to favor the habit of real masturbation in either sex later on in life. Keep a young baby neat and clean, both as to body and clothes. You do not have to dress it in the finest of materials, but you can teach it from the very beginning that "Cleanliness is next to Godliness" and to take a pride in its personal appearance so far as neatness goes.

The time to wean a breast baby is from the ninth month to the tenth month, by which time the baby should have ceased its breast feedings altogether. The weaning of a breast fed baby is a very simple matter if the baby has been having a single bottle feeding every day from birth, as every breast fed baby should. This plan has the advantage of making the weaning easy at the usual time, and it also makes it easy to transfer the baby to part or all bottle feedings at any time, should such occasion arise. To a baby who has never had a bottle feeding at all, the weaning process may give trouble, if not properly undertaken. You cannot give this baby the food that a baby brought up entirely or partly on the bottle will take and digest properly at the same age. You must start with a much more diluted milk and work up as quickly as the baby's digestion will permit you. If you try to travel too fast, or do too much, you will give the baby a bad indigestion. Baby will not like the rubber nipple at first, but there must be no compromise, even if baby absolutely refuses a feeding or so. If a feeding is refused, however, baby must not, under any circumstances, be fed before the usual time of the next feeding. By this time a good appetite may not wait to see from where or how the food is coming, so long as it comes. Baby just wants something to satisfy that awful emptiness inside. Very soon after weaning time, I start babies under my care

drinking from a positively clean glass or cup, so that usually very shortly after the first anniversary of its birth, baby has no further liking for the bottle at all.

The question of introducing baby to solid food is a very important one, and depends a good deal more on development than on actual age. Food that requires more or less chewing demands the presence of the necessary teeth to chew with. It must be obvious, therefore, to you that to give a baby this kind of food when it has not the necessary teeth to chew it, would be rather worse than foolish. Yet many attempts are made, with disastrous results, to feed babies by age alone, and without regard to development. It cannot be done successfully; indigestion or worse is bound to result. Between six months of age and eighteen months of age a child usually has twelve teeth, six of which are usually present at the end of the first year of age. We are now talking of the average child, for some will be quicker and some slower in the matter of dentition. After the introduction of beef juice, the mutton broth, and the strained cereals, of which the latter must be cooked for three hours, we give the baby a rest so far as the introduction of new things to eat is concerned.

Beginning at about the twelfth month, if baby has several teeth, I permit zwieback once or twice a day. A little later I permit the introduction of a soft boiled egg at the midday feeding, to take the place of either the mutton broth or the beef juice. It is best, however, not to give eggs oftener than every other day. All this time the orange juice is given daily, as before. At about sixteen months to eighteen months of age, I introduce baby, providing most of the teeth are present, to the mysteries of rare scraped beef, or mutton, and likewise to such fresh vegetables as spinach, green peas which have been mashed and strained to avoid the skins, boiled young onions, and asparagus tips. I also allow stewed prunes which have been mashed through a strainer. Still a little later, baked apples may be added to baby's diet. Nobody, whether a baby, child, or adult, should ever eat fried food of any kind. Food cooked in this manner positively should never be given to young children. Baby's heaviest meal should be at midday, and the meal taken just before retiring for the night should be a light one.

Before two years of age, any kind of cakes, candies, or desserts should not be offered at all. When that great age is reached, however, I think a piece of good chocolate, as a dessert, at the midday meal is very allowable. Not even in summertime is the feeding of ice cream soda to babies or children permissible, and even grown up children of all sizes are better off without it. Under no circumstances give a child liquor in any form, except by order of the doctor during an illness. The example you set your growing child is what the child is going to copy, so in word and action see that the example you set is fit to be copied.

I do not believe in corporal punishment for children as a general rule. Solomon's saying "Spare the rod and spoil the child" is applicable in very few cases, it seems to me. Most children get spankings, not so much because they have been bad and need

correction, but because the parent has lost his or her temper. The spanking is not given, therefore, for its corrective effect, as is asserted, but merely to let the parent "work off" this anger. Do not try to control your children through fear, but through love and care.

I have given you these simple little talks about babies, so that you can act as missionaries and spread baby care knowledge, as well as sex knowledge, and thereby do your little duty toward the reduction of the deaths of young infants through lack of knowledge on the part of the present mothers. Also, some day, I hope all of you will be mothers and that when you attain that glorified state you will remember these latter two talks and put into practice with your children the advice I have given you.

I want you to be missionaries also as regard what I have told you in our talks relating to sex and sexual hygiene. I hope you have listened to these talks attentively and with profit, and will go forth from them convinced that morality is best for you and yours. I have stated only plain facts to you, without discussing any religious side of the question with you. Each of you has a conscience to guide you as to right or wrong, so it seemed not my place at least to add religion to my medical talks. I ask you, however, to go forth advocates of social purity in both sexes, and to preach it both by word and deed throughout your whole life. Join this movement to improve and better our world, the world we live in, and add to the health, happiness, and contentment of all in it. The achievement of social purity will be a big step in the right direction.

In closing my series of talks, I feel as if they would be incomplete unless I added a few words about that period of a woman's life that many of you have heard called "the change of life," and which is so feared by many of your sex. The advice given to you now will not be of much use to you personally for several years to come, but repeated by you perhaps to some older women, in telling them of these talks, you might give them some valuable information, and perhaps even be instrumental in saving their lives. The change of life is that time when the menstrual period ceases to occur and the woman's sexual organs undergo certain changes, concerning which we need not go into detail here. The age at which these phenomena occur is usually between forty and forty-two years of age; in some women later, in a few earlier. It is a popular belief that at this time cancer is liable to start in the womb, or that a woman may lose her reason. Needless to say that both these beliefs are unfounded, and the only ground for them is the fact, that owing to certain symptoms that may arise at this time, a woman may go to her physician and he will on examination discover a cancerous growth or other condition that may be present, and immediately the report will be spread that the change of life did so and so to the patient in question. There are certain things a woman will notice as this time approaches which will, if she knows, acquaint her of what is coming. Before mentioning what these things are, I want to say that at this time every woman should visit her doctor and undergo a most

thorough examination, of these parts particularly. The appearance of a lump in either of the breasts, at no matter what age, old or young, should mean an instant visit to the doctor. It makes no difference whether the lump is painful or not. Very often the least painful lumps are the most serious. Again, any disturbance of the usual menstrual period, in any way, whether it is in the amount of the flow of blood or the number of times of occurrence, should be reported at once to your physician. Any pain, feeling of soreness, or anything out of the usual connected with these parts is best brought at once to the attention of your physician. I tell you this and emphasize it, because many serious conditions may, and do arise from neglecting seeming trifles. Many a grave has been filled unnecessarily for no other reason but neglect in the beginning of what later became a fatal condition. The menopause, or change of life, is usually ushered in by a change in the menstruation. It becomes more or less irregular in occurrence, the quantity of blood lost sometimes becomes less, but in many cases increases for a while before becoming diminished. Finally it disappears entirely. There is a complaint of hot and cold flashes, of palpitation of the heart, of increased nervousness, of diminution of appetite, or a very marked increase of the same, of steady increase in weight, and flushing of the face. Any vaginal discharge of any kind after the menopause should immediately be reported to your physician.

This ends the last talk of our series and nothing remains but to answer your questions, as I usually do at the end of each one of our talks, and again to express the wish that my talks have proved, and will prove profitable to you in the present and future. They are not as perfect as they might be, perhaps, but if you have followed them closely and attentively, I think you will have acquired some knowledge of yourself, your functions, and what to look for and avoid in your sexual life; also how to take care of your offspring.

310 WEST NINETY-NINTH STREET.

THE USE OF MIXED INFECTION VACCINES IN THE TREATMENT OF MYALGIA AND ARTHRITIS.*

By R. E. BRENNEMAN, A. M., M. D.,

Pittsburgh.

Surgeon, Passavant and Presbyterian Hospitals

The term "rheumatism" has deservedly come into general disfavor. Used indiscriminately by physicians and laymen, it covers a multitude of physical ills. Myalgia, arthritis, periostitis, osteomalacia, sprains, fractures, neuritis from various causes, have all been at times lumped under the one head. Of late, however, there has been a well marked tendency on the part of the progressive physician properly to classify the different aches and pains to which human flesh is heir, and to designate them with a proper and scientific nomenclature.

With the passing of careless diagnoses, there has

*Read at the meeting of the College of Physicians, Pittsburgh, April 25, 1912.

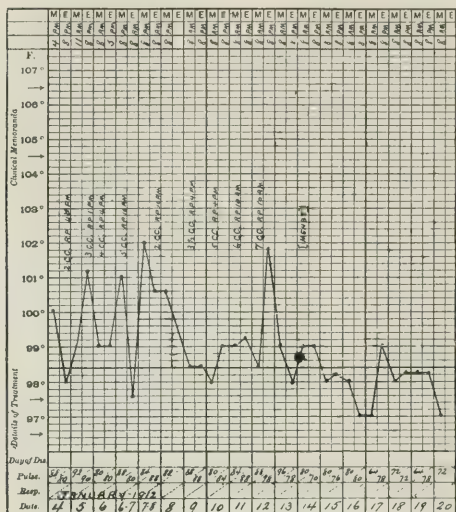


CHART 1.—Case 11; subacute rheumatism.

come about a decided change in the theory of the etiology. Formerly, among both physicians and lay-

men, the accepted cause was "uric acid"; among laymen the idea still obtains to a large extent and alas! among some physicians. Indeed, in the flood of advertising pamphlets that come in the mail, we find (unless the office attendant has consigned them to the waste basket) learned (?) articles on the uric acid diathesis.

For the past fifteen years, however, or during the period of evolution in the bacterial theory of the etiology of disease, has come a gradual recognition of the true cause, or causes, of so called rheumatism. While there may be an excess of uric acid in the urine, it is now considered *post hoc* rather than *propter hoc*. I need only mention, and that briefly, the muscular pains which often follow a tonsillar infection, and the consequent valvular lesions; of similar myalgias and of neuritis, following acute infection; of articular inflammation, following a Neisserian urethral infection, with the presence of the offending microorganism in the joint, to demonstrate clearly enough, it would seem, the infective character of these muscular and arthritic pains.

At this point I wish to emphasize the desirability of a correct differentiation of the causes and seat of bodily pains, in other words, of making a correct diagnosis, and then using a definite and correct nomenclature. For instance, a muscular pain should be called myalgia. To determine its location, such terms as pleurodynia, cephalodynia, torticollis, or lumbago may be used. If a joint is af-

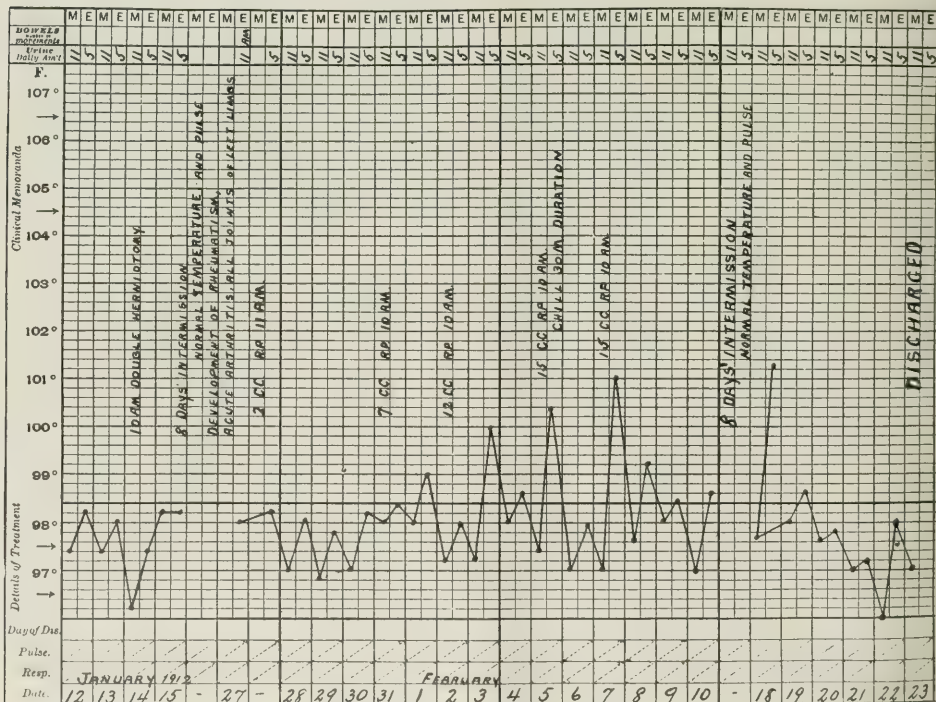


CHART 2.—Case 111; acute articular rheumatism.

ected, arthritis is the term. To employ the term rheumatic, either as prefix or suffix, is redundant, unnecessary, unscientific. The various forms may be designated according to the stage or part of the

learned from the Boers, in South Africa, some thirty-eight years ago, the value of a decoction of willow bark, the salicylates, in one form or another have been the sheet anchor of medical therapy for this disease. Their value is unquestioned, but their disadvantages are many, and their effect is not constant. Many are the remedies that have been used, potions, powders, pills, plasters, poultices, proprietary and patent (not to mention liniments), may be found in every household. The patient's neighbors all have a sure cure, from lettuce to lemons, but the complaint lingers with us yet. For these reasons the profession looks with longing eyes to the future for a specific treatment. With specifics for other diseases, we naturally look for a specific to combat this universal disease. The time seems ripe for a new therapy.

In the light of the careful review of the bacterial nature of infective diseases, by the first reader of

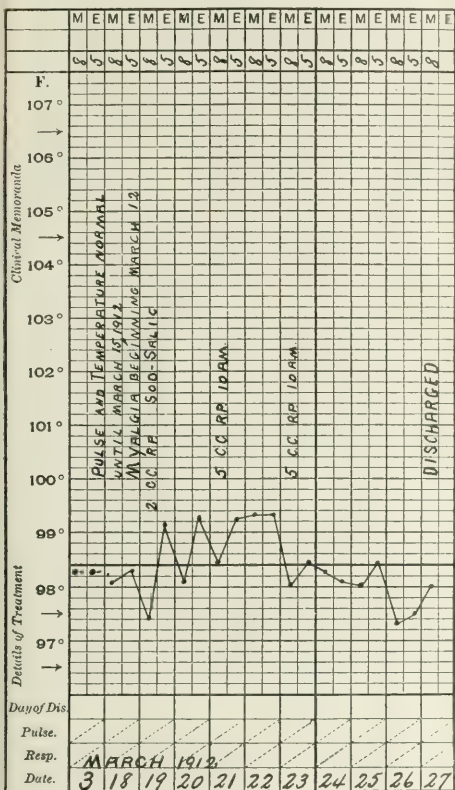


CHART 3.—Case v: contusion of right knee and leg; acute myalgic leg.

joint, if confined to the synovial membrane, the term synovitis is sufficient, with a prefix to designate the cause, just as in arthritis, e. g., tuberculous, gonorrheal, either acute, subacute, or chronic. The only time the word rheumatism may be used, is when a generic term is wanted to designate a group of diseases, and even then it should be used with care.

As to the treatment, there is no dispute as to the value of eliminative treatment; every organ should be made to do its duty, and that thoroughly. As to diet, common sense should rule. If a certain food cannot be digested well it should be eliminated. To say that one article of food causes rheumatism, or predisposes to it, seems unscientific. To say that it causes indigestion and a consequent growth of bacteria with an interference of *metabolism* and an absorption of toxins, toxones, or toxoids, or a change in the opsonins, lysins, or agglutinins, would be more rational.

Since a Scotch surgeon, MacLagen, I believe,

[illegible]

FIGURE 1. Case VI: chronic articular rheumatism.

the evening, and of the case reports given by the subsequent readers, the writer will omit going over the ground covering Schafer's theories, except to

say that they appear probable, rational, and, in the light of our present knowledge, scientific. Of the value of serum therapy and vaccine therapy in proper cases, there is now but little dispute; in fact it is not a question of using these methods, but whose and what variety is used.

It was the writer's privilege, in 1906, to spend six weeks in the University Hospital, Philadelphia, studying the methods of preparation and use of autogenous vaccines, under the late lamented Doctor Musser, and Dr. B. A. Thomas. I was so favorably impressed with the efficacy of this vaccine, that I have been an advocate of this method of treatment where indicated. In my hospital practice, many severe and obstinate cases of infection have cleared up promptly and satisfactorily. Some cases, however, that should have been helped, were not benefited, and gradually the limitations of ordinary vaccines were defined. Various sera and vaccines would not do what was announced for them, notably the specifics for pneumonia, meningitis, tetanus in both stages, and tuberculosis.

Consequently, upon the publication of Schafer's theories, and the introduction of his vaccines, differing to some extent with previously accepted theories of Wright and others, but along similar lines, the writer was prepared, in a measure at least, to investigate his assertions clinically. That there are many different bacteria concerned in the causation of certain infective diseases is evident. For instance, a typhoid infection, accompanied with a severe colon bacillus infection, is much more serious than a simple Eberth bacillus infection; so with appendicitis, and, as is generally conceded now, with tuberculosis. With these facts in mind, it seemed reasonable to use a vaccine composed of various strains of bacteria. As to the value of filtering out the dead bacteria, that was a matter to be determined by experiment. Several cases came under my care after becoming acquainted with these facts, and I decided to confirm or disprove the rather optimistic accounts that I had received concerning the new vaccines, or as they are termed now, phylacogens.¹ I wish to say, however, that in no case was this method used without a full explanation to the patient and obtaining his consent. The following cases show the results.

CASE I. Mrs. D., widow, aged sixty-four years. Had had pains in her ankle and shinbone and in her sternum and various other joints for the past twenty-five years. She had been treated more or less during this entire period. For nearly one year before entering the hospital she had been under the care of a careful experienced physician who had used all the mechanical and electrical, as well as medical treatments, without much, if any success. She entered the hospital, January 4, 1912, for treatment with the Schafer vaccines. A copy of her chart is here shown, which is self explanatory. It will be noticed that the last injection, consisting of ten c.c. rheumatism vaccine, produced a tremendous reaction, her chill lasting about forty minutes, the temperature going to 105.8° F., the pulse, however, not rising in proportion. Both pulse and temperature soon subsided to normal, and remained so until her discharge from the hospital. Practically every injection had a well marked reaction, a feeling of malaise, nausea, general muscular soreness following, with very little local reaction at the site of injection, which was varied at each dose. Her pain left her after the third or fourth injection, and remained absent during her stay at

¹From Greek, *φύλακτος* and *γεννάω*, meaning literally, producing guardians.

the hospital. After reaching home, her family physician continued these treatments, giving her about six more treatments, the doses varying from five to nine c.c. The reaction, however, after the last few doses, was not so marked as after the first treatments. The pain did not return for six or eight weeks after the last dose. It then returned to some extent in her feet and limbs, and about April 1st, after a severe cold, some pain returned in her sternum, but according to her daughter's report this pain was not as bad as it was formerly. She was thoroughly satisfied with the results of the treatment while at the hospital, but at present is not disposed to continue the treatment at her home. Undoubtedly, one injection a week, for several weeks, would exert the same influence on the pain as the treatment did at the hospital, but her age and the attending reaction after the treatment have influenced her to take no further treatment at present. She was discharged from the hospital January 23, 1912.

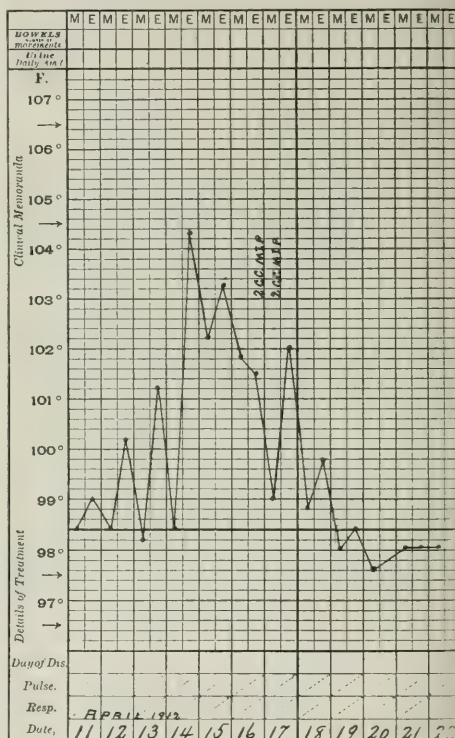


CHART 5.—Case I; puerperal septichemia.

CASE II. Miss D., aged thirty years, daughter of the former patient, entered the hospital at the same time. She had had vague pains in the articulations of her feet and hands, for three or four years, and was desirous of having some radical treatment early in the course of the disease. Her pains, however, did not interfere particularly with her work as a stenographer. A copy of her chart is herewith given, and will show the course of her treatment while in the hospital, menstruation coming on ten days earlier than usual, the vaccine possibly having some influence on this function.

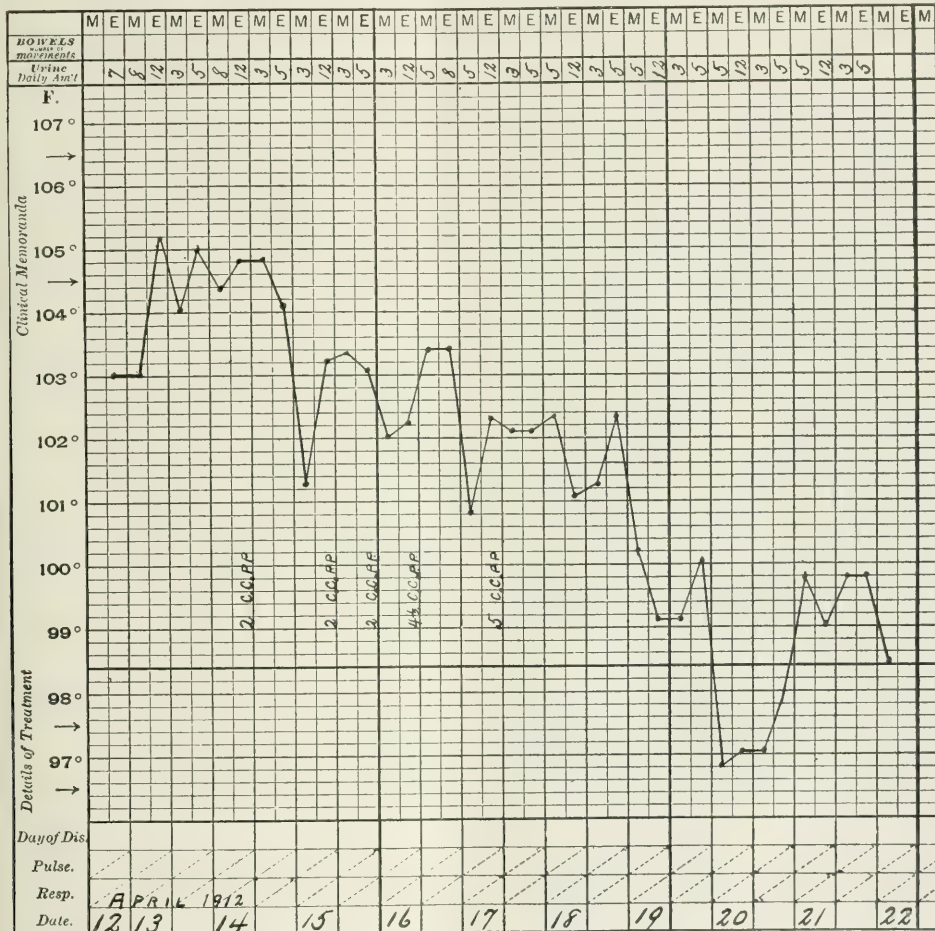
The reactions in this case were not so marked as in the previous one, but were present. Her pains disappeared after the third or fourth treatment. After leaving the hospital, her family physician gave her about four more

injections, of from four to five c.c., at intervals of about four days. One marked effect of the treatment was the clearing up of her skin, her friends remarking on its improved condition, and the clearing up of her complexion. At this date, April 25th, she is troubled but little with pains, her general condition was good, her care and bathing were continuous, her complexion was still clear, and she was well satisfied with the treatment. She was discharged from the hospital, January 23, 1912 (see chart).

CASE III. Mr. M. T., aged fifty-four years, admitted

after. Sodium salicylate was administered, with some relief of symptoms. Four or five days later a myalgia of the left leg developed. On the 10th, as is shown by the chart, rheumatism phylacogen was administered subcutaneously. The chart shows the doses and progress of his treatment. His pains soon left him and he was discharged well, April 3d.

CASE V. Mr. J. G., admitted to the hospital, March 3, 1912, suffering from a contusion of the right knee and bruise of the right tibia. About one week later an acute



CHEAR = 0 + 0.15 x 1; double lobar pneumonia

to the hospital, January 12, 1912, for double herniotomy. About ten days after the operation an acute arthritis developed in nearly all his joints, two or three being affected at one time. The vaccine was administered as will be shown on his chart. Usual reaction, especially in regard to general malaise, was noticed, and the relief from pain well marked. He was discharged from the hospital, February 23, 1912, well. May 10th, still well (see chart).

CASE IV. Mr. W., aged thirty years, was admitted to the hospital, February 10, 1912, with a fracture of the right tibia. A right pleurodynia developed about ten days

myalgia of the left leg developed, and the rheumatism phylacogen was given in the usual doses, as will be seen upon examination of the accompanying chart. His pains soon left, and he was discharged well, April 27, 1912.

The last two cases were somewhat similar, and both patients believed that the vaccine treatment had been of decided benefit in relieving their symptoms.

CASE VI. J. P. K., aged sixty years, private case of Dr

J. R. Vincent, reported by permission. Diagnosis, chronic arthritis. As this case was not in the hospital, the temperatures were not taken at regular intervals, but a sufficient number were taken to approve the accompanying chart. The following notations were by Doctor Vincent: Patient presented himself, last March, with pain in big toe, right foot swollen. Eliminative treatment instituted. Right foot improved, but, in June, trouble began in the left ankle and toe. In August, went to Mt. Clemens, six weeks in bed, returning to Pittsburgh, unimproved. This patient went to complete recovery, and was still well. The reactions in this case were not so marked, but the results were exceptionally good. April 22, 1912, patient still well (see chart).

CASE VII. N. N., aged thirty years, private case of Doctor Alexander, reported by permission. Diagnosis, chronic arthritis. Right knee affected since 1905, and in both knees since 1910. No swelling, marked stiffness in both knees with pain on motion. Had been under routine antirheumatic treatment since 1905, without particular benefit.

September 22, 1911: Rheumatism vaccine, two c. c. Six hours after injection had headache, no chill, no rise in temperature, marked local reaction, muscular soreness, redness, slight numbness of arm at and near point of injection. No change in symptoms. September 23, 1911: Rheumatism vaccine, five c. c. Marked local reaction, redness, soreness, numbness, etc., four hours after injection temperature 101° F., pulse 110, respiration 22. No chill or other symptom of reaction. September 28, 1911: Rheumatism vaccine, ten c. c. Slight improvement following last injection, as evidenced by lessened pain in infected joints. No increase in temperature, pulse, or respiration. October 4th: Marked improvement in knee condition. No pain; patient able to walk better than for years. Rheumatism vaccine ten c. c. October 8th: Following last injection, patient had no noticeable reaction whatsoever, either local or systemic. Still improving. Ten c. c. rheumatism vaccine. October 11th: Rheumatism vaccine ten c. c. Following this injection, patient had chill, lasting thirteen minutes, with rise of temperature three hours later to 101° F., pulse 100, respiration 22, local reaction marked. October 16th: Patient entirely free from rheumatic symptoms. Went about her daily work without feeling the least inconvenience.

CASE VIII. C. B., aged thirty-six years, reported by permission of Dr. J. P. Saling. Diagnosis, acute arthritis. Had had acute attacks for last ten years at intervals of about nine months. Present attack began December 20, 1911. Regulation rheumatism treatment given until January 12th without relief.

January 12, 1912: Rheumatism vaccine, five c. c. and mixed infection vaccine, five c. c. Temperature maximum 103° F., nausea, vomiting, and marked prostration followed this injection. Slight local reaction. January 14th: Rheumatism vaccine five c. c., Schafer's mixed infection vaccine five c. c. Projectile vomiting followed the nausea, and then patient had a severe nose bleed. No relief from pain, but pain was exaggerated. Other joints became involved. Prostration so profound that patient refused further treatment. January 16th: Pain suddenly left on this date without treatment of any kind. Relapsed on the 20th, lasting one day. January 21st: Rheumatism vaccine five c. c. and mixed infection vaccine five c. c. January 23d: Patient in good condition and able to go to work. A little pain. March 17th: Well. No pain or other symptoms of rheumatism. April 25th: Patient in good condition.

CASE IX. J. E. J., aged fifty-four years, reported by permission of Dr. J. P. Saling. Diagnosis, sciatic rheumatism. Had one attack sciatic rheumatism twenty years ago, duration seven months. Present attack began in October, 1911, with severe pain between right knee and hip joint. Unable to walk without cane. Potassium iodide treatment caused some relief from constant pain.

January 15, 1912: Mixed infection vaccine five c. c. Reaction pronounced, nausea and vomiting for twenty-four hours. Rise in temperature, following this, one injection, pain disappeared. Was able to walk without cane. Improvement marked. January 27th: Well. No further injections needed. Walked well. Slept well and was able to attend his work, first time since October, 1911. April 25th: Patient still well.

CASE X. In this connection I wish to report a case of puerperal septicemia, occurring at Passavant Hospital. Miss S., colored, was without any preparation, delivered of a child a few minutes after entering the hospital. The accompanying chart shows the course of her temperature, time of injection of mixed infection vaccine. At this time, April 25th, she was still in the hospital in good condition, with a normal temperature. The action of the vaccine here was marked and very suggestive (see chart).

CASE XI. In this connection I also wish to show a chart of a case of pneumonia. M. R. C., aged thirty-two years. Was taken ill April 11, 1912. First seen by me evening of April 12th. The characteristic symptoms of pneumonia were at that time not present, and being unable to see him next day, I did not discover that he had pneumonia until Sunday morning, when I found all the characteristic symptoms, with consolidation of both lower lobes, and the temperature, pulse, and respiration as indicated on the chart. As soon as possible I obtained some pneumococcus vaccine and administered two c. c. that afternoon. The consequent drop in temperature was to my mind remarkable. The left lower lobe cleared to some extent shortly afterward; the left upper and middle lobes becoming involved about that time. Two doses were repeated the next day. On Tuesday, the right lower lobe had cleared to some extent, and the right upper lobe was involved completely. We had, therefore, during the course of the disease, complete consolidation of all the lobes. Subsequent injections and the course of the disease are indicated by the chart.

This case was seen by Dr. James D. Heard several times in consultation, and while he had no experience with this method of treatment in pneumonia, did not object to its use. It would seem from the study of this chart, that after the first fall in temperature, the subsequent injection held the disease in check and hastened the crises in the subsequently involved lobes (see chart). While one case is not by any means sufficient evidence of positive therapeutic value, this chart is highly suggestive. Reports from my colleagues, some of whom use this vaccine intravenously, bear out the idea that possibly a real specific for pneumonia has been found in Schafer's vaccine.

JENKINS ARCADE.

THERAPY OF SYPHILIS.

BY J. L. MORTIMER, M. D.,
New York.

Pathologist, Hospital for Deformities and Joint Diseases; Clinical Assistant, Medical Division, Post-Graduate School and Hospital.

More than four centuries ago the European physicians recognized or became acquainted with syphilis and at almost the same period scientific medicine began to employ mercury as a remedial measure. And yet it is but during the past eight years that our understanding of the etiology and pathology of this malady has so improved that we are in a position to replace the purely empirical by a true rational treatment, a therapy whose principles are not supported on hypothesis and theoretical speculation, but on positive objective facts and observations. In fact seldom has such eminent progress been attained in one branch of medicine in so brief a period as in syphilology. Of importance is the fact that the modern syphilis therapy is the fruit of the employment of series of scientific discoveries under the branches of etiology, diagnosis, experimental pathology, and therapy.

As you know, three great discoveries form the basis of the modern syphilis therapy:

1. The discovery of *Spirocheta pallida* by Schaudinn. Until of late we lacked the evidence that the spirochete was the cause of syphilis. This has been proved by experimentally producing syphilis through the inoculation with spirochetes. To prove that spirochetes are genuine Schaudinn's, we employ the convenient and quicker examination with the *Dunkelfeld* or dark field and Burie's Chinese ink.

2. The discovery that syphilis is inoculable on monkeys by Metchnikoff and Roux, thereby destroying the old dogma that syphilis is only a disease of mankind, and which finally created the possibility of studying experimentally a large number of problems under the pathology and therapy of syphilis. The work on this line promises to be of value since Bertarelli, Levaditi, and others succeeded in proving that not only monkeys, but also rabbits are favorable for experimental syphilis investigations.

3. The employment of the Bordet Gengon serodiagnostic methods for syphilis by A. von Wassermann and his associates, Neisser and Bruck. The reaction is so complicated that it must be carried out in large laboratories by biologically trained investigators with a large quantity of material at hand, for the most skilled may make errors when a few sera are examined. Errors are avoided where a large number of sera and antigen extracts are employed.

WHAT BENEFITS HAS THERAPY DERIVED FROM THESE DISCOVERIES?

1. Through serodiagnosis, as well as through experimental findings, it is most probable if not certain, that without a specific treatment a complete cure of syphilis cannot be attained. Every case of syphilis must be treated and in an intensive manner.

2. A complete cure does not signify immunity from reinfection. Only by still existing infection a form of immunity exists; a refractory state against a new infection. This is especially found during the early years of the disease.

On the other hand superinfection is quite possible during the first weeks, postinfection, either with one's own or with a strange virus, provided no general constitutional saturation, especially of the skin, has taken place. We then speak of multiple chancres.

Reinfections have long been known, and if they were comparatively rare it is due to the rarity of complete recoveries, and I believe that in the future we shall see more reinfections on the same individual since the modern treatment leads or will lead to a rapid cure of the syphilitic disease.

All these experiments have lead to the conclusion that artificial immunity, either active or passive, cannot be attained.

3. We, therefore, are obliged to employ chemotherapy. For centuries, mercury, and of late arsenic therapy, has indirectly benefited by the growth of diagnosis through the following facts:

(a) The discovery of the spirochete allows us to make a diagnosis in many cases of very fresh infection; this we were unable formerly to do. We

are in a position to pronounce erosions, etc., as syphilitic primary lesions.

(b) Serodiagnosis provides us with diagnosis in cases and in stages in which all clinical findings are helpless. We all know how difficult it formerly was when we were confronted by the question, Are we dealing with an absolutely cured patient or with a latency of the disease? Now we are in a position to give a definite verdict in a great number of cases that were formerly symptomless. A positive reaction is a genuine symptom of disease. A sign of still existing disease is the presence of spirochetes in the body. In every case of distinct, positive reaction, tertiary or metasymphilitic manifestation may develop when no therapeutic measures are employed. Therefore, we are now enabled to treat patients, first, in whom we are unable to find other evidence of disease, when formerly we discontinued treatment though infection still existed; and, second, since cases where syphilis was not suspected we were influenced by the history and absence of symptoms. Serodiagnosis is therefore indispensable in all symptomfree syphilis. It alone can aid in deciding the duration of treatment to obtain a complete recovery. It is therefore hard to understand why this aid serum diagnosis is not employed to a greater extent nowadays. Every person in whom we have the slightest suspicion of a known or unknown syphilis infection, should be investigated serodiagnostically in order to expose this masked infection, and therefore allow us to produce a cure of the diseased condition and prophylaxis for the dreaded parasyphilitic disturbances.

As a general therapeutic principle, every syphilitic should receive treatment as soon as possible after infection. It is proved through animal experimentation that greater success can be attained the sooner treatment is begun after infection. The analogy between the results of animal experiments and human syphilis is shown by the serodiagnostic findings, that it is easier to change a positive into a negative reaction with good treatment in the early days after infection. But if the disease has established itself for a longer period, then we see that even with the most intensive therapy we are unable to obtain a negative reaction. It may be assumed that we are here dealing with nests of encapsulated spirochetes into which the therapeutic agent cannot penetrate. In the early period we have the best chances with a preventive, abortive therapy to prevent chronicity and general metastasis of the virus, to attain what Ehrlich correctly named the *therapia sterilisans magna*.

When shall we start treatment? The sooner the better; that is, as soon as the diagnosis of syphilitic primary lesion can be made clinically (through the character of the lesion, the history, and the course), finding of spirochetes or serodiagnostically. There is not the slightest doubt that the finding of the spirochetes is the most important and leads us most frequently to an early diagnosis.

What are the proper methods and remedies to employ in the preventive abortive treatment? Most important is the general constitutional method of treatment, for in man we have in all cases to deal with a generalized saturation of the body with the virus soon after infection.

REMEDIES.

1. Mercury not only relieves symptoms, but also is a destroyer of spirochetes, and therefore is a true syphilis remedy.

2. Iodides have slight curative properties.

3. The most important progress as a specific remedy has been made with the organic arsenic preparation. The first valuable step was made by Uhlenhuth and Hoffmann, who published results with atoxyl. For the following success of the arsenic therapy we are indebted to Ehrlich, who recognized the true chemical constituents of atoxyl therapy, making it possible to produce other organic arsenic preparations. The pinnacle of his chemical and animal experimentation was the discovery of arsenophenglycin (418) and dioxydiamidoarsenobenzol (606), commercially known as salvarsan, the latter being the strongest spirilla and spirochete destroyer and the most suitable for the treatment of both animal and man.

The benefits derived from mercury must not be forgotten, and it must be employed, except when it is contraindicated or in refractory cases. The advantage that salvarsan possesses over mercury is the rapidity of destroying the spirochetes, and it is therefore suitable in the abortive therapy. Every fresh infected individual must receive salvarsan injection at intervals, two or three times, with an additional mercurial course.

The importance of the abortive therapy may be appreciated when we consider that the most dreaded consequences of syphilis, tabes, paresis, and aortic disturbances, when once started, cannot be cured, even with arsenobenzol. All we can hope for then is to bring the condition to a standstill. Our purpose must therefore be to prevent the approach of parasyphilis by as early an attack upon the infection as possible, for we are unable to tell how soon these degenerative processes start after infection.

Of eminent significance is the property that salvarsan possesses of being a powerful spirillocide and its production of rapid cicatrization of primary and secondary lesions, thereby removing the danger of contagion. Even when recurrences occur after salvarsan, they are so isolated and localized that, from the standpoint of contagion, they are not very dangerous. After salvarsan treatment the antibodies increase and the destruction of the spirochetes produces antitoxic substances that aid in the cure of the disease. The injection of serum from patient or the administering of milk of mothers or wet nurses treated with salvarsan influence congenitally syphilitic children surprisingly, with the disappearance of symptoms and an improvement of the general constitution.

The fact that contagion can be removed swiftly and agreeably with one or several injections is the most important aspect of the Ehrlich discovery. Patients who formerly objected to the disagreeable mercurial treatment, some refusing to take it, accept the salvarsan therapy. The period of confinement is shortened and the ultimate cost is less.

The rapidity of action of salvarsan is an indication of lues of vital organs in which the general destructive form known as malignant syphilis causes ulcerous processes and irreparable damage,

as in syphilis of the brain, severe ulceration of the mucous membranes of the nose, etc.

As a substitute for mercury salvarsan is employed in—

1. Mercury idiosyncrasy.

2. In patients who react slightly or not at all to mercury.

3. In severe paronychia, leucoplakia, etc., which mercury does not influence, but where salvarsan shows brilliant results.

4. In susceptibility of intestines and kidneys, and disturbances of other organs where we wish to avoid mercury. Observations up to the present show that salvarsan is less toxic upon the organs than mercury. Even the disagreeable stomatitis is done away with. It may be here contradicted by men who have had no unfavorable experiences with mercury in hundreds of cases, but may I ask if mercury accomplished what it should have? Recovery, veritable recovery? If so, then why the number of aneurysms, of aortic diseases, of tabetics, of paresics, and tertiary syphilitics? Why the great number of early deaths among the syphilitics? Quite different is the picture when the energetic therapy of mercury is employed; here we find after effects that are not produced by salvarsan or only to a slight degree.

The injury to the nervous system which is attributed to the action of salvarsan has not been proved, and is probably due to a recurrence of the luetic process. Formerly such complications were not diagnosed as syphilitic, for there may have been no etiological relationship between syphilis and these nervous disturbances.

Occasionally the remedy does not act and recurrences appear. But in many such disappointing results, if an investigation is made as to how it was employed, in what single or total dose, and by what method we can be assured that the fault did not lie with salvarsan, but in the wrong employment of it.

To be sure, it is not magic and cannot fulfill every requirement, but it acts so well that we are fortunate to possess it and are duty bound to administer it to all syphilitics in all stages.

CONTRAINDICATIONS.

Advanced cachexia, tabes dorsalis and paresis, myodegenerations of the heart, and changes associated with advanced alcoholism upon the circulating system are contraindications to the use of salvarsan. All subcutaneous and intramuscular methods produce a deposit with prolonged action due to slow absorption. By the intravenous route the action is rapid and the duration of absorption is shortened. It is the most important and best method, convenient, and carried out with a comparatively simple apparatus, irrigator, rubber tube, and needle, and it is not followed by infiltration and necrosis.

Intravenous method: Begin with two intravenous infusion of 0.3 or 0.4 with an interval of three to eight days. A third may be given three or four weeks later, or a repetition of an intramuscular injection of 0.4 to 0.6, eight days after the second intravenous infusion.

It seems that the results of combined treatment with salvarsan and mercury are more satisfactory and lasting than if these remedies are employed alone.

The principle of the combined therapy is as follows: We wish to make an acute attack upon the spirochetes with their possible destruction, followed by a prolonged after treatment to act as a check to their redevelopment. We therefore combine 606 infusion with rapidly absorbable mercury preparations, and one that is slowly absorbed, such as oleum cinereum.

Serodiagnosticsly we can divide the syphilitics into two groups, first, those that show for a longer period recurrences and positive reaction, and therefore must receive a prolonged repeated treatment; and, second, those that show relatively quick and negative reaction, which continues and may exempt them from further treatment, though a negative reaction after the first cure proves to us that our remedy has been working successfully, but not that all the spirochetes have been killed. Only after continuous negative examination can we pronounce the patient cured.

We therefore possess wonderful weapons to combat syphilis. For the basis of this therapeutical progress we are indebted to Schaudinn-Hoffmann, Ehtchnikoff-Roux, Wassermann-Bruck, and Paul Ehrlich.

480 CENTRAL PARK WEST.

THE VALUE OF METEORISM OR TYMPANY IN PERITONITIS.*

BY BUDD VAN SIVERINGEN, M. D.,
Fort Wayne, Ind.

Several very severe cases of general peritonitis occurring in my practice within the last twelve months have caused me to change my ideas on the subject of the dangerousness of extreme tympany in cases of this character. My reflections on these cases have also led me to the belief that cathartics are not only many times needlessly employed, but employed with very disastrous results, as, for instance, in obstruction of the bowels, where the question of recovery or death often rests upon whether some physician has been persistent in his attempts to move the bowels by cathartics before calling in a surgeon. The irritating drugs given under these circumstances cause a pouring out into the lumen of the bowel of serum, which is a good medium for bacterial growth and the consequent production of toxins which when absorbed determine the fatal issue, in spite of the fact that the mechanical difficulty (the obstruction) may have been relieved.

The prevailing opinion and practice in cases of general peritonitis, is stated by Moynihan in his *Abdominal Operations*, p. 84, as follows:

A further point to be considered in all these desperate cases, when distension, even to paralysis of the gut, is present, has reference to the need for evacuating the contents of the intestine by enterotomy or enterostomy. There can be no question that in many cases a free evacuation of the stagnant gas and fecal material is entirely an advantage. The intestines are little likely to regain their power of contraction when distention has passed beyond a certain point, and when this power returns, there seems to be a return also of the rapidity of absorption of the

intestinal contents. These are of an intensely toxic character, as we know by abundant painful experience and by the experiments of Kader. The emptying of the intestine should, therefore, be considered an almost routine practice. If carried out in the manner described elsewhere, with the help of a glass tube inserted in the bowel, upon which the gut is drawn, the emptying of the intestines is a simple, speedy, and satisfactory matter. The opening is made as low down in the intestine as possible.

Dr. Andrew McCosh has suggested and I have frequently acted upon this important suggestion—that a large dose of magnesium sulphate should be introduced into the intestine, high up, for the purpose of insuring a return of peristalsis. . . . The bowels should be encouraged to act as soon as possible by the administration of turpentine enemata or by injection of glycerin.

It is the purpose of these remarks to take issue with these generally accepted views. Tympany as a symptom of general peritonitis has been regarded as a very dangerous complication. When extreme, it is said to exert a great upward pressure on the diaphragm which in turn compresses the lungs and interferes markedly with the action of the heart.

Some textbooks assert that cyanosis is in some cases the result of tympany; that enough of the lung tissue is compressed actually to interfere with the aeration of the blood. They also assert that the pressure exerted upon the heart may be responsible, in and of itself, for the fatal termination.

To disprove the first, it is only necessary to call to mind the small amount of lung tissue needed to supply the necessities of the body. We have all seen at autopsy most extensive pulmonary lesions which destroyed a half or three quarters of the pulmonary tissue for breathing purposes without the production of any great degree of cyanosis during life. In pleural effusion cyanosis is not always the most pronounced symptom, and it is inconceivable that abdominal tympany should cause as much loss of pulmonary function as many cases of unilateral, pleural effusion, which is not incompatible with life even though one lung be completely collapsed.

Then, too, the heart is not usually injuriously affected by mere pressure, especially if exerted only one side. Very great displacement of the heart is seen in Pott's disease, in mediastinal tumors, and in left sided pleural effusions. We have all felt its impulse on the right side in the latter disease. These effusions may persist or go unrecognized for months in some cases, and death, when it does occur, is not attributable to pressure on that organ.

Again, it is inconceivable that abdominal tympany should exert the same amount of pressure upon the heart that a large, left sided pleural effusion does. I myself have never seen its impulse above the fourth interspace in peritonitis.

So we think the profession should get rid of its fear of tympany which it bases upon mechanical grounds. We shall always fear tympany and dread to see it develop in peritonitis to any marked degree, because it indicates the spread of the disease and its severity, but do not let us fear its possible injurious pressure effects upon the thoracic viscera.

It might be well to inquire at this point. What is tympany? And we reply that it is an increased collection of gas in the bowels. But why should we have an increase of gas in the bowels when the peritoneum is inflamed? The patient may have been purged and starved before the symptom appeared so that we cannot say that it arises from fermenta-

*Read before the Fort Wayne Medical Society, April 8, 1912.

tion of foodstuffs, because the alimentary tract is absolutely devoid of food material, and we therefore recognize a different etiological factor, namely, paralysis of the muscular coat of the bowel which allows the gas always present there to expand.

For our present purpose it is unnecessary to do more than say that this paralysis is probably toxic in origin and comparable to that which occurs in other infections, as, for instance, bronchopneumonia. Let us try to imagine now the effect on absorption and exudation of ballooning the bowels to their utmost. It must be at once apparent that all parts of the bowel throughout its entire extent are subject to the same pressure, inside as well as outside, and that the walls of the bowels are everywhere equally compressed.

This pressure must very materially lessen the rate of absorption through the lymphatics and is therefore a conservative process, because the slower the rate of absorption the less the dose of poison in the circulation at any one time and the more time allowed to the body for making its own antibodies. This same pressure influences in a mechanical way the amount of exudation, and it seems to me undoubtedly true that this same pressure is a most important factor in limiting the spread of the inflammatory process.

Viewing tympany as a beneficent symptom in peritonitis it therefore follows that one should look with disfavor upon methods adopted to correct or modify it. When laparotomy is performed in a case of general peritonitis which has originated from a perforated appendix, one should be satisfied with the removal of the cause, if possible, and the establishment of drainage. Efforts to relieve the tympany by incising one or more loops of bowel and expressing the gas and fluid contents or the insertion of a Paul's tube are worse than useless, unless absolutely necessary to replace the intestines in the belly. In the first place the emptied loops soon refill and test to the fullest one's line of sutures which may not be able to stand the strain, the resulting leakage only adding fuel to the flame. In the second place the absorption of toxins is more rapid until such pressure is reestablished. This absorption of toxins, however, occurs from the peritoneal cavity and not, as Moynihan thinks, from the lumen of the bowel. If cathartics have been withheld there should be very little material of any kind within the intestinal lumen, because the patients themselves usually resist any attempt at feeding if such attempt is injudiciously made, and in the presence of a belly full of pus it is not necessary to look any further for toxins.

The injection of magnesium sulphate solution into the bowel during operation as advocated by McCosh is, in the light of this argument, very bad practice. This is so, not only because it is wrong to administer any cathartic, but because magnesium sulphate under these conditions is a poison capable of producing a lethal result. Boos, of Boston (*Journal of the American Medical Association*, December 10, 1910), establishes this point beyond controversy, showing that the right way to give magnesium sulphate is in dilute solution, and that when given in this way it is not absorbed and does not produce any poisonous effects, but when given in concen-

trated solution or even in dilute solution, if obstruction of any kind exists, absorption occurs and poisoning ensues. He reports ten cases with six fatalities.

We should not wish for peristalsis in these cases, and while the paralysis of the bowel exists we cannot get it anyway, no matter what dose of cathartic medicine is employed, so that the only effect such medication has is to increase the patient's nausea, vomiting, and general distress.

We should regard this symptom then with favor and allow it to remain as long as it will, because it is our friend. When the patient begins to pass gas by the bowel we then know that prognosis is better, the paralysis is recovering, the inflammation subsiding, and the body's defenses against the poison are being perfected.

It is sometimes difficult to refrain from making attempts to relieve the tympany on account of the importunities of friends or nurse or consultant. The most I ever agree to now is the colon tube or a small, stimulating enema, and then only after the passage of flatus has indicated the recovery of power to some extent in the bowel wall. Day after day may pass without a fecal discharge, and day after day the importunities of nurse and family are listened to but the cathartics resolutely denied. It may be that a week has elapsed since the last movement, but if no opiates are being given one should rest easy and stand by his convictions, with the full assurance that the bowels will resume their function when the necessity for their doing so arises. I have lately seen two desperate cases recover under this line of treatment.

Abstracts and Reviews.

CHRONIC INTESTINAL STASIS.*

By W. ARBUTHNOT LANE, M. B., F. R. C. S.,
London, England.

At first the views expressed with regard to the far reaching effects of intestinal stasis, and the causes of this condition, together with the suggestion of the suitability of the operative treatment, were heralded with expressions of disbelief and were looked upon with contempt as being wild and fantastic, and rather in the nature of a "hobby." Now, it is pleasant to see that these heretical views are becoming more widely accepted every day by surgeons the world over.

The condition of stasis here referred to is to be understood as one in which there is an abnormal delay in the onward passage of the intestinal contents, such that there ensue excessive absorption of toxic products and the multiplication and spread of pathogenic microorganisms.

The primary cause of the stasis is different in different cases, but the ultimate outcome is much the same, whatever the cause. The usual factors are an abnormal angulation of the small intestine at the duodenojejunal junction, or a similar condi-

*Summary of a lecture before the Third Clinical Congress of Surgeons of North America, Hotel Waldorf-Astoria, New York. November 14, 1912.

tion at or near the ileocecal junction. The formation of a kink in either of these localities results in a delay of the passage of the effluent and a secondary congestion and overfilling of the intestine. This causes traction to be exerted upon the intestinal attachments at the sites of kinking. Such traction, when long maintained, results in the formation of fibrous bands to oppose the traction. These bands are the crystallization of forces and indicate the course of Nature in her attempt to counteract the effects of the traction. These bands are beneficial in the earlier stages, but later they become highly detrimental by increasing the acuity of the angulation of the intestine. Such bands are most commonly situated at the duodenojejunal and ileocecal junctions. The appendix is often found to be the cause of angulation in the latter region. In these cases it is found adherent posterior to the cecum and directed upward. Chronic appendicular inflammation may in itself be the starting point of the formation of bands of adhesions which ultimately cause kinking of the ileum.

The results of these kinks with their ensuing obstruction to the onward passage of the intestinal contents, lead to the development of chronic inflammation of the parts above the obstruction. Further, the intestinal bacteria have opportunity for rapid multiplication, and they pass upward into the duodenum, and even into the bile passages. The bacteria may also escape from the intestine and infect the liver, kidneys, or other organs of the body more or less remote. The common cause of the symptoms which are usually ascribed to duodenal ulcer, is stasis at one of the two points mentioned with resulting infection of the duodenum and, in some severe cases, the actual development of ulceration in this portion of the intestine.

Radiographical examination with the bismuth meal yields most striking confirmation of the views with regard to stasis. The bismuth is often seen to be retained for many hours in the duodenum, and all this time that portion of the intestine is struggling to accomplish the passage of the material through the obstruction. Radiographs, and better, fluoroscopic examinations have repeatedly shown the presence of violent contractions in the duodenum, and in one patient each of these contractions was definitely associated with excruciating paroxysms of pain in the epigastrium.

The radiographs further show the accumulation, for many hours, of large quantities of bismuth in the small intestine when the kink is ileocecal. Many observers have been wholly unable to demonstrate this kink by radiographic means. This failure is due to faulty technique. The cecum should be displaced upward and the patient should be photographed while lying on the face.

Aside from the ordinary symptoms of intestinal intoxication and stasis, it may be mentioned that constipation is not always present, but, on the contrary, it is quite frequent to find the patient suffering from an abnormal frequency of movement, and some fluidity of the stool. There are, also, many and diverse reflex neuroses and intoxications among which trifacial neuralgia is not very uncommon. Diagnosis is not a difficult matter if the assistance of the radiographer is invoked, and if he

understands the proper methods for the demonstration of the kinks.

Treatment has been discussed at length in previous articles, and it will suffice, for the present discussion, merely to mention the fact that the only satisfactory results are obtained by short circuiting the large intestine by implantation of the ileum into the pelvic colon, or by excision of the large intestine. These are to be combined with proper and efficient correction of the kink at the duodenojejunal junction, if present.

Therapeutical Notes.

Treatment of Influenza.—Frank S. Meara, in the *Interstate Medical Journal* for December, 1911, states that in the typical attack of influenza, usually abrupt, the patient should be put to bed, with a hot water bag at his feet, given a hot drink of tea, water, or lemonade, with or without whiskey, and well covered with blankets until the febrile reaction begins. A cool or tepid sponge bath, containing a little alcohol, and cold cloths or an ice bag on the forehead, may then be employed to relieve the headache and general pains. A saline cathartic should be given.

On the first day, no food should be offered; but thereafter fluids in the shape of milk or gruels may be given and later soups, eggs, and cereals.

Medicinally, Meara employs the following combination:

R Acetanilidi,grs. xxiiss;
Sodii bicarbonatis,grs. xv;
Caffeina citrata,grs. viiiss.
M. et divide in capsulas No. xv.

Although the dose of acetanilid is thus only 1.5 grain, the results obtained have been excellent, and Meara has felt no inclination to experiment with the less toxic antipyrine and acetphenetidid. Where the attack is severe, the capsule is given every hour for four doses, then every two hours, on the first day. If, as is usual, this brings relief from discomfort, and lowers the temperature, the capsules may be given the next day at three hour intervals and the next at four hour intervals. If the attack is prolonged, the drug should not be continued, as its benefit is confined to the early, sthenic stage.

Burney Yeo is convinced of the utility of quinine, after two or three days' preliminary treatment with salicin. He gives the former in doses of one to three grains every three or four hours, either in lemon juice, or better, in a solution of citric acid.

For tracheitis, Meara recommends a mixture in equal parts of oil of turpentine, spirit of camphor, and olive oil; flannel is saturated with it, laid upon the chest, pinned into the night shirt, and left on overnight. The patient inhales the fumes, and relief of soreness and cough is afforded. Inhalations of compound tincture of benzoin, a teaspoonful or two in a pitcherful of hot water, or a teaspoonful to a pint in an inhaler, or a few drops of a saturated alcoholic solution of menthol on water, also prove grateful. If the cough is more harassing, codeine, grain $\frac{1}{8}$ to $\frac{1}{4}$ every two, three, or four hours, or heroine, grain $\frac{1}{12}$ to $\frac{1}{10}$, may be used.

Where, in conjunction with rhinitis, there is much

frontal headache, sinus involvement is usually present. One should endeavor to shrink the mucous membranes enough to open the ducts and passages to the sinuses, thereby allowing drainage. This may be done by spraying with one to 10,000 epinephrine solution and then with a preparation containing 10 to 30 grains of menthol, 20 grains of camphor, 20 minims of eucalyptol, and 3 minims of oil of rose, in 2 ounces of an oily excipient. If the antrum is involved, the head should be turned to the sound side, hanging slightly over the edge of a pillow, to facilitate the exit of fluids. If the nasal discharge is marked, extract of belladonna, $\frac{1}{2}$ grain, or atropine, 1/120 grain, should be taken every two hours until it stops, and thereafter every four to six hours; due watch should be kept for signs of intolerance.

Convalescence should not be hurried. The diet should be liberal, light rubs or massage given, and plenty of fresh air secured. If the patient is not content after honest adoption of these measures, strychnine in doses of 1/40 to 1/30 grain, three or four times a day, may be tried.

Sodium Salicylate in Influenza.—A. C. Stark, in the *Practitioner* for March, 1911, states that in influenza of the ordinary type he considers sodium salicylate the best drug to use. To give quinine to such patients adds to their discomfort. After a mercurial purge, the author uses the following combination, which, according to his statement, will arrest the affection in two days:

R Sodii salicylatis, }
Potassii bicarbonatis, } ana grs. x;
Tincturae nucis vomice, ℥x;
Aque chloroformi, q. s. ad. 3i.

M. Sig.: To be taken at one dose every two or four hours.

Relief of Pain in Influenza.—W. W. Tompkins (*West Virginia Medical Journal*) states that he has found, in a large number of cases, that the following combination acts very well in relieving the pains in the head and body, reduces the temperature, and does not produce cardiac depression or gastric irritation:

R Acidi acetylis salicylici, grs. v-viiss;
Acetphenetidini, grs. iiss;
Caffeina citrata, gr. 1-2
Misce.

Treatment of Severe Pain in Influenza.—Harnsberger (*Dietetic and Hygienic Gazette*) observes that some influenza patients, generally of the robust class, suffer intense pain in the forehead, temples, and eyeballs, which is not relieved by the ordinary analgetics, nor even by morphine and atropine, hypodermically, unless it be at the expense of the excretory and secretory functions—an undesirable condition in a toxic state. He advises combining 1/100 grain of hyoscine hydrobromide with the morphine and atropine. This will not only relieve the severe cephalic pain, but also overcome the rhachialgia and myalgia present in these cases. Even mild cases receiving hyoscine were observed to improve more rapidly than those treated without it.

Whether there is marked pain and prostration in influenza or not, the bed is the safest place for the

patient, both during the attack and through convalescence. Harnsberger begins the drug treatment with calomel, and follows it with potassium bicarbonate, thirty to sixty grains every four hours, the patient drinking a glassful of water after each dose. Abstinence from food is required for forty-eight hours. The potassium bicarbonate is pushed to systemic saturation in the first three days, after which it is generally no longer necessary.

Diphtheria Antitoxine in Influenza.—Darier (*Clinique ophtalmologique*, March, 1912) advises the prompt administration of diphtheria antitoxine by mouth in influenza and other acute infections:

R Seri antidiphtherici, 3vss;
Syrupi acidi citrici vel rubri, 3j;
Aque, q. s. ad. 3v.

M. Sig.: One tablespoonful every hour.

Treatment of "Stomach Coughs" in Influenza.—Thomson (*Practitioner*) uses the following preparation in the treatment of the so called "stomach coughs" often met with in influenza:

R Acidi hydrochlorici diluti, ana 3ss;
Acidi nitrici diluti, }
Glycerini, 3ss;
Quassia, 3ss;
Aque, q. s. ad. 3vi.

M. et ft. infusum.

Sig.: One tablespoonful in a wineglassful of water three times a day.

Treatment of Respiratory Complications in Influenza.—MacKenzie (*Practitioner*) uses heroine hydrochloride in doses of from 1/36 to 1/12 grain at intervals of one or two hours, in cases where the cough is dry and paroxysmal. Where it is frequent and severe, the following linctus is effective:

R Morphinae hydrochloridi, gr. 1/4;
Apomorphinae hydrochloridi, gr. 3/4;
Acidi hydrochlorici diluti, ℥xx;
Syrupi pruni virginianae, 3ss;
Aque, q. s. ad. 3ii.

Fiat linctus. Sig.: One drachm to be taken as required.

In the presence of bronchitis, the following mixture is useful:

R Liquoris ammonii citratis fortioris (N. F.)... ℥xviii;
Potassii citratis, gr. xv;
Vinii ipecacuanhae, ℥v;
Aque, q. s. ad. 3i.

M. Sig.: To be taken at one dose.

Fresh air is the best prophylactic against influenza, and it is also a sovereign remedy for both the acute and chronic manifestations of the disease in the respiratory tract.

Prophylaxis of Influenza.—W. Shropshire, in the *Texas State Journal of Medicine* for November, 1911, emphasizes the necessity, in any effort at prevention of this disease, of disinfecting all excreta, especially those from the air passages. At present one should probably consider all patients in danger for thirty days from the time of onset.

Arsenic as a Prophylactic against Influenza.—E. E. Miller (*Medical Record*) considers arsenic in a one to 800 alcoholic solution, given in five minim doses, morning and evening, to be an efficient prophylactic against this affection.

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THE LAY PRESS AND INCIPIENT CANCER.

The third congress of the surgeons of North America, which closed lately in New York, left behind it an injunction to the lay press to scatter broadcast the information very necessary to women as to the signs of and symptoms of oncoming carcinoma or sarcoma, in a word, cancer, particularly of the uterus. We give below this information in a form which we believe will prove acceptable to any daily or weekly journal and which is thoroughly understandable by any grown woman. It is not too much to ask of the lay journals that they print this or a similar warning at least once, preferably in display type, or, better still, once a month or so for one year.

THE WARNING SIGNS OF CANCER.

Any lump appearing in the breast should be at once shown to the family physician. The safest treatment is immediate removal; for the so called benign growths may become malignant or cancerous.

Of cancer of the womb, the first symptom in practically all cases is a slight discharge ("whites" or leucorrhœa), with an occasional spot of blood. This slight streak of blood is seen usually after extra exertion at housework or lifting, after a long walk, or after a douche. Any such "spotting" of either the discharge or the clothing is a danger signal in a woman over thirty-five years old.

Cancer of the womb is, in the beginning, essentially a local process, and consequently can be permanently removed by operation. There are no grounds whatever for the belief that it is a "blood" or constitutional disease.

Over fifty per cent. of cases of uterine cancer are of the "neck" of the womb.

A certain authority on cancer, whose opinions are entitled to respect, has said that very often in the beginning stages of cancer of the womb, women will boast of their recent increase in weight and strength and perfect health; shortly afterward, however, this pleasant feeling is followed by an increasing mental and physical apathy, or lack of interest in the surroundings, and by a strong inclination to sleep.

When consulting your physician concerning the "spotting" of the clothing, insist upon a microscopical examination of a scraping from the womb. This is the only sure test. If it turns out that no cancer is present, your mind is set at rest, an ample reward for the slight trouble of an examination.

The only cure for cancer is thorough and complete removal of the affected part or organ. No pain is felt during an operation, and the risk to life is very slight. The occurrence of cancer in an organ is Nature's rather cruel announcement that she no longer needs that organ, which should be at once removed. In other words, cancer is a sign of degeneration.

Treatment by plasters is well known to the regular medical profession and is used for very small growths. In larger cancers the application of plasters is terribly painful and an open wound is produced, unsightly and dangerous.

No internal medicine, or so called "blood purifier," clover, prickly ash, burdock, wintergreen, poke root, iodide of potash, or their combinations, has ever cured a cancer. If any growth ever disappeared after the patient had been taking such a mixture, that is sure proof that no cancer existed.

Place no faith, therefore, in the statement of friends concerning their own experiences, or concerning cases known to them, where cancer was cured by any other method than complete removal by a surgeon. They are mistaken, and one of the most extraordinary things about mistaken people is their insistence that they are right; the less the likelihood of their being right, the more emphatic and angry will they become. People do not lose their tempers over absolutely proved facts.

INFLUENZA.

A few cases of *bona fide* influenza having been called to our attention, we deem it advantageous, should an epidemic develop, to place before our readers, in the department of Therapeutical Notes, what methods of treatment are advocated by various internists at the present time.

The view that the influenza bacillus is a necessary factor in the production of this disease is steadily losing ground. Curschmann asserted five years ago that in forty-nine out of seventy-seven typical cases, the Loeffler bacillus could not be discovered. The pneumococcus was present in large numbers while in a small proportion the streptococcus and staphylococcus predominated, but with complete absence of the influenza bacillus in all. Various combinations of these germs, excepting the latter, but including also *Streptococcus mucosus capsulatus seu catarrhalis*, are frequently met with. All these

cases, reported by a steadily increasing number of observers, differ in no way in their symptomatology from those in which the Pfeiffer bacillus is found; they are all characterized by suddenness of onset, severe aching in the back and legs, high temperature with relatively slow pulse, catarrhal symptoms of the respiratory tract, and marked prostration. When we consider, moreover, that the influenza bacillus is found in conditions which fail completely to present the characteristic features of the disease, we cannot but conclude that there is good ground for Leede's belief (*Zeitschrift für Hygiene und Infektions Krankheiten*, lxxi, 3, 1912) that influenza is a symptom complex which may be evoked by different kinds of bacteria, the most prominent of which is the pneumococcus. Hence the need of always being on our guard against pulmonary complications in these cases.

THE QUESTION OF CULTURE.

We have accorded considerable space in another column to the letter of Arcadius Avellanus, which will read to many of our colleagues like a bit of parchment or vellum saved from the middle ages. The writer, like many another scholar of a vanishing type, can see culture only in books, oblivious of the fact that all knowledge worth while is won at first hand and that filtered through the written word is comparable to the acquaintance with anatomy, for example, which might be acquired through the study of drawings or photographs of the dissected body. Medicine is a science, at least we hope it is rapidly becoming so, and the preliminary education of the student should be directed toward familiarizing him somewhat with scientific technique, the power of direct observation, and the ability to draw for himself conclusions *a posteriori*, and not only *a priori* after the manner of the schools. Science discards one generalization after another, and will probably continue perforce to do so; therefore, reverence for the past is no necessary part of the scientist's equipment. It is, *pace* our correspondent, not of the first importance to a doctor of medicine to know why English students wear gowns, or even exactly what the C. on the thermometer stands for. What he must know is how to interpret a temperature above 98.8° F. To the scientist books are valuable as records, but they are not permitted to usurp the place of first hand observation. A man who enters the fields of science must cast aside the ancient snobbery of the classical education devised for idle "gentlemen," and not be afraid, as those worthies were, to soil his hands by actual contact with facts. In the obsolescent aca-

demic curriculum thinking is unnecessary; hardly more is needed than a good memory and due reverence, not only to the words of the authors themselves, but to the iron traditions of interpretation which one professor after another has handed down unchanged from generation unto generation. The academic graduate is fitted above all else to hold a chair in some faculty of arts whence he may transmit his stereotyped learning; if he enters into the clear, cold air of science, he finds he has much to unlearn, first of all his attitude of acolyte or disciple.

We do not wish to be understood as underestimating the immense value of the ancient languages to a few chosen spirits. Where the old languages have served mainly as an introduction to the real culture of the Greeks and Romans, where there is an innate appreciation of art, literature, drama, and outlook on life, a priceless treasure has been acquired. This occurs, however, only in isolated instances. We have all known men who could read at sight every line of the old authors, yet who were blind to all that made the ancient civilizations glorious. The academic course as it exists at present is a survival of the time when Latin was the language of intercourse among scholars, and science as we know it did not exist. It is too often forgotten that Aristotle and Plato were observers at first hand, and, like the great poets and dramatists, drew their inspiration direct from life. There is much to be seen now that did not exist in those days, and it is the example of these men we should follow, and not confine ourselves, as bookish men do, to a study of their records.

THE METRIC SYSTEM.

An army surgeon has recently been reprimanded for prescribing ten times the quantity intended of a drug. As this is the kind of error predicted by the opponents of the metric system, now compulsory in prescription writing in the army, the incident makes one suspect that such errors are more common than is generally believed. There is no doubt that for accuracy in laboratory work no other system is possible, but there are not a few who assert that it is wrong to consider it the best for every other use. European peasants, here and there, use their old units, in spite of the fact that none but the metric have been legal for a century or more. Their difficulty seems to lie in the conversion of one unit into another, since all the old systems grew up gradually to supply the need of easy mental calculations, each measure being a half, a third, or quarter of another, or a multiple of these easy fractions. In

addition, the units were adopted because they were of a convenient size for particular purposes,—inch, foot, or mile for distances; gill, pint, quart, or gallon for beverages; grain, pound, or ton in weights. The metric measures are often found to be too large or too small in practice. Some physicians find that the gramme is too big for some things and the milligramme too small, while few think of the intermediate measures.

Psychological research has long shown the impossibility of remembering long numbers and the ease with which small fractions can be recalled. We instinctively think of doses as a few grains or an easy fraction of a grain, not as a large number of milligrammes.

There is certainly a good deal of truth in these contentions, which may account for the slowness with which the medical profession has taken up the system for prescription writing. Thirty or forty years ago we were all convinced it would be universal by this time, and rather rejoiced in it, and, though a large number of practitioners now do use it, the active opposition is growing because it is so easy to make an error of one decimal place when dealing with long numbers such as the milligramme in ordinary doses.

There seems to be no likelihood of either Great Britain or the United States adopting the metric measures exclusively. In spite of teaching both in the schools, we cling to the more simple measures. It seems to be a psychological necessity, so the old grain and ounce may be with us forever, and we will always think in these terms. It is time, then, to inquire what advantage a metric prescription possesses and its necessity of constant translation. It will no doubt be easier for the few who read foreign literature, but a man learned enough to translate the words will also be able to translate the measures. The British, led by Herbert Spencer, assert great advantage in their pounds, shillings, and pence because of the small numbers, and point out that we really abandoned our decimal system by adopting half, quarter, and eighth dollars (the "bit"). They say the same of their grains, drachms, and ounces, so convenient for mental arithmetic. The metric measures certainly have not become universal, though favored by law. The army has given them up in its supply table to a large extent, and they may soon vanish in prescription writing, as a matter of safety to patients. The wonder is that there has not been more trouble, when one thinks of the ease with which a decimal point may be displaced and a grave error thereby made. As a matter of fact, is not our old system quite as simple as the metric? The grain, scruple, drachm, ounce,

gill, and pint are exactly the doses we prescribe. While we must constantly strive for accuracy of measurement, our directions are seriously handicapped in ninety-five per cent. of our patients by the fact that the only measures they have are spoons, cups, and tumblers, whose capacity is far safer to explain in grains, drachms, and ounces than in large numbers of milligrammes, grammes, or cubic centimetres. A letter in this issue of the JOURNAL points out the ignorance in the middle west of pharmacists themselves concerning the metric system. Valuable as the latter is for laboratory use and strictly scientific calculations, we fear we are yet far from its universal adoption.

SOME IRONIES OF THE LAW.

In our department of Medical Law, on page 1082, will be found an account of the transfer of a farm valued at some seven thousand dollars to a physician on consideration of an annual payment to the former owner of four hundred dollars and professional care as long as he should be "within the limits of the physician's practice." This does not seem to the professional mind to be by any means an outrageous payment for the very valuable services tendered, for the physician subsequently sold the farm for \$8,118, receiving only \$1,618 in cash, and allowing the remainder, \$6,500, to remain on mortgage. When the heirs, however, began an action against the physician, the latter promptly lost his trifling profits, for the offer of professional services had not been incorporated in the deed of sale. Similar kindness of heart on the part of the physician, common enough, as we all know, is liable to be misinterpreted by a commercially minded public, and judges obviously represent crystallized public opinion, which never has grasped and never will fully comprehend the professional attitude of mind toward a patient. Commercially, a doctor is usually as guileless as a sheep, and he should never wander in business bypaths without a competent legal guide.

A PARAMICROBIC VIEW OF TUBERCULOSIS.

At a session of the Académie de médecine held at Paris from October 29 to November 5, 1912, Reynier (*Semaine médicale*, November 6th) pointed out that compulsory notification of tuberculosis was extremely vexatious to patients and their relatives, and could never give more than contingent results from a prophylactic viewpoint. As a matter of fact, continued Reynier, tuberculosis was a disease of organic decay, without which infection had little effect, and it was against this decay that we ought mainly to fight; its causes were poverty, poor moral and physical hygiene, and above all alcoholism. He recommended, therefore, that the academy adopt a resolution to the effect that it was the duty of every landlord to disinfect all his vacant lodgings, and the

health officer should have the power to compel this to be done immediately after a death from tuberculosis; furthermore, the law regulating and limiting the sale of alcohol should be rigidly enforced.

TO FRIENDS OF THE LATE DR. FRANK P. FOSTER.

Friends of the late Dr. Frank P. Foster, for many years editor of the *NEW YORK MEDICAL JOURNAL*, who may have in their possession letters or communications from him, or who have information of interesting episodes in his career, are requested to communicate with his son, Mr. Hugh Molleson Foster, 501 West One Hundred and Twenty-first street, New York, who is engaged in the preparation of a memorial of his father and seeks the assistance of the friends of the latter in collating material for this purpose.

Obituary.

ROBERT FLETCHER M. D.,

of Washington, D. C.

Dr. Robert Fletcher, principal assistant librarian, Surgeon General's Office, Washington, D. C., and for thirty-four years active in the redaction of the *Index Catalogue* and *Index Medicus*, died, in his ninetieth year, on the morning of November 8, 1912, of gradual enfeeblement resulting from a long illness and his advanced age. Doctor Fletcher was born at Bristol, England, March 6, 1823, was educated at the private schools of his native city, began the study of law, but decided to take up medicine, and devoted five years to its study at the Bristol Medical College and the London Hospital. In 1844 he received the diplomas of the Royal College of Surgeons and the Society of Apothecaries, and having determined to settle in the United States, removed to Cincinnati, Ohio, in 1847. At the outbreak of the Civil War, Doctor Fletcher was appointed surgeon of the First Regiment of Ohio Volunteer Infantry, and on November 20, 1863, was commissioned surgeon, United States Volunteers. He served in the field until 1863. On March 13, 1865, he was breveted lieutenant colonel and colonel of United States Volunteers, and was honorably mustered out on August 31, 1867. In 1871, Doctor Fletcher was ordered to Washington and to duty in the Provost Marshal's Bureau of the War Department. In 1876 he was transferred to the Library of the Surgeon General's Office, and became ultimately the leading spirit in the redaction of the *Index Catalogue*. In 1879 Doctor Billings and Doctor Fletcher were associated in the editorship of the *Index Medicus*, and when the latter journal was revived by the Carnegie Institution in 1903, Doctor Fletcher was its editor in chief for nine years (1903-9). He was also lecturer on medical jurisprudence at the Columbian University, Washington, D. C., in 1884, professor 1886, and lecturer on the same subject at the Johns Hopkins University during 1897-9. His loss will be felt by the profession at large and by his many friends.

Medical Law

VII. MISCELLANEOUS REGULATIONS AND MATTERS.

The relation between the physician and patient, like that between the lawyer and client, is one of trust and confidence, and in case of a gift by the patient to the physician the courts require the physician to show that the gift was fairly and honestly given and that the transaction was above suspicion.

In the case of *Matthaei vs. Pownall*, 84 Atlantic Reports 444, a patient, seventy-six years old, had conveyed a farm of 100 acres to his physician. The value of the farm was found to be from \$7,000 to \$8,000. The actual consideration given by the physician was a contemporaneous writing whereby the physician had agreed to pay the patient \$400 a year in quarterly payments during the remainder of his life. This transaction occurred in December, 1906, immediately after the writing of a letter by the physician to his patient wherein he referred to the difficulty of getting farm work done, and stated that he had been informed the farm would not bring over \$40 or \$50 an acre, and that he thought there was little prospect of getting \$80 an acre. He reminded the patient that in an effort to sell he would be put to the expense of advertising and, even if he were successful, that he would have the risk of investing the proceeds. He then referred to an offer made him by the patient and added, "I am willing to accept your offer by obliging myself, my heirs, and assigns, to pay you \$100 every three months as long as you live and not to sell the farm until I have satisfied you that you will be assured in your income. I will also promise to give you free professional care so long as you are within the limits of my practice, and will cheerfully administer to your wants and comforts. . . . If you need extra money I will feel obligated to give it. . . . If you think favorably of the proposition let us get it fixed up promptly."

The next day the doctor brought the deed and contract to the patient and they were executed. Shortly afterward the doctor rented the farm for \$525 per annum, and about fourteen months after the transaction he sold the farm for \$8,118, \$6,500 of the purchase price remaining on mortgage, the remainder being paid in cash.

About twenty-three months after the original transaction the patient died, and his heirs commenced an action to have the mortgage assigned to them and to compel the physician to account for the cash consideration paid him on its sale, and also for all income from the property.

Upon the hearing the chancellor found that the patient, Matthaei, had sufficient mental capacity to understand what he was doing, that he had offered the farm to others on practically the same conditions that he had conveyed it to the defendant, and that in making the conveyance he acted on his own desires.

Upon the further conclusions of the chancellor, Mr. Justice Moschzisker, of the Supreme Court of Pennsylvania, said:

The Court below correctly concluded that the defendant by reason of his position of attending physician, occupied a confidential relation toward Matthaei, which was

strengthened by "the close personal relationship between the two men"; that Doctor Pownall, in his letter of December 26, 1906, assumed a high moral ground that would naturally lead Matthaei to repose trust and confidence in the defendant's fairness and desire to do right; that the parties by reason of their confidential relationship "did not deal at arm's length"; that the consideration paid for the property was "wholly inadequate inasmuch as it represented only five per cent. annually of the fair market value of the farm, and also in view of the old age of the said Matthaei and the certainty of his death within a short period"; that the confidential relationship between the parties and the inadequacy of consideration threw "the burden upon the defendant of showing that the agreement of December 27, 1906, was fair, conscionable, and proper beyond a taint of suspicion of fraud, undue influence, or overreaching on the part of the defendant"; and that the fact that Matthaei "may have offered his farm to other parties upon similar terms does not absolve the defendant from the duty of showing that this contract was fairly and properly entered into."

After this correctly stating the law, the learned court below reached the final conclusion that, since Matthaei was in possession of all his faculties and knew what he was doing, there was:

"No presumption from all the evidence in the case that would warrant a finding that the conveyance was obtained by fraud," stating, "We are averse to assenting to the proposition that because a man has been a friend of the grantor for a number of years, and acted in a professional capacity, that therefore it must be assumed that he exercised undue influence upon the grantor to obtain a grant of land," and dismissed the bill. In this there was error.

Commenting further upon the case the justice refers to the fact that the farm in question constituted about four fifths of Matthaei's estate; that the contract as executed did not contain either of the stipulations in the letter that the patient should have free medical services or that restrictions should be imposed upon the doctor's right to dispose of the property. He then said:

The defendant failed in his answer and proofs to give explanation of these material omissions, to claim or show that Matthaei had understood or assented to the same, that he had been advised of his rights, that the papers as executed had been explained to him, or that it had been suggested to him in any manner that he should have the counsel of an attorney or other advisor in this transfer to his friend, neighbor, and physician, of the greater part of his small estate.

The justice then quoted the following rule laid down in 30 Cyc.:

The relation of the physician to his patient is one of trust and confidence, and while such relation does not *per se* forbid the acceptance of a gift or conveyance by him from his patient, the burden is on the physician to prove that such gift or conveyance was fairly and honestly obtained and that the transaction was above suspicion.

He then proceeds:

This is a correct statement of the law. In Darlington's Estate 147 Pa. 624, at pages 629, 632, we said that: "The confidential relation is not confined to any specific associations of the parties to it. . . . It embraces . . . physician and patient, and, generally, all persons who are in any relation of trust and confidence. When the relation exists, the consequent duties and obligations are perfectly well established by long settled law. . . . A confidential adviser is not permitted to avail himself either of the necessities of his client or his good nature, liberality, or credulity, to obtain undue . . . bargains. . . ." The burden of establishing perfect fairness, adequacy, and equity is thrown upon the confidential adviser, and, "if no such proof is established, courts of equity treat the case as one of constructive fraud."

In a case like the present, where a conveyance of the greater part of the grantor's estate was made to one occupying a confidential relation toward him, it is not necessary that actual fraud should appear. As early as 1850,

in discussing this subject in Greenfield's Estate, 14 Pa. 489, at page 505, we said that the evidence did not "justify a charge of actual fraud. . . . But in spite of this concession, a rule of public policy and pure morals, founded in long experience of the human heart and knowledge of man's cupidity, interposes. . . . The case represents what is called a constructive fraud, springing from the confidential relations existing between the parties. This peculiarity, withdrawing it from the operation of ordinary rules, throws upon the beneficiaries the duty of showing expressly that the arrangement was fair and conscientious, beyond the reach of suspicion. In requiring this, courts of equity act irrespective of any admixture of deceit, imposition, overreaching, or other positive fraud. As it has often been said, the principle stands independently of such elements of active mischief. It is founded upon a motive of general policy, and is designed to protect a party, so far as may be, against his own overweening confidence and self-delusion, the infirmities of a hasty judgment, and even the impulses of a too sanguine temperament." And in *Miskey's Appeal*, 107 Pa. 611, referring to the same general subject, at page 630, by quotation from a noted English case, we said that the question was not whether the grantor "knew what she was doing, had done, or proposed to do, but how the intention was produced; whether all that care and providence was placed round her as against those who advised her, which from their situation and relation with respect to her they were bound to exert on her behalf."

Applying these principles to the present case, the undisputed facts constitute a constructive fraud, which the defendant failed to overcome by any sufficient evidence. The fact that Matthaei had no mental weakness, and the further fact that he had suggested to others that he desired to get rid of his farm and was willing to part with it on some such terms as those contained in the contract between Doctor Pownall and himself, were not sufficient to meet the burden cast upon the defendant. That burden could only have been met by clearly showing that the value of the grantor's property and the inadequacy of the bargain he was making had been honestly brought home to him, or that he had been given the opportunity of independent advice; and in this particular case the departure in the contract as actually made from the terms suggested in the defendant's letter should have been explained, in order properly to sustain the *bona fides* of the transaction. None of these things was done, however. On the contrary, it was shown that not even the witnesses to the documents knew their nature, and that the only attorney present was the one acting for the defendant. As we said in *Darlington's Estate*, *supra*, at page 635, of 147 Pa., 23 Atl. 1046, 30 Am. St. Reports 776, such transactions are not condemned because of mental incapacity on the part of the grantor or proof of actual fraud, but because of the absence of that full and satisfactory proof that the contract in question was the free and intelligent act of the party, fully explained to him, and done with a thorough knowledge of the bargain and all its consequences.

News Items.

Changes of Address.—Dr. Hector Jacques, to 177 Fairmount Street, Fitchburg, Mass.

Dr. Fenton B. Turck, of Chicago, to 14 East Fifty-third Street, New York. Doctor Turck is locating in New York as a director of a research laboratory founded to further the study of the cause and treatment of diseases of the digestive tract.

Dr. Frédéric S. Mason, to 12 Fifth Avenue.

Obstetric Clinics in Brooklyn.—During the months from November, 1912, to April, 1913, inclusive, Dr. Albert M. Judd will hold obstetric clinics at the Kings County Hospital on every Thursday from 10 a. m. to 12 m. except on those Thursdays which are holidays. He will endeavor to make them as practical as possible and would welcome any graduate of medicine.

A Course of Lectures on Diseases of Old Age (Geriatrics).—Professor I. L. Nascher, formerly of Fordham University, New York, will deliver a course of lectures on this subject at the College of Physicians and Surgeons, 517 Shawmut Avenue, Boston. First lecture, Thursday, November 14th, at 8 p. m.; second, third, and fourth lectures on the afternoon and evening of November 15th, beginning at 10 m. at the same place.

Higgins Memorial Hospital Dedicated. The new hospital, erected in Olean, N. Y., as a memorial to the late Governor Higgins, was dedicated with elaborate ceremonies on Saturday, November 2d. The building, which cost \$50,000, is a gift to the city from Mrs. Frank Sullivan Smith, a sister of the late governor.

Sanitary Science at Tulane University, New Orleans.

Three series of courses in sanitary science have been started at Tulane this session, for medical, science, and engineering students specializing in sanitation. The medical graduate in this course expects to become the health officer on boards of health. Instruction and laboratory work in sanitary microbiology will be given by Professor Creighton Wellman and his assistants in the School of Tropical Medicine.

Wholesale Arrests by the Post Office Department.

Nearly two hundred men and women have been arrested in sixty-nine cities and towns in twenty-nine States by the Post Office authorities on the charge of circulating through the mails matter suggesting or promoting criminal practices, packages containing substances or drugs to be used for unlawful purposes or nostrums containing poisonous substances. The majority of the persons arrested are manufacturers of these preparations, but a number of them have been using the title of doctor.

Ontario Physicians Want Pay for Reporting Communicable Diseases.

There is a movement on foot among the physicians of the Province of Ontario to secure concessions from the Provincial Government with regard to reporting cases of communicable diseases. The doctors contend that since they are put to considerable trouble in making returns to the local registrar of all cases of communicable diseases, they are entitled to fees. It is believed that by paying the doctors for their trouble more complete reports will be obtained. In England doctors receive a small fee for each case of communicable diseases reported.

Honors for Doctor Carrel.—On Saturday morning, November 16th, the College of the City of New York gave a reception to the President of the United States and paid a tribute of appreciation to Dr. Alexis Carrel, of the Rockefeller Institute, who has recently been awarded the Nobel prize for his researches in medicine. A distinguished company was present, including President Taft, the French ambassador, the officers of the college, Mr. Robert Bacon, former ambassador to France, the president of Columbia University, the president of the Japanese Women's University of Tokio, and various city and State officials and distinguished citizens.

New York and New England Association of Railway Surgeons.

The twenty-second annual meeting of this association was held in the Hotel Astor, New York, on Thursday, November 14th, under the presidency of Dr. Walter Lathrop, of Hazleton, Pa. There were two sessions, one in the morning and one in the afternoon, many papers being read and discussed, the principal paper at the afternoon session being by Dr. John B. Murphy, of Chicago, whose subject was Surgery. Officers for the ensuing year were elected as follows: President, Dr. John W. Le Steur, of Batavia, N. Y.; first vice-president, Dr. C. A. Pease, of Burlington, Vt.; second vice-president, Dr. W. H. Marcey, of Nashua, N. H.; corresponding secretary, Dr. George Chaffee, of Brooklyn, N. Y.; recording secretary, Dr. J. H. Reid, of Troy, N. Y., and treasurer, Dr. J. K. Stockwell, of Oswego, N. Y.

Important Announcement by Department of Public Charities.

The Department of Public Charities of the City of New York makes the following announcement in regard to public clinics held in the amphitheatres and operating rooms of the hospitals of the department:

Ordered: That on and after the first of October, 1912, all clinics held in the amphitheatres and operating rooms of the hospitals of the Department of Public Charities shall be open to duly licensed graduates in medicine and to the students in all regularly organized medical schools and colleges, and further be it

Ordered: That tickets shall be issued by the secretary of the Department of Public Charities for distribution by the secretaries of the several medical schools and societies of the city of greater New York which will entitle the registered holders thereof to admission to these said clinics
MICHAEL J. DRUMMOND, Commissioner.

Cornell University Medical School to Affiliate with New York Hospital.—Mr. George F. Baker, president of the First National Bank, has given a large sum of money, said to be over \$2,000,000, to the New York Hospital, on condition that it affiliate with Cornell University Medical College. A part of this gift will be used to erect a new hospital building as near to Cornell Medical College as possible, and the rest, it is said, will be spent in equipping laboratories and employing medical and surgical experts, or for any purpose deemed desirable by the governors of the hospital.

A Pellagra Hospital Proposed.—The members of the Thompson-McFadden pellagra commission, who spent last summer in Spartanburg, S. C., conducting investigations into the cause and prevalence of pellagra, and the best means of treating it, desires to continue their work there next summer, but if they return they will require a hospital, where a closer study can be made of the patients and better facilities will be available for their treatment. There are nearly five hundred cases of pellagra in Spartanburg County, mostly in mill villages. Dr. A. D. Cudd, Dr. J. L. Jeffries, and Dr. S. T. Lancaster are especially active in promoting the project, and all county physicians are giving their support.

Postgraduate Degree in Surgery Recommended for American Physicians.—At the third Clinical Congress of Surgeons of North America, held in New York last week, it was the unanimously expressed will of the congress that every physician should be compelled to take a degree certifying that he was a competent surgeon before he was permitted to perform surgical operations. A resolution was adopted proposing that college and other authorities should be given the power of granting these supplementary degrees, and that the standard should be set by national legislation. It was introduced by Dr. Franklin H. Martin, of Chicago, secretary general of the congress, and the following committee was appointed to formulate a standard of requirements: Dr. Edward Martin, of Philadelphia; Dr. Rudolph Matas, of New Orleans; Dr. W. W. Chipman, of Montreal; Dr. John M. T. Finney, of Baltimore; Dr. Franklin H. Martin, of New York; Dr. Albert John Ochsner, of Chicago; Dr. Emmet Rixford, of San Francisco; Dr. John B. Murphy, of Chicago; Dr. F. J. Cotton, of Boston, and Dr. George Emerson Brewer, of New York. Doctor Martin recommended that a special college of surgeons be established, with the power to grant a supplementary degree to that of doctor of medicine, which would be in fellowship in the proposed college; in other words, he recommended the granting of a postgraduate certificate similar to the F.R.C.S. of Great Britain.

Resolution on the Death of Dr. James Edward Newcomb.

The faculty of Cornell University Medical College record with deep sorrow the death of Dr. James Edward Newcomb, which took place at his summer home, Lake Kushaqua in the Adirondacks, on August 27, 1912. He was born in New London, Conn., August 27, 1857, and had consequently just completed his fifty-fifth year. He was educated at Bulky School, graduated from Yale University in 1880, and completed his medical course at the College of Physicians and Surgeons in New York City. Subsequently he became interne at Roosevelt Hospital, and since then practised in this city, confining his efforts to laryngology and rhinology. He was appointed instructor in laryngology at the foundation of Cornell University Medical College in 1898, and in 1911 was made professor of laryngology. He was an able and fluent writer, contributing many valuable papers to his special branch of surgery. The high esteem in which he was held by the profession is attested in part by his election to the following societies: American Laryngological, Academy of Medicine, West End Medical, Alumni Roosevelt Hospital, and Hospital Graduates. He was also consulting laryngologist to Roosevelt Hospital. Although suffering from a chronic ailment he worked bravely; never neglecting a duty and remaining faithfully at his post until the end.

Resolved, That these expressions of regret be spread upon the minutes of the meeting of the faculty and that a copy be forwarded to the widow of Doctor Newcomb as a token of the esteem and admiration in which he was held by his colleagues.

(Signed) WILLIAM M. POLK,
FREDERICK WHITING,
ROBERT G. REESE.

Pith of Progressive Literature.

MEDIZINISCHE KLINIK.

October 6, 1912.

1. CASPER: Stones of Kidney and Ureter.
2. KAHLER: Advances in Laryngology and Rhinology in Twentieth Century (*To be continued*).
3. FLESCH: Application of Diagnostic Advances in Medical Insurance.
4. NEISSER: Examination of Diphtheria Bacilli and Fight against Diphtheria.
5. NYLMANN: Icterus simplex and Treatment in Child.
6. SYMPOSIUM on Early Rising after Operations and Childbirth (*To be continued*).
7. HIRSCHBURG: Erythipicum.
8. PIPER: Changes in Pressure in Cavities of Heart and Large Vessels.
9. KOCH: Iodine Mercury Combinations in the Organism (*To be continued*).
10. KAHANE: Physical Therapy in Habitual Constipation (*To be continued*).
11. PLUSQUEUX: Balneology and Climatology.
12. BARDLEBEN: Surgery of Pulmonary Tuberculosis and Pregnancy.
13. KAESS: Paralysis agitata, Result of Psychic Trauma.

October 13, 1912.

14. LÜBARSCH: Significance of Trauma in Origin and Growth of Tumors.
 15. SCHULTZ: Plethora abdominalis; Practical Significance.
 16. KAHLER: Advances in Laryngology and Rhinology in Twentieth Century (*Conclusion*).
 17. BÜCKER: Abortions with Intrauterine Pessaries.
 18. DECKER: Treatment of Radius Fractures with Schede's Splint.
 19. SILBERBERG: Vacuum Compressor as Aid to Common Röntgen and Palpatory Abdominal Examination.
 20. PETERSEN: Oscillation of Oral and Nasal Breathing Sounds.
 21. ENGEL: Therapeutic Influence of Venous Stasis on Insufficient Heart.
 22. FRANKENSTEIN: Withdrawal of Opium with Pantopon.
 23. SYMPOSIUM on the Question of Early Rising after Operations and Childbirth (*To be continued*).
 24. KROMAYER and TRINCHESE: "Refined Wassermann Reaction."
 25. KOCH: Iodine Mercury Combination in Relation to Organism (*Conclusion*).
 26. KAHANE: Physical Therapy in Habitual Constipation (*Conclusion*).
 27. DIETSCHY: Bacterial Examinations in Tuberculosis.
 28. FRIEDRICH: Advances in Röntgen Ray Domain.
- October 20, 1912.
29. SCHUSTER: Prophylactic Measures in Examining Nervous Systems of Accidentally Injured.
 30. BIELL: Tests for Hearing; Use in Civil and Noncivil Service.
 31. GRAETSSNER: Röntgen Proof of Injury of Spinal Column.
 32. RAMMSTEDT: Operation in Congenital Pyloric Stenosis.
 33. HAUSMANN: Topographical Sliding, Deep Palpation, and Clinical Significance.
 34. NATONKE: Case of Typhoid Sepsis.
 35. SYMPOSIUM on Question of Early Rising after Operation and Childbirth (*Conclusion*).
 36. AUMANN: Vaccination of Rabbits with Blood and Blood Serum in Syphilis.
 37. ROSENBERG: Experimental Diabetes; Relation to Glands of Internal Secretion (*To be continued*).
 38. ADAM: Newest Ophthalmological Literature.

October 27, 1912.

39. JOLLY: Atony of Uterus and Treatment.
40. HERING: Coefficients of post mortem Heart Contractions.
41. LUST: Cow's Milk Idiosyncrasy and Anaphylaxis.
42. PAWLICKI: Acute Infectious Nephritis.
43. MÜLLER: Therapeutic and Diagnostic Significance of Vaccination in Gonorrhea of Male.
44. BROEDER: Case of Syphilitic Icterus.
45. ZIEGENSPECK: Hydrastis and Synthetic Hydrastinin.
46. SCHEPELMANN: Anesthesia with Quinine Preparations, Especially with Sinecin.
47. BUCKY: New Blind Apparatus in Röntgen Illumination.
48. SCHLESINGER: Death Following Local Anesthesia.
49. KROMAYER and TRINCHESE: Answer to Sormani on Out-Castal Therapy in Pseudonegative Wassermann Reaction.
50. STEIGER: Experimental Hyperglobulia.
51. KAHANE: Physical Therapy of Heart Disease.
52. ROSENBERG: Experimental Diabetes and Relation to Glands with Internal Secretion (*Conclusion*).
53. HAENLEIN: Newer Literature of Pharyngeal and Laryngeal Tuberculosis.

14. Significance of Trauma in Origin and Growth of Tumors.—Lübarsch says there is no positive scientific proof that trauma is directly capable of producing growths. The observations and statistics concerning trauma and growths are not convincing, because, anatomical experience has shown that all kinds of morbid growths, including carcinoma and sarcoma, possess a long latent period and at times grow very slowly. Theoretically it cannot be gainsaid that trauma quickens the influences for growth, but this is very difficult to

prove in individual cases, because tumors do not grow at an even rate. Times of rapid growth give way to periods of slow growth. Experiments on the tumors of animals and the influence of repeated irritation on human tumors do not substantiate the theory that these factors exert an influence for rapid growth. A causal relation between trauma and tumor development is probable only when, 1, the trauma is so strong and localized that it can produce at the point of application marked and lasting changes and where the development of the tumor at that place is later noticed; and, 2, when the time elapsing between the trauma and the beginning of the growth is such that the nature and histological structure of the growth can be harmonized with it.

22. Opium Habit Cured by Pantopon.—Frankenstein reports the case of a nurse who, during a severe illness, began to take opium and after six and one half years was taking fifteen c. c. of laudanum daily. She came to the author for relief. He began to inject pantopon as an antidote because the effect produced by it is similar to that of opium. Twice daily a pantopon ampoule containing one c. c. of a two per cent. sterile solution of the drug was injected and the dose gradually decreased, until it became nominal. The course of treatment lasted two months, and with only a few days of listlessness the patient was able to attend to her duties.

24. "Refined Wassermann Reaction."—Kromayer and Trinchese say that the negative result of a "refined" Wassermann test, as worked out by them, has a positive significance—the probability of healing syphilis.

33. Topographical Sliding and Deep Palpation and Its Clinical Significance.—Hausmann has perfected a method first described by Obratow which enables the physician to determine the position, course, and characteristics of the digestive tract by palpation in from twenty to ninety per cent. of the different divisions of the tract. The author had shown that beside the pars cæcalis ilei, no other part of the small intestine is palpable. It is the method of palpation and not peculiarly gifted fingers which enabled him to obtain otherwise unattainable results. The method is entirely different from the usual one, which is calculated to map out the parenchymatous organs and tumors. The finger tips perform a straight sliding motion at right angles to the axis of the part from one side to the other. If we have a part of the gut, or the pars pylorica, the plastic impression of a cylinder or tube with a contracture below and above is obtained. When the anterior paries is far removed from the posterior, or when the palpating part escapes from the fingers to the posterior part of the abdomen, then deep palpation is used. Its purpose is to reach the posterior wall and to perform the sliding motions on the parts resting thereon. The slightly curved fingers are pushed deeply but gently into the abdomen, and the sliding movements performed during expiration. The position of the transverse colon in the same individual is very changeable. This spontaneous mobility is due: 1. To the active contraction of the longitudinal or circular musculature or to both together; 2, as the result of shifting gas or liquid contents of the large

intestine or of the neighboring parts; 3, ingestion of food causes a rapid and marked rise of the sunken transverse colon due to the muscular reflex action of the colon and the mechanical dilatation of the stomach after ingestion brings about changes in the position of the colon; 4, defecation causes a sinking of the colon; 5, the position of the colon depends on the tension of the abdominal muscles; 6, the sinking of abdominal contents into the sac of hernias displaces the colon; 7, sitting posture and lying down have different effects upon the position of the colon.

39. Atony of Uterus and Its Treatment.—Jolly says that post partum hemorrhage may be due to a tear, or to atony. The latter usually brings about a delayed hemorrhage; blood appears in gushes, is dark red, and mixed with large coagula. Causes of atony are: 1. Pathological labor, for instance, excessive dilatation of the uterus (hydramnios) or too rapid emptying of it; 2, disturbances in the third stage, as incomplete separation of the placenta or myoma of the wall of the uterus. There are two main indications in the therapy: 1. To cause a contraction of the uterus; 2, to compress the placental site, when the uterus will not contract and the bleeding does not cease. In most cases the ergot preparations, especially secacornin, and manual massage of the uterus will prove sufficient. Should these remedies prove ineffectual, then intrauterine procedures must be tried, hot or cold douches, introduction of a gloved hand into the uterine cavity, the removal of placental remnants, and, lastly, tampons of sterile gauze. In extreme cases compression of the aorta with Momburg's tube or Gauss's tourniquet must be resorted to. The author describes his own method of introducing a large rubber bag, made to fit the average uterus, which is injected with weak lysol solution to expand it; it has proved efficacious in severe cases, first, by stimulating the inner surface of the uterus to contract, and, second, by compressing the placental site.

43. Therapeutic and Diagnostic Significance of Vaccination in Gonorrhea of the Male.—Müller asserts that the skin prick and general reactions and the positive absence of the Herd (?) reaction are the only available diagnostic points in these cases. The latter manifests itself in increased secretion with sometimes a return of the gonococcus and a more pronounced cloudiness of the urine. The negative result of reactions does not eliminate gonorrhea. Therapeutically, the vaccine therapy is fully incompetent in the presence of open mucous membrane gonorrhea. In chronic gonorrhea small doses of 2.5 grammes arthogen, and one gramme of Menzer vaccine each week, continued over long periods of time, are worth a trial because they seem to bring about an involution of mucous membrane infiltrates. The usual local treatment must not be dispensed with when using the vaccine.

PRAGER MEDIZINISCHE WOCHENSCHRIFT.

October 3, 1912.

1. ARTHUR SELL: Heart and Vessels under Influence of Carbonic Acid Baths.
2. JOSEF VOGL: Röntgen Diagnosis of Military Tuberculosis.

October 10, 1912.

3. JULIUS LOWY: Influence of Röntgen Rays upon Internal Diseases (To be concluded).
4. RUDOLF WEISSMANN: Therapeutic Importance of Lecithin

October 17, 1912.

5. JULIUS LOWY: Influence of Röntgen Rays upon Internal Diseases (Concluded).
6. MICHAEL URFAN: Graf Kaspar Sternberg. October 24, 1912.
7. ALEXIUS TICHLER: Field of Vision in Ciliated Scotoma. October 31, 1912.
8. FRANZ BARBACHZI: Diagnosis of Hourglass Contraction of Stomach.

MONATSSCHRIFT FÜR KINDERHEILKUNDE.

October, 1912.

1. T. PEISER: Simple Method of Treating Acute Nutritional Disturbances in Infants.
2. KATHE NEUMARK: Late Appearance of Vaccination Pustule during Measles.
3. A. HAYASHI: Hyperemia of Lung Secondary to Patent Ductus Botalli.
4. VOGEL: New Organization for Treatment of Infants with Enteritis.

1. Disturbances of Nutrition in Infants.

Peiser calls attention to the fact that Finkelstein's Eiweiss milk is very good in enteritis in infants, but that it is very difficult to make and costs in Germany about twenty-seven cents a quart. To overcome this difficulty Peiser has used a buttermilk mixture which resembles Eiweiss milk very closely but which is very easy to make and which costs only about eight cents a quart. This mixture can be made at home with lactic acid tablets. It is called kefir. Kefir or lactic acid tablets are added to cow's milk. The process of making takes about twenty-four hours. To lessen the acidity of kefir five c. c. of a twenty per cent. solution of sodium carbonate are added to one pint of the mixture. To this is then added one pint of water. The resulting mixture contains about 1.5 per cent. sugar, 0.34 per cent. salts, 1.5 per cent. casein, and 1.7 per cent. fat. Eiweiss milk contains about the same amounts of sugars and salts, but more casein and fat. Eiweiss milk contains three per cent. casein and 2.5 per cent. fats. This resulting mixture is given raw because it tastes better than boiled milk and has the same action as boiled milk. Peiser's results, which are given in tabulated form in his article, seem to be just as favorable as those which have been published for Eiweiss milk. The method of procedure is the same as with Eiweiss milk.

ZEITSCHRIFT FÜR UROLOGIE

Volume VI, No. 5.

1. S. GROSGLIK: Bladder Insufficiency from Prostatic Atrophy.
2. A. GÖTZL: Leiomyoma of the Bladder.
3. G. V. ILYES: Polycystic Kidneys.
4. M. VON ROHR: Modern Cystoscopes.
5. M. A. MECHARINSKY: Bladder Syphilis.

Volume VI, No. 6.

6. I. S. KOLL: Colon Bacillus Infection of Urinary Tract.
7. A. HEYMANN: Rare Case of Kidney Tuberculosis.
8. M. DUFAUX: Lubricant for Instruments.

1. Bladder Insufficiency from Prostatic Atrophy.—Groslik reports twenty-three cases. The patients all suffered from chronic incomplete retention of urine with bladder dilatation and nocturnal incontinence. Eight cases gave a history of gonorrhea, three of syphilis. In all but four or five patients (in whom the prostates were normal) the prostate was atrophied. In most patients cystoscopy showed marked trabeculation of the bladder. In all but four patients the internal urethral orifice was distorted. The author concludes that the bladder insufficiency caused by atrophy of the prostate does not differ clinically from that caused by hypertrophied prostate. The cause of the bladder insufficiency is not yet clearly understood. After supra-

public prostatectomy, three of the patients entirely recovered bladder function, and the author concludes that in these three cases the contracted bladder neck was the obstacle causing bladder insufficiency. The author recommends suprapubic prostatectomy. Among many cases operated in by the Bottini method, he has obtained but one partial success.

5. **Bladder Syphilis.**—Mucharinsky reports the case of a patient who had complete retention of urine for fifteen days. He gave a history of two attacks of gonorrhea. One year previously he had chancre and roseola, but when examined there were no visible symptoms of syphilis. Cystoscopic examination showed hyperemia of the bladder neck and an ulceration as large as a quarter dollar in the *bas fond*. Upon one injection of mercury the retention immediately ceased. After five injections the patient was nearly well.

7. **Renal Tuberculosis.**—Heymann gives a history of a young woman, who, in May, 1910, had painful urination. Tubercle bacilli were found in the urine. Catheterization of the ureters gave no urine from the right kidney and normal urine from the left. In February, 1911, Casper found the bladder congested in places and tubercle bacilli in the urine, and catheterized the two ureters at different times, getting normal urine from both kidneys. The diagnosis was made of primary vesical tuberculosis. The patient became worse under treatment. On July 10th, another cystoscopy showed a second ureter behind the left ureteral orifice. The Luys separator showed normal urine from the right side and urine with tubercle bacilli from the left. Operation showed the left kidney to have two pelves, the superior connecting with a tuberculous superior pole of the kidney, and the inferior connecting with a normal inferior pole.

BULLETIN DE L'ACADÉMIE DE MÉDECINE.

October 8, 1912.

1. C. ACHARD and G. DESBOIS: Local Treatment of Vincent's Angina with Arsenobenzol.
2. H. VINCENT: Serious Epidemic of Typhoid Fever at Avignon, June-August, 1912. Results of Antityphoid Vaccination.
3. JULES BOCKELÉ: Excision of Two Metres of Intestine (Ileum, Cecum, and Ascending Colon) in Form of Appendicitis. Hitherto Described.

1. **Treatment of Vincent's Angina.**—Achard and Desbois report a severe case of this affection in which application to the ulcers of a preparation consisting of 0.2 gramme of salvarsan in six or eight c. c. of glycerin, three times daily, led to complete recovery in four days. They refer to the good results similarly obtained by various authors in other affections of the mouth associated with spirillar infection, viz., in mercurial stomatitis, ordinary ulcerative stomatitis, and noma. The measure is both simple and quite harmless. Probably the best method is to dip cotton in glycerin, next into the arsenobenzol powder, and then to apply it to the diseased area. The diagnosis between Vincent's angina and local syphilitic manifestations is sometimes perplexing. In the former, mercurial treatment may do harm, Möller having reported a case in which gangrene and death resulted. Applications of arsenobenzol, on the other hand, entail no risk in such cases; if the condition present is Vincent's angina, prompt recovery is likely to ensue, while if syphilis is present, the drug may prove advantageous in antagonizing the local spirillar in-

fections which are sometimes present in addition, and may even be of some use in improving the syphilitic lesions themselves, whether primary, secondary, or tertiary, as has been pointed out by Bertran, Melun, and Zils.

2. **Antityphoid Vaccination in Epidemic at Avignon.**—See editorial article in our issue for October 26th, page 861.

3. **Resection of Intestine in a Newly Discovered Variety of Appendicitis.**—Boeckel refers to a condition occurring as a result of adhesion of the extremity of an infected appendix to the anterior layer of the mesentery, close to its line of origin. Upon perforation of the appendix toxic and infectious products pass through the mesentery, separate its two layers, and establish a new focus of infection which, by progressive enlargement, may attain a considerable size. In the author's case there was palpable, between the umbilicus and anterior superior spine, a mass almost the size of the fetal head, smooth, but slightly movable, painful, and relatively superficial. Fever being present and the general condition poor, an incision revealed a large matted aggregation of the deeper intestinal loops. In the attempt to free the cecum, the operator's finger punctured the wall of a large cavity, whence 400 to 500 c. c. of pus, with the characteristic odor of appendicular foci, was evacuated. This cavity extended backward and upward to the spinal column. The appendix could not be found. It was decided to remove the entire diseased area, with the matted intestines. After taking out eighty cm. of ileum and ninety cm. of cecum and ascending colon, to a point beyond the hepatic flexure, a laterolateral button anastomosis was established, tampons were inserted, and the greater part of the incision was closed. Complete recovery took place, although a second operation became necessary for the removal of the button. Examination of the specimen showed the appendicular lumen to be in direct communication with the pocket between the two layers of the mesentery.

LYON MÉDICAL

October 6, 1912.

- REVUELET: Vomica Resulting from Perforation of Right Bronchus Due to Perilaryngeal Suppuration.
2. E. NIVRON: Case of Poisoning by Datura Stramonium.

October 13, 1912.

3. F. LECLERE and J. CHALIER: Familial Hemophilia. Attempt at Autoserotherapy.

3. **Hemophilia.**—Leclerc and Chaliar report a case of hereditary hemophilia in which, in addition to numerous joint hemorrhages at different times, there developed suddenly in the night a large hematoma in the floor of the mouth and suprahoid region, interfering slightly with phonation and deglutition. Although the appearances were in some ways those of a phlegmonous inflammation, the absence of general reaction and knowledge of the patient's hemophilic condition led to the adoption of expectant treatment, with the result that the swelling disappeared in a few days. A careful study of the blood was made, and stress is laid on the presence of a marked leucocytosis (35,000), with a relative and actual increase in the lymphocytes (forty-two per cent.), and an actual increase in the eosinophiles. Coagulation occupied an hour and a half. The blood was found to have no anti-coagulant power when added to that drawn from

other individuals, but rendered much more rapid the contraction of the clot in blood from a pneumonia patient. There were no hemolysins. No evidences of disturbed internal secretory functions were noted. Calcium chloride in full doses seemed slightly to shorten the coagulation time of blood drawn from the finger, but blood taken directly from a vein showed no such change, coagulation being even slower than before. It was found that admixture of the patient's own blood serum with venous whole blood shortened the coagulation time of the latter by one half *in vitro*, but injections of the serum into the patient's own veins, on the principle of autoserotherapy, gave no result.

PARIS MÉDICAL.

October 26, 1912.

1. GILBERT: Essential Paroxysmic Hemoglobinuria.
2. CALOT: Treatment of Suburinary Tuberculosis.
3. DOPFER: Bacteriological Diagnosis of Bacillary Dysentery.
4. MOURE: Chronic Invagination by Intestinal Tumor.

2. **Tuberculous Abscesses.**—Calot states that failure to cure these abscesses has been due to the use of clumsy instruments, whereby fistulae remained after puncture; to lack of proper asepsis; and to improper technique, puncture being made too often or not often enough, or with improper liquids. He uses two solutions, one composed of oil, seventy grammes; ether, thirty grammes; creosote, five grammes; guaiacol, one gramme; iodoform, ten grammes; the other contains camphorated naphthol, two grammes, and glycerin, twelve grammes. The second solution should be shaken vigorously and injected as soon as made, as it is very unstable. In some cases the first solution suffices; when the abscess contains solid particles that stop up the needle, solution number two is used to dissolve them. Ethyl chloride is used for local anesthesia and tincture of iodine for asepsis. The skin should be punctured four or five centimetres from the abscess, and five punctures should be made at each sitting. Subsequent treatment, if necessary, may be made ten or twelve days later, and so on for some seven or eight sessions, the whole treatment frequently requiring three months. Calot asserts success in ninety-nine per cent. of cases. Bandages should be applied very firmly after the punctures and envelop the whole limb from the extremity up.

PRESSE MÉDICALE.

October 16, 1912.

1. HENRI ISCOVESCO: Lipoids of Ovary, Corpus luteum, and Testicle; Physiological and Therapeutical Properties.
2. DARIO MARACLIANO: Centrolateral Nerve Anastomoses from Experimental and Clinical Standpoints.
3. F. DUMAREST and C. MURARD: Causes of Variations of Prognosis in Pneumothorax Appearing Spontaneously in the Tuberculous.
4. ALFRED MARTINET: General Biological Law of Diuresis.

1. **Lipoids of Ovary, Corpus luteum, and Testicle.**—Iscovesco reports experiments which showed that there are present in the ovaries and testicles lipoids having the specific property stimulating the corresponding organs in other animals, without affecting any of the other internally secreting glands. These substances he designates as *homostimulins*. Thus by repeatedly injecting into rabbits the specific ovarian lipid, marked hypertrophy of the uterus and ovaries was induced, and similar enlargement of the male reproductive organs was caused by injections of the testicular homostimulins. From the therapeutical standpoint

the ovarian lipid proved very efficacious in amenorrhea, dysmenorrhea, disturbances due to ovarian insufficiency or the menopause, and chlorosis. It seemed to exert a marked tonic effect in senile debility. The testicular lipid was employed in hypochondriacs and neurasthenics with benefit. Nine aged men to whom it was given showed increased strength, and in four instances, lowered blood pressure. Experiments demonstrated that the action of these lipoids is exerted on the spinal centres; by using massive doses temporary paraplegia was produced in rabbits. Iscovesco states that he has also discovered homostimulins of the adrenals and thyroid. A lipid from the adrenals was found to antagonize the influence of the corpus luteum in bringing about uterine involution post partum.

3. **Prognosis of Spontaneous Pneumothorax in the Tuberculous.**—Dumarest and Murard maintain that the appearance of pneumothorax in tuberculosis is by no means as ominous an occurrence as some authors have believed. In eight of sixteen cases under observation, the complication exerted, on the contrary, a favorable effect on the course of the disease. Harm done by pneumothorax may be either immediate, when it is due to shock, very acute infection, or respiratory insufficiency owing to the presence of extensive lesions on the opposite side, or late, when it is associated with extension of the tuberculous process or the formation of a purulent exudate. Even where the latter complication occurs, the condition need not be considered very unfavorable, provided no pulmonary fistula persists. The empyema can be cured by repeated punctures, provided the latter be followed by endopleural injections of sterile gas, in order to maintain the lung in its collapsed condition. Where a pneumothorax is resorbed the pulmonary process takes a new start, as is the case with artificial pneumothorax by Forlanini's method. Aseptic spontaneous pneumothorax is possible, although uncommon. In any case, an open pneumothorax cannot be compared with a closed one, and no analogy can be drawn between a spontaneous pneumothorax, which is slow in advent, open, and often inopportune, and artificial pneumothorax, which is sudden, closed, and practised at the right time. The danger attending the latter procedure cannot, therefore, be judged by that associated with the condition as it takes place spontaneously. It is none the less true that spontaneous pneumothorax may in a few cases develop at the most favorable moment, and by leading to pulmonary collapse, arrest the tuberculous process in the lung.

4. **General Law of Diuresis.**—Martinet concludes that the urinary output is proportional to the sphygmoviscosimetric ratio (ratio of the pulse pressure to the viscosity of the blood) multiplied by the square of the combined cross sectional areas of the renal capillaries.

ARCHIVES DES SCIENCES BIOLOGIQUES, ST. PETERSBURG.

No. 2, 1912.

1. V. N. KLIMENKO: Antiwhooping Cough Serum and Mode of Employment.
2. I. G. SAVCHENKO and V. M. ARISTOVSKY: Importance of Reaction of Medium in Phagocytosis.
3. A. Z. BYLINA: Normal Pancreatic Secretion Is Sum of Nervous and Humoral Factors.
4. D. P. GRIGORIEFF: Intracellular Ferments and Chronic Infection.

ly high for males and slightly low for females, but this variation is very small and is in the proper direction, as females are likely to be susceptible, while the opposite is true of males. The formula

for the metric system is $\frac{\text{age} \times 5}{100}$ that is, multiply

the age of the child by five and divide the result by 100 by pointing off two places to the left; for the apothecaries' system merely divide the age by 20. i. e., $\frac{\text{age}}{20}$. In each case the resulting number is the

fraction of the adult dose which is to be employed.

3. **Tumor of the Adrenal Gland.**—Mursell describes the successful removal of a tumor about twice the size of the fetal head from the adrenal gland of a woman. The operation was done by the lumbar route and recovery was perfect, the patient leaving the hospital on the twenty-eighth day. The tumor was globular, with a dense laminated fibrous capsule, having thickenings on the inner surface which were made up in part of adrenal tissue.

4. **Ionic Medication.**—Finzi conducted several series of experiments to determine the depth of penetration of drugs by the ionic method. He finds that ferrocyanide ions can be traced through the skin and subcutaneous tissue into the muscles; they are seen in large amounts in the capillaries of the subcutaneous tissue. All tissues are stained blue, but the distribution is not uniform. The sebaceous glands and hair follicles are to a large extent unstained, which is probably due to the fat which they contain, this being a nonconductor of electricity. Ferricyanide ions give much the same results as those of ferrocyanide. Copper ions were deposited wholly within the epidermis, not even reaching the corium, and the deposit ran a short way down the hair follicles. Ferric ions gave results similar to those seen with copper. Ferrous ions, however, resembled ferrocyanide ions, except for a somewhat greater deposit in the epidermis. Calcium ions were found deposited in the corium, only a small amount passing through it.

6. **Peptic Ulcer.**—Watson reports the records of two patients having peptic ulcers in the esophagus, close to the cardiac end. In the first the condition was not diagnosed, even on laparotomy, and caused death by perforation into the left pleural cavity. In the second the diagnosis of gastric ulcer was made. In this case there was no perforation. In both the condition ended fatally and was found upon autopsy. Both patients were middle aged men.

LANCET.

November 2, 1912

1. J. G. ADAMI: Eugenics, "After the Third and Fourth Generations."
2. W. H. WHITE: Importance of Examining Urine Bacteriologically.
3. C. COOMBS, R. MILLER, and E. H. KETTLE: Histology of Experimental Rheumatism.
4. R. KNOX and R. W. A. SALMOND: Analysis of Injuries to Bones at Wrist.
5. C. E. LEV: Auricular Fibrillation.
6. C. H. MILLER: Auricular Fibrillation and Pregnancy.

1. **Eugenics.**—Adami disagrees absolutely with Weismann on the question of the lack of transmissibility of acquired abnormalities, and regarding the lack of effects upon the offspring of such abnormalities. To support his views, Adami cites the observations of Stockard, Carrière, and others and offers proof of the following contentions: The

essential germ plasm which conveys the heritable characters from generation to generation is not inert and incapable of being influenced, but, on the other hand, it is susceptible to physical and chemical agents affecting the body and circulating in the blood; poisons and intoxicants, and the toxins of infectious disease exert a deleterious influence upon the offspring, being apt to cause relative infertility, lowered vitality with a tendency to death during infancy, instability, and deficient development of the nervous system manifest by convulsions, epilepsy, imbecility, and insanity; and with some intoxications the offspring are rendered more susceptible to that particular agent which has poisoned one or the other parent.

3. **Histology of Experimental Rheumatism.**—Coombs, Miller and Kettle conducted a series of experimental inoculations into rabbits of different strains of streptococci isolated from cases of typical rheumatic infection in man, and found that the lesions produced by the different strains were identical in their essential features, differing only in such minor matters as degree of intensity. The lesions in the rabbits were substantially the same in all organs examined, heart, joint, lung, etc. It was specially noticeable that the lesions were formative in character and of ultravascular origin. There were swelling, proliferation, and desquamation of endothelial cells, particularly those of the smaller bloodvessels, in which thrombosis was a common event. The connective tissues showed a marked fibroblastic reaction. This similarity of reaction to experimental rheumatic infection, regardless of the tissues attacked, acquires its chief significance when it is compared with the corresponding similarity found in human rheumatic lesions in the different organs. The importance of these observations lies chiefly in the fact that the lesions of clinical rheumatism in man were reproduced in all essential details in rabbits by inoculating them with streptococci isolated from patients suffering from rheumatic infection. This observation goes far to complete the evidence in favor of the streptococcal nature of rheumatic infection.

4. **Wrist Injuries.**—Knox and Salmond present the results of fluoroscopic and radiographic examination of 214 consecutive cases of injury to the bony portions of the wrist. Of 150 cases in which the epiphyses had united, the radius was injured in ninety-three per cent., alone in forty-one per cent., and together with the styloid process of the ulna in forty-two per cent. In only three per cent. of the total was the radius fractured along with the shaft and styloid process of the ulna. Sixty-seven per cent. of all of the injuries to the radius were transverse fractures; T shaped occurred in sixteen per cent. Ninety-nine per cent. of all of the cases had the fracture of the radius, three quarters of an inch or less above the lower end. The fragment was displaced backward in seventy-four per cent., forward in two, and not at all in twenty-four per cent. The ulna was fractured in only forty-nine per cent. of the total, and the styloid process was the part injured in forty-six per cent. of the total number. Injury to the carpal bones was an accompaniment of the other injuries in thirteen per cent. of the cases. In sixty-

four cases in which the epiphyses had not yet united the radius was injured in eighty-nine and the ulna in only fifty-six per cent. of the total. Both bones are fractured (excluding the ulnar styloid) in thirty-three per cent. of the total number of cases. If the injury involves the shaft it is transverse in eighty-nine per cent., while when involving the epiphysis, separation was encountered in seventy-nine per cent. The epiphysis is separated in forty-two per cent. of all of the cases in this class, the remainder are fractures lying within two inches of the end of the bone but generally not nearer than one inch. When analyzed, these statistics show that, in the cases in which the shafts and epiphyses are joined, the commonest injury is transverse fracture, half an inch above the lower end of the radius with backward displacement of the fragment, and with or without fracture of the styloid process of the ulna. When epiphyseal union has not occurred the commonest injury is fracture of the radius about one inch above its lower end, combined with a similar fracture of the ulna, both fragments being displaced backward.

6. Fibrillation and Pregnancy.—Miller reports the case of a woman, thirty-four years old, who has had auricular fibrillation for some years and has successfully passed through one, and almost certainly two labors with her heart in this condition. The last labor was conducted while the patient was well under the influence of digitalis. There were no difficulties experienced as far as the heart was concerned during the last delivery.

PRACTITIONER.

October, 1912.

1. ARTHUR EDMUNDS: Acute Intestinal Obstruction in Children.
2. H. W. CARSON: Surgical Aspect of Indigestion.
3. R. O. MOON: Clinical Aspects of Graves's Disease.
4. WILLIAM A. BREND: Law and Medicine, 1911-1912.
5. J. BLUMFIELD: Some Recent Work in Anesthetics.
6. S. F. ST. D'S. GREEN: Appendicitis in Children.
7. H. E. S. STIVEN: Acute Appendicitis in Children.
8. F. C. BARLOW-EBERHARDT: Etiology, Diagnosis, and Therapeutics of Appendicitis.
9. JOHN DEE SHAPLAND: Appendicitis from General Practitioner's Point of View.
10. IVO GEIKIE COBB: Suggestive Medicine.
11. CYRIL HORSFORD: Why Voices Fail.

3. Graves's Disease.—Moon considers that the first and most important requisite of treatment for exophthalmic goitre is rest for both mind and body. In many cases it is advisable to put the patient to bed for several weeks and to try to secure freedom from excitement or any form of anxiety. Often an entire change of air, scene, and social circumstances proves to be one of the best remedies, but it is important to avoid great altitudes, to remember that heat is badly borne, and to forbid long journeys. Insomnia is often troublesome, and a sufficiency of sleep must be obtained. Diet should be simple and mainly vegetable; alcohol is forbidden. Sometimes it is well to try the effect of drinking water different from that of the locality in which the patient lives. He finds the most useful drugs to be moderate doses of arsenic and sodium bromide; belladonna helps to quiet the nervous erethism, and some recommend sodium phosphate. Nothing positive is yet known as to the results of treatment with the x rays. Operative treatment should not be tried until after medical treatment has been given a fair trial. In conclusion he says that if we realize the disease to be essentially due

to an excessive or morbid secretion of the thyroid gland, which gives rise to various circulatory disturbances and a condition of nervous erethism, we shall be in a position both to diagnose and treat the minor manifestations before either exophthalmus or an appreciable enlargement of the thyroid has developed.

6, 7, 8, and 9. Appendicitis.—Green, Stiven, Barlow-Eberhardt, and Shapland make an excellent presentation of the various questions that arise in appendicitis. The first two deal particularly with the conditions in children, and Stiven summarizes the major points in which treatment differs in them from what it is in adults thus: Owing to their greater liability to a generalization of the infection early operation is more imperative in children. A prolonged operation and undue exposure cause relatively greater risks. In the after treatment children will not bear starvation as well as adults, so they should be given food that may be absorbed directly unchanged. Complications are probably less frequent than in adults, but a guarded prognosis should be given in all cases.

11. Why Voices Fail.—Horsford says that the failure of the voice must depend on: 1. Faults in the method of use, or, 2, faults in the physical condition of the vocal instrument. He points out that many good voices are spoiled during training, and urges that the safe and effective training of the singer will be obtained more certainly by the co-operation of the singing master and laryngologist.

CANADIAN MEDICAL ASSOCIATION JOURNAL.

October, 1912.

1. A. D. BLACKADER: Therapeutics of To-day.
2. A. J. HODGSON: Diabetes mellitus.
3. S. ALWYN SMITH: Traumatic Arthritis of Knee and Its Effects.
4. EDWIN KEMPER BRODUS: Medicine and English Literature.
5. FERNAND D. DE VERTEUIL: Radium and Age.
6. J. N. ROY: Serous Meningitis, Choked Disc, and Multiple Polyneuritis of Cranial Nerves in Young Alcoholic Smoker.

2. Diabetes Mellitus.—Hodgson thus summarizes his observations: This disease is not rare; while a small percentage of cases are due to severe organic lesions, most are undoubtedly the result of long continued errors in diet, particularly as to the amount and kind of food eaten. Drugs are of little if any use and as a rule should not be used. When they are not given the patient is made to realize the importance of dietetic and hygienic measures. The amount of food permitted is quite as important as the kind; even nonstarchy food must be used in moderation. Each mouthful must be chewed thoroughly; this is one of the most important details of treatment. A mildly alkaline drinking water should be used freely; distilled water should be prohibited. Constipation should be overcome with the aid of castor oil and olive oil; salines and drastic purgatives are to be avoided. A moderate mental laziness combined with moderate physical activity is the ideal for the diabetic. If gluten flours are used, they should be carefully investigated before being recommended, for many, if not most, of them contain dangerously high percentages of starch. Gluten breads of the best quality must be used in moderation. The starch hunger of the diabetic makes him unreliable, so he must be watched closely. The disease in children is not always fatal, but the prognosis should always be guarded. Printed instructions for the patient and the requirement

that he keep a dietetic diary are great helps. Co-operation on the part of the patient is essential to successful treatment. The determination and elimination of the acetone bodies, acetone, acetoacetic acid, and beta oxybutyric acid, is of even greater importance than that of glucose.

6. Serous Meningitis in a Young Alcoholic Smoker.—Roy reports a very unusual and interesting case. The patient, aged twenty-three years, had been for four years a very hard drinker and smoker. During this time he had been subject to epileptiform attacks, sometimes as often as twice in twenty-four hours. Toward the end of the fourth year, following an immoderate abuse of gin and tobacco, he awoke one morning stone blind and deaf and exhibited symptoms of meningitis that dated back three weeks. The first of these was headache, the second failure of vision, and in addition, vomiting. There were no constipation, chills, delirium, or convulsions. Food regurgitated through the nostrils. There was no tinnitus aurium. The pupils were dilated, but reacted slightly to light. There was a slight optic neuritis with distended bloodvessels in each eye. (No note is made of the relative size of the arteries and veins, or of the height to which the optic disc was protruded; this is the more unfortunate as the writer refers to the condition in some places as an optic neuritis, in others as a choked disc.) The muscles of the eyes worked well; there was no nystagmus; sensitiveness was normal. No anosmia was present. The palate was paralyzed. The right posterior crico-arytenoid muscle was paralyzed; the corresponding vocal cord was fixed in a medium position; the right arytenoid was slightly tilted forward. Sensitiveness of the larynx was normal. There was no cough, no tachycardia, and no change in the motility of the sternomastoid or trapezius. Outer ear and tympanum were normal. No lesion of the labyrinth was present. Kernig's sign was positive. All other organs and reflexes were normal. No paralysis was manifested, nor symptoms of hysteria, nor signs of tuberculosis or syphilis. The urine was normal. About twenty c. c. of spinal fluid withdrawn by lumbar puncture showed a fairly large number of lymphocytes and polynuclears, the latter predominating. The effect of the lumbar puncture was to improve the vision, so another was performed to relieve the headache, and the fluid was found to be the same as before. Five weeks' treatment succeeded in curing the patient. This case is of particular interest because the existence of serous meningitis, first described by Quincke in 1893, is not universally accepted. The fact that at no time was there a central scotoma for colors seems to indicate that the affection of the optic nerve was not a disease of the axial, or papillomacular bundle, such as ordinarily characterizes a toxic amblyopia from alcohol and tobacco.

BOSTON MEDICAL AND SURGICAL JOURNAL.

November 7, 1912.

1. DAVID I. EDSELL: Clinical Study of Respiration.
2. JOSEPH W. O'CONNOR: Pterycolitis of Pregnancy and Puerperium.
3. H. W. MARSHALL: Adjustable Knee Support.

1. Clinical Study of the Respiration.—Edsell's paper is so full of good points that it is difficult to pick out a few to show its character. The point

emphasized is that in our daily clinical observations of respiration, while we recognize the relation of some abnormalities to certain disorders, we have extremely little knowledge of the efficiency of the various forms of respiration in carrying air to the pulmonary alveoli and out again, so as to take in oxygen and eliminate carbon dioxide, and our knowledge is very limited as to why one form of respiration is so often assumed under certain abnormal circumstances, and other forms under other circumstances. Until the real causes of these abnormalities are learned it is impossible to determine their real significance. The frequency of minor, or even marked alterations of respiration, is appreciated only when attention is specially called to them. Irregularities of rhythm of various kinds, alterations in rate and in amplitude, changes in relation between costal and diaphragmatic breathing are common. Little is known of what is accomplished by the slow, deep respiration of cerebral and other disorders, or by its opposite, the rapid, superficial breathing of pulmonary and other diseases, or of why each of these tends so strongly to occur in some circumstances and not in others. In normal circumstances respiration appears to be excited, not by nervous impulses coming from the thorax, or other distant sources, but by chemical means, carried by the circulation or developing in the tissues about the centre itself. It has long been known that carbon dioxide in the blood is quite as important as the oxygen in regulating respiration, but recently it has been made probable that the predominating factor in exciting the respiratory centre is the carbon dioxide. Certain experimenters have determined that Cheyne-Stokes breathing excited experimentally is due to the presence of too little carbon dioxide in the blood, while that caused by disease is due to a reduced sensitiveness of the respiratory centre to carbon dioxide. The study of ventilation, output of carbon dioxide, and amount of oxygen absorbed in normal, deep, and superficial breathing is interesting. Other experiments were made to try to explain why a drug that is not a circulatory stimulant should cause an evident and rapid improvement in the circulation, and it is suggested that if the hurried breathing is due partly to a struggle to increase the ventilation in the lungs, and partly to a struggle to make the mechanical conditions easier for the heart, when the centre is really overexcited, it is apparent that a respiratory depressant may, as it so often does, relieve an apparently hopelessly failing respiration. Hence we need to determine in any particular case whether the respiratory centre is exhausted, or overstimulated, for the treatment in the two cases should be exactly opposite.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

November 9, 1912.

1. W. B. RUSS: Hospital as Factor of Interest to Medical Profession.
2. WILLIAM H. WELCH: Hospital in Relation to Medical Science.
3. HORACE D. ARNOLD: Clinical View of Special Diet.
4. P. E. TRUESDALE: Hospital versus Home in Care of Sick.
5. JOHN B. MURPHY: Relation of Physician to Hospital.
6. HENRY M. HURD: Proper Division of Services of Hospital.
7. FREDERIC A. WASHBURN and LOUIS H. BURLINGHAM: Problems of Hospital Organization.
8. H. B. HOWARD: Medical Superintendent.
9. ISAAC A. ABT: Individual Prophylaxis in Children's Hospitals.
10. RICHARD C. CABOT: Outpatient Work Most Important and Most Neglected Part of Medical Service.
11. MICHAEL M. DAVIS: Efficiency of Outpatient Work.

12. S. C. PUMMER: Relations of Hospital to Community in Patients.
13. M. L. BELL: Legal Aspects of Relations of Hospitals to Corporations Interested in Patients.
14. CHARLES RICHARD: Relations of Civil Hospital to Military Establishment in Time of Peace; in Time of War.
15. E. E. MÜNGER: Hospitals and Health Problem; with Special Reference to Necessities of Rural America.
16. E. R. SMITH: Quick Method for Accurately Differentiating Species of Hookworm of Man.
17. H. B. WOOD: Intestinal Parasites in South.
18. J. F. PERCY: Thyroid Extract in Nephritis: New and Effective Method of Treatment.
19. LEWIS J. POLLOCK and EARL B. JEWELL: Muscle Group Isolation in Treatment of Spasticities and Athetoses.
20. CHARLES M. REMSEN: Suggestions for Operation and After Treatment of Epyemia.
21. JOSEPH A. CAPPS: Role of Milk in Causation of Chicago Epidemic of Sore Throat.

1. The Hospital as a Factor of Interest to the Medical Profession.—Russ concludes that the greatest achievement of the section on hospitals of the American Medical Association will be in the junction between the medical practitioner and his work in the hospital. The attempt to help the hospital administrator grow in usefulness should not be the end of our efforts, but the practitioner should expect the administrator's help to elevate the practitioner, to learn many things in hospital procedure, the use of apparatus, new methods, applied both to new and old things. It is further expected that he shall help train the internes, that the younger professional men may be made of most use to the community.

2. The Hospital in Relation to Medical Science.—Welch classifies the various activities of the hospital as humanitarian, scientific, and educational, and although included in the others he specifies also the sociological. The primary consideration is the welfare of the patient. The plea for scientific and educational uses of a hospital can be justified only by showing that these uses do not interfere with the patients' welfare. Experience and sound argument demonstrate that the interests of the patients are best served in hospitals which recognize fully the needs of medical education and scientific research. For the latter the provision of a laboratory equipment has become a necessity. Modern methods of diagnosis demand trained experts and the necessary rooms and equipment for biological, physical, and chemical diagnostic procedures. An especial plea is made by the writer for the cultivation of pathological anatomy. Both hospitals and the public should be educated to realize the importance of such examinations, so that they are understood to be a matter of course in hospital management.

18. Thyroid Extract in Nephritis.—Percy adds nephritis to the long list of cases suffering from hypothyroidism. He has cleared up the urine in the average nephritic by giving from twenty to thirty grains of thyroid extract daily for from four to six weeks. When there is high blood pressure due to a pathological hypertonus, in patients under sixty years of age, he adds to the thyroid treatment 1/100 grain of nitroglycerin every two hours. In those past sixty years of age he adds to the thyroid and nitroglycerin about forty grains of potassium iodide in the twenty-four hours. The writer concludes that if thyroid extract is given in full doses to the average nephritic the urine will increase in quantity, the urinary solids will gradually return to normal, the albumin and casts will disappear in from four to six weeks, the blood pressure will decline, and the

symptom complex, known as Bright's disease, will disappear.

19. Muscle Group Isolation in the Treatment of Spasticities and Athetoses.—Pollock and Jewell explain that muscle group isolation implies the isolation of the muscle or group of muscles which are at fault in the production of contracture, deformity or athetosis, the isolation being effected by the injection of eighty per cent. alcohol into the nerve supplying the muscle or group of muscles. A paralysis of the physiologically stronger group of muscles results, whereby physiological exercises and educational methods are made possible. Six cases of treatment by this method, which was devised by Schwab and Allison, in 1909, are reported. It is very doubtful if return of motor function can be assured in every case submitted to this treatment. It is preferable to suffer with athetosis and possess function, than to be relieved of the athetosis and have function disappear. It cannot be affirmed that the spasticity will not return after some time (the writers' cases would seem to show that the spasticity will probably reappear). The procedure is valueless in cases in which shortening of the contracted muscles has occurred, unless supplemented by tenotomy or other surgical measures. One condition only may be relieved by this method. "a cross legged deformity due to spasticity of the adductor group of muscles occurring in a child, who, on account of the deformity, is unable to learn to walk." In such cases it may be possible to teach the child to walk during the time that the deformity remains corrected, and if the spasticity returns the ability to walk, although hampered by the resulting deformity, may remain. The writers warn against the injection of alcohol into any nerve possessing important motor functions, as the ulnar, median, etc.

MEDICAL RECORD.

November 9, 1912.

1. BERNARD OETTINGER: I. Humoral Etiology of Spasmodic Asthma. II. Outline of Treatment in Accordance with the Foregoing.
2. M. R. WESSON: Chronic Lymphatic Leukemia; Particular Reference to Blood Picture and Ferments in Urine.
3. THOMPSON FRAZER: Hemophysis in Tuberculosis: Significance and Treatment.
4. DANIEL B. HARDENBERGH: Physician's Role in Preventive Medicine.
5. G. A. RUECK: Effect of Experimental Hyperthermia on Oponic Activity of Blood Serum of Rabbit.
6. THOMAS DIXON: Unfortunate Predicament of Medical Profession.
7. ARTHUR K. PETERY: Nausea Dependent on Isidylity.
8. W. H. BATES: Myopic Refraction Relieved by Eye Education.

1. Humoral Etiology of Spasmodic Asthma; Treatment in Accordance Therewith.—Oettinger asserts that many clinical signs attest the identity of the mechanism underlying the toxemia of anaphylaxis and spasmodic asthma. Whether or not the toxic intermediate products of protein metabolism common to both conditions are rendered inert, depends upon the capacity of the organism to reduce them by oxidation and cleavage processes to end products capable of elimination (uric acid, urea, etc.). Methemoglobin fails to give up its oxygen to the tissues because it is a more stable oxygen compound than oxyhemoglobin. Methemoglobin is reduced by the toxic proteins of disease which cause a selective oxidation. The use of small doses of methemoglobin producing drugs in the treatment of asthma to effect a therapeutic methemoglobinemia is justified by the foregoing

conditions and the further fact that a methemoglobinemia is harmful only when profound in degree. Success has attended this procedure when put to the clinical test.

3. **Significance and Treatment of Hemoptysis in Tuberculosis.**—Frazer concludes that the profession is by no means a unit as to the significance and the treatment of hemoptysis occurring in pulmonary tuberculosis. Although this symptom is not strictly pathognomonic, and may appear early or late or not at all, hemoptysis must be regarded, diagnostically, as a symptom of great value, prognostically, as a sign of considerable, though still undetermined, importance. Further, in spite of the use of drugs antagonistic in their action—drugs which are classed as stimulants, depressants, dilators, and constrictors—we cannot close our eyes to the fact that all these drugs have proved useful; and, we may find that the antagonism is more apparent than real when we come into a larger knowledge of the true action of drugs and a deeper insight into the etiology and "pathology" of hemoptysis.

5. **Effect of Experimental Hyperthermy on the Opsonic Activity of the Blood Serum of the Rabbit.**—Rueck remarks that, contrary to the older notion that fever had a harmful and deleterious influence on the course of infectious disease, recent study has shown that a moderately elevated temperature is without harmful effect upon the body tissues, and may indeed increase the protective resources of the body and become in its action conservative. The writer's experiments agree in results with those of other observers and demonstrate that the opsonic activity of the blood serum of normal animals is greatly increased by immunization with dead organisms in vaccines, also with the living bacteria. In the process of immunization the animal may be so poisoned that a so called negative phase appears, in which the opsonic activity of the blood serum is diminished or else fails to increase. This negative phase was exhibited in only one of the writer's experiments, when, after, inoculation with living cultures, fatal infection developed. The opsonic activity of the serum may increase gradually and steadily with immunization, in a vigorous animal, without necessarily showing a negative phase. Artificial elevation of the body temperature obtained by incubation invariably increased the opsonic activity of the blood serum in the normal, the immunized, and even in the sick rabbit. The effect of experimental hyperthermy in increasing the opsonic activity of the blood serum varied much, being dependent upon the animal's condition and upon the degree or stage of immunization or infection, being usually more marked in the immunized than in the normal animal; most marked increase was observed in a healthy rabbit during active immunization and least marked—practically nil—in an infected rabbit.

LONG ISLAND MEDICAL JOURNAL.

October, 1912.

1. J. MERZBACH: Personal Experiences with Some Recent Drugs.
2. W. TRUSLOW: Deformities of Childhood and Relation to Education.
3. L. C. AGER: Duty of Community to Backward Children.
4. E. H. BARTLEY: Giving Drugs to Infants and Children.
5. W. A. NORTHBIDGE: Avoidance of Disease in School Life.
6. W. D. LUDLUM: Tonsils and Adenoids in School Children.

7. J. C. HANCOCK: Note Concerning the Eyes of School Children.
8. S. H. LUTZ: Sore Throats with Complications.
9. A. POTTER: Treatment of Acne vulgaris by Autogenous Vaccines.

8. **Sore Throat.**—Lutz reports twenty-one cases of sore throat in which there was some otitic complication. The infecting organisms were of several varieties, but the condition usually responded well to surgical measures combined with the use of vaccines. He also reports the occurrence of seven cases of sore throat within a period of ten days in a private school. The source of the infection was probably milk, as all pupils drank from the same source of supply. Nine other cases were also traced to a single milk supply.

Proceedings of Societies.

CLINICAL CONGRESS OF SURGEONS OF NORTH AMERICA.

Third Annual Congress, Held at New York, November 11 to 16, 1912.

(Concluded from page 1036.)

THURSDAY EVENING.

Obstetrics and Gynecology.—This meeting, held in the Brooklyn Academy of Music, was devoted to obstetrics and gynecology. Dr. Edward Martin, presiding, introduced Dr. W. W. Chipman, of McGill University, Montreal, who read a paper upon the

Problems of Obstetrical Practice.—Doctor Chipman cited the progress that had been made in the practical teaching of obstetrics in our medical schools and hospitals since this was first initiated by White in 1850. In spite of this, however, the mortality of women in childbirth was still high, and, largely because of inefficient teaching, many women lost their lives at this time and many more were permanently disabled. He brought out the importance of properly instructing the medical student in the care of normal cases of labor, which, after all, were greatly in the majority, and emphasized the fact that the doctor's duty to his patient demanded a careful investigation of the pelvis several weeks preceding the expected time of confinement, as well as routine examination of the urine. As to the conduct of labor itself, absolute surgical cleanliness and masterful inactivity on the part of the attendant were indispensable if the best outcome for mother and child was to be hoped for. The third stage of labor, in particular, seemed to be the time when most men yielded to the temptation of officious intermeddling, thus turning into a catastrophe what was a commonly normal physiological process. As one of the problems of obstetrics Doctor Chipman next took up the unengaged fetal head at the end of the first stage of labor, with unruptured or recently ruptured membranes. In the primipara the head should become well engaged in the last months of pregnancy, if not, there was present, as a rule, no little disproportion between head and pelvis. Where this disproportion was great, delivery of a living child by way of the normal passages was out of the question; where little, by proper management a successful delivery might yet be brought about. When, after careful measurement of the

pelvis under anesthesia, and as accurate estimation as possible of the size and position of the fetal head, the disproportion was found to be slight, sufficient moulding of the head might bring about its passage through the pelvis brim. The woman should be given four hours in which to accomplish this, and, this failing, axis traction forceps should be applied with great care, and but gentle traction should be made. The head resisting this treatment, the child's life should be discarded in the interest of the mother's, and craniotomy performed. During this time there should be no hurry, and version should never be done save by the expert. This might happen once, but should never happen again to the same woman and in the same doctor's care.

Cancer of Uterus.—Dr. THOMAS S. CULLEN, of Johns Hopkins University, was next introduced and read a paper on the Treatment of Cancer of the Uterus. Doctor Cullen pointed out that, while cancer of the body of the uterus was fairly well managed at the present time, two thirds of the cases being cured, cancer of the cervix presented a great opportunity for investigation and advancement, for the reason that, although many cases came under observation, most were in such an advanced stage of the disease that operation was out of the question, and among the operative cases the mortality was high, both primarily and because of recurrence. Operation should be performed in all cases by the abdominal route, except in the extremely obese. Preceding the laparotomy, the cervix was treated by the actual cautery and an iodine pack introduced. Such measures, as an ample incision, the excision of a wedge of fat from a very thick abdominal wall, an electrically heated table, and good illumination, all aided in the reduction of mortality in patients usually poor surgical risks owing to prolonged hemorrhage and sepsis.

Doctor Cullen said that the pelvic glands might or might not be removed, depending upon their availability and the condition of the patient, since all enlarged pelvic glands were not cancerous. As to statistics, an effort was made at the recent meeting of the American Gynecological Association to obtain for compilation the results in this condition of a large number of the best known American gynecologists. The result was disappointing so far as statistics were concerned, and little could be established. The fact was brought out that the great majority of patients presenting themselves at the hospitals with cancer of the uterus were far beyond the possibility of operative aid. In the glandular type of cancer of the cervix recurrence following operation was apt to be early, although the prognosis was always in doubt, since some cases that might be regarded as cured showed a prompt recurrence, and others, apparently less favorable, remaining free for some time.

Doctor Cullen expressed himself as in favor of the palliative operation, which, while offering no hope of removal and cure, might control the recurrent hemorrhages and offensive discharge for a time; furthermore, the possibility of fistulae and pressure symptoms demanded that these patients be given every possible chance of relief, however slight. Wertheim's excellent results were due, in part, to the fact that the German patients were less fat, a

better exposure thus being obtained, and because of the better popular education in Germany in regard to cancer, the patients presenting themselves earlier in the disease. The more cases coming to operation, the greater became the operator's skill, and the better the outlook was for the patient. In the United States the women should be educated in regard to the early symptoms of cancer of the cervix. This had been done among the population at large in regard to tuberculosis and appendicitis, and could be done as readily as to cancer. Only when this had been done could the mortality in cancer of the uterus, early and late, be reduced in this country.

The Wertheim Operation.—Dr. Wilhelm Weibel, of Vienna, Austria, Doctor Wertheim's assistant, next spoke of the operation itself. He said that it was only in 1878 that formal operation for cancer of the uterus was undertaken as a routine treatment. Removal of the cancerous uterus by way of the abdominal incision resulted in such a high mortality at first that the vaginal route was taken up. This proved unsatisfactory, and the abdominal method was returned to. In 1898, Wertheim introduced his well known operation, comprising the removal of the entire uterus, upper vagina, parametrium, pelvic glands, and connective tissue. The glands, unless enlarged, were never cancerous, and were never in any case removed above the bifurcation of the iliac vessels. If the bladder wall was found to be involved a portion of this might be resected and the ureters reimplanted. Only very late in the disease did the ureters become invaded. In only a very few of the cases was it necessary to remove a portion of the rectum. In some twenty-five per cent. of the cases the pelvic glands were found to be cancerous, and nearly all of these cases ended fatally from prompt recurrence. Of 1,430 cases at the Wertheim clinic, 684 cases were inoperable, 675 had the radical operation, the operative cases thus being about fifty per cent. of all that came under observation. In the first 100 cases operated in there was a mortality of thirty per cent.; in the last 100 a mortality of only nine per cent., showing an improvement due to technique, operative skill, and proper anesthesia. Operation in cases of recurrence had been a failure at all times. Cases without recurrence for five years were considered cured. There were 380 cases now without recurrence after five years or more, forty-three per cent. of all primary operative cases being cured.

The Schauta Operation.—Dr. X. O. WERDER, of Pittsburgh, next read a paper on the modified Schauta operation. Doctor Werder operated in his first nineteen cases of cancer of the cervix by the vaginal route alone, but since then had adopted the combined vaginal and abdominal method. He now drew down the cervix with a volsellum, carried the knife cautery about the cervix, burning his way through the vaginal fornices up to the uterorectal and uterovesical reflections of peritoneum. The vagina was then packed and the abdomen opened. The pelvis was packed off, the knife cautery was passed into the vagina through the uterorectal cul-de-sac, and with the fingers in the vagina lifting the uterus upward, the uterovesical peritoneum was burned through, and the broad ligaments, clamped

with oiled clamps, were severed with the cautery. Any bleeding points then discovered were retouched with the cautery, the peritoneum brought together with sutures, now used for the first time, and the abdominal wound closed without drainage. This was a clamp and cautery operation. During the past year Doctor Werder had been first amputating the cervix with the cautery and in this way obtaining a better opportunity to cauterize the bases of the broad ligaments. He was also employing a ligature on each infundibulopelvic ligament, as this saved time. Regional glands were not disturbed unless found enlarged, since by this means time was saved, there was less tax on the patient's vitality, and furthermore it was possible that enlarged glands might produce a substance antagonistic to cancer, hence by their removal cancer might be dissipated. In the past eight and a half years Doctor Werder had treated seventy-eight cases of cancer of the cervix, all but one by the cautery method, and one by the cautery only. The proportion of operability was thirty-eight per cent. of all cases observed. Of the seventy-eight cases four ended fatally from the operation, a primary mortality of 5.1 per cent. This was low, due to absence of sepsis. Half of the ordinary deaths were due to sepsis, because of the infection of extensive raw surfaces produced by operation. By the cautery method little blood was lost, there was less sepsis, and there was no greater danger of injury to the bladder and rectum than by the usual procedures. Of the operative cases, thirty-nine survived five years, thirteen patients were living and well, five to eight years after operation.

Byrne's Technique.—Dr. ROBERT L. DICKINSON, of Brooklyn, spoke briefly and highly appreciatively of the pioneer work of Dr. John Byrne, of Brooklyn, who began the treatment of cancer of the cervix by the use of galvanocautery as early as 1872. Doctor Byrne's genius was well shown in his development and perfection of the electrocautery, and his surgical skill proved by his excellent results obtained in a long series of cases extending over a period of more than twenty years and productive of many cures. The cases of cancer of the uterus curable were those early in the disease, in which the removal of a small amount of tissue would suffice, supplemented by the skill and long experience of the surgeon. Doctor Byrne removed by the cautery first the intravaginal cervix, and therefrom above this a cone shaped portion of the lower part of the body of the uterus.

Vaginal Hysterectomy.—Dr. GEORGE GELLHOM, of St. Louis, next spoke upon the vaginal route of hysterectomy in cancer of the uterus. This he believed to have definite advantages in certain cases. Every competent surgeon should be skillful in either method of operation, and thus avoid the necessity of applying the same treatment to all patients irrespective of the operative indications. The operator should be schooled in both the abdominal and the vaginal operation if the best results were looked for in a large number of cases. He advocated the use of the vaginal operation in patients over sixty years old, in the cachectic, in cases of squamous celled carcinoma, and in patients suffering from cardiac disease. In only one third of all cases were the glands involved, and in these the outlook was hope-

less whatever operation was employed. By the vaginal method the primary mortality was less and the late mortality no greater. In cases complicated by fibroid tumor, pregnancy, and hernia, the abdominal operation might be necessary. Doctor Gellhom then described in detail his method of procedure in performing vaginal hysterectomy for cancer of the cervix, and closed by saying that both operations had their distinct indications, and the method employed should be that offering the best chance for the patient.

General Considerations in Operative Procedure.

—Dr. HOWARD C. TAYLOR, of New York, said that the Wertheim operation gave a fair chance of cure in certain selected cases. There were three objections to the vaginal operation—the failure to remove the pelvic glands, certainly a consideration, the small amount of pelvic connective tissue removed, and the fact that it was a more difficult operation in the hands of most men. For these reasons he preferred the abdominal operation except in instances of marked obesity. In the United States there was little material divided among many men, but for this very reason each man should be enabled to follow his cases very carefully. The New York Department of Health statistics showed that seventy-five per cent. of all cases of cancer of the uterus were never operated in: of the remaining twenty-five per cent., no aim was made in most to effect a complete removal, and that only some five per cent. of all cases were given the advantage of the complete operation. The women of this country must be taught to recognize the disease early, and only then could operation offer a possible chance of cure. Doctor Taylor then offered a resolution to the effect that the time had now come for the medical profession of this country to undertake the education of the public in the recognition of the earliest symptoms of cancer of the uterus, or remain criminally negligent; that a campaign of publicity should be begun, a committee appointed, and that this committee should cause to appear in the daily press and weekly and monthly magazines articles instructive as to cancer, and that, furthermore, this committee should report their progress at the next annual meeting of the congress.

This resolution was unanimously adopted by the members of the congress present, and the meeting then adjourned.

FRIDAY EVENING.

Review of Clinical Surgery.—This final meeting was held in the grand ballroom of the Waldorf-Astoria and was opened at 8:20 p. m. by Doctor MARTIN, who introduced Dr. STEPHEN SMITH as the pioneer of clinical surgery. Doctor Smith related some of his reminiscences of the late forties in the old Bellevue Hospital. He said that at that time there was no such thing as clinical surgery in this country, and that when it was suggested that Bellevue open her operating theatre and wards for such a purpose the suggestion met with severe adverse comment and considerable ridicule. Nevertheless the plan was adopted and that was the beginning of the Bellevue Hospital Medical College. Doctor Smith was more than gratified to see the great force exerted by clinical surgery at the pres-

ent day. He made a few remarks on the horrors of preanesthetic surgery, describing the holding down of the patient by several stalwart assistants while the surgeon performed his operation with the parts upon which he worked continually in violent motion owing to the patient's struggles. He thought that it was remarkable to contemplate the excellent operations performed by Valentine Mott on the innominate and by Rogers on the subclavian in spite of these extreme difficulties. One of the most phenomenal characteristics of Mott, he thought, was the fact that he was the only surgeon who never had pus in his wounds in those days prior to antiseptics and asepsis. This, he believed, was due to the fastidious cleanliness of Doctor Mott's person. Here Doctor Smith related how on one occasion Doctor Mott watched his assistant open an abscess for him, and though Doctor Mott stood behind his assistant and held his hands behind him during the operation, nevertheless he at once thoroughly washed his hands, just as if he had done the operation himself.

Spinal Curvature.—The president, Doctor MARTIN, then introduced Dr. E. G. ABBOTT, of Portland, Me., who gave a graphic demonstration, by means of lantern slides, of his method of curing lateral spinal curvature. He made a special point of the fact that restriction of motion was the essence of the deformity, going so far as to say that whenever there was a restriction of motion in the spine there was some degree of resulting deformity as a necessary sequel. He then described his somewhat complicated frame for the overcorrection of the deformity and its conversion into a deformity of the opposite direction, that is, a left lateral curve was made into a right lateral. This overcorrection was an absolute necessity if a cure was to be obtained. He described and illustrated the application of the plaster of Paris jacket and the subsequent forcible rotation of the bodies of the vertebrae by pressure on the ribs brought about by the insertion under the jacket of thick pieces of felt to push the parts into a position opposite to that in which they were originally. In many cases, he said, it was possible to convert a curvature into one of the opposite direction in a few weeks. But, if the patient was to be cured, steps must be taken to maintain this overcorrection for several months, later combining it with exercises designed to promote mobility. The latter stages of the treatment called for the use of a removable celluloid jacket, which was worn at all times, except when the patient was exercising. Later this was to be used for only half the day, and finally it could be abandoned entirely as the patient was cured. The treatment usually required from three months to a year for a successful result. He said the method was capable of causing some improvement in practically every case of lateral spinal curvature, but that there were some cases in which a cure was an impossibility, and some in which the treatment had brought about a worse deformity in the opposite direction than was the original one.

Doctor RIDLON, of Chicago, in the discussion of this paper, said that he regarded Doctor Abbott's treatment as the "greatest thing yet" in the treatment of lateral curvature. In his hands the method had not been quite so successful as it had been in those of its author, but it was the only one by which

he had been able to obtain any sort of results, and he was able to report a number of cures by its use.

Dr. ROYAL WHITMAN, of New York, said that he did not believe that the assertions of Doctor Abbott were justified, for the treatment was vastly more difficult than had been supposed, was a source of great pain and discomfort to the patient, not to say danger from embarrassment of the respiration, and the marked dislocation of the heart due to the direct pressure on the thorax. Nevertheless some of the cases in which he had employed the method had been cured and a number were improved.

Surgery of the Bones and Joints.—Dr. JOHN B. MURPHY, of Chicago, was next introduced, and spoke also with the aid of a large number of lantern slides. He said that the subject of the surgery of the bones and joints could be divided into five main groups: 1. Fractures—in their most dangerous positions, that is in the immediate neighborhood of joints; 2, ununited fractures; 3, the reproduction of bone; 4, arthritides, neglected or mismanaged; and, 5, the repair of the evil results of these arthritides. He said that in Colles's fracture failure of reduction was the rule rather than the exception and that this was due to the fact that the edges of the fragments were serrated. In Pott's fracture the failures were twofold, the failure of complete reduction and, more particularly, the failure to maintain a complete reduction. This, he said, could be accomplished only by superlative adduction of the foot and its sharp flexion on the leg. A complication of Pott's fracture was the association of a fracture of the posterior edge of the articular surface of the tibia with a luxation backward of the foot. In this condition the foot should be dressed as before, but the angle between it and the leg should be as acute as possible. In the discussion of fractures of the neck of the femur he brought out the important fact that in some cases, even if there was no apparent reason, the neck and head underwent absorption. It was found that in those cases in which this had occurred the fracture had been very close to the head, while, when it was nearer the trochanters, this never occurred. The explanation for this lay in the mode of distribution of the blood supply, this being cut off by fractures near the head. Even if this was the case, however, if the small fragment was brought into contact with freshened living osteogenetic tissue, it would live and not undergo atrophy. The conclusion to be drawn from this observation was that open operation with the fixation of the small fragment to the larger after the surfaces had been freshened was the logical method of treatment of these cases.

This latter remark led up to the discussion of the reproduction of bone, and on this Doctor Murphy spoke from a very wide experience. There was but one absolute essential other than rigid asepsis, that was that the bone graft must be closely connected, at some one point at least, with living, freshened, osteogenetic tissue. Very long gaps could thus be filled in without any difficulty, and the transplanted bone would serve as a ladder to carry the new bone. Ultimately the transplant is entirely replaced by new bone which becomes an integral part of the original bone from which it derived its nourishment.

The arthritides should all be considered as metastatic infections and the only reason for not considering the so called rheumatism as such was the

fact that the primary source of infection was gone by the time the joints became involved, or because the primary focus was not recognized. If the joint inflammation was ushered in with a chill then it was stamped as pyemia, such was the shortsightedness of man. Considering septic arthritides, he said that treatment must be drastic and above all immediate, for it was possible for the synovial membranes of the joint to become destroyed in a very brief time and then ankylosis would be the result. The treatment varied to some extent with the type of infection, but in general it consisted in aspirating the joint to relieve tension, and the subsequent injection of five per cent. carbolic acid solution or of a solution of formaldehyde. Perhaps the most important feature to be considered in the treatment of the arthritides, he said, was the maintenance of the proper position of the parts, for if ankylosis should be the result the blame for deformity was to be justly laid at the surgeon's feet. (A more detailed summary of Doctor Murphy's paper will appear in an early issue of the JOURNAL.)

Doctor BREWER said that he had intended to discuss the paper of Doctor Murphy's, but that there was nothing left for him to say, so thorough had been the presentation and so correct the views.

Prostatectomy.—Dr. E. S. JUDD, of Rochester, Minnesota, was next introduced by President Martin. Doctor Judd described the methods he had been employing in the suprapubic route for the removal of the prostate. He advocated the opening of the bladder while empty to prevent soiling of the wound by the distending fluid. This was important, for the complication most to be feared in this operation is an infection of the space of Retzius. He advocated, also, the thorough delivery of the bladder from the abdominal cavity for the operation, both as a further protection to the space of Retzius and for the sake of greater ease in the removal of the prostate. The gland was to be shelled out from its capsule by means of the finger, and it was important to remove all of the gland, as hemorrhage was likely to follow the leaving of fragments, even if small. After the removal of the gland and the partial suture of the opening in the bladder one should make sure that all bleeding had stopped and then insert a urethral catheter and irrigate the organ. The wound could then be closed and the abdomen sewed up save for slight drainage of the space of Retzius. This method gave the desired removal of the obstruction to the passage of urine and left the patient with control of his bladder.

Transfusion of Blood.—Dr. ALEXIS CARREL closed the meeting with a few remarks. He spoke of the recent simplification in the process of direct transfusion by means of a small, gold plated silver tube which was prepared by sterilization in paraffin to provide a coating such as would minimize the liability of clotting. A further improvement was the invention of a small device for the opening of the lumen of the artery to aid in the insertion of the cannula.

After the brief talk by Doctor Carrel the meeting was terminated by Doctor Martin introducing Dr. George Brewer as the next president. Doctor Brewer did not rise to his feet to address the Con-

gress for some reason not made clear by Doctor Martin. Three cheers were then given for Doctor Martin and those who had collaborated with him to make this the greatest congress of surgeons ever held in America.

Election of Officers.—The following officers were elected for the coming year: President, Dr. George Emerson Brewer, of New York; vice-president, Dr. W. W. Chipman, of Montreal; general secretary, Dr. Franklin H. Martin, of Chicago; general treasurer, Dr. Allen B. Kanavel, of Chicago. Chicago was selected as the meeting place for 1913.

Letters to the Editor.

THE QUESTION OF CULTURE.

NEW YORK, November 12, 1912.

To the Editor:

My old Hellenist friend, Dr. Achilles Rose, has forwarded to me the editorial page of the NEW YORK MEDICAL JOURNAL for October 26th, containing an article on Universities and Medical Education, to show me what ideas are being expressed by medical publications on the question of classical education. Of course, I read the article, but it only confirmed me in my views. Allow me, therefore, to answer the question of Dr. H. D. Rolleston. Is it true—that the necessary general culture can be obtained in one way only? This question, and all his further remarks, such as the "luxury of any aroma of classical culture" are ample proofs that the gentleman is not familiar with the entire scheme, the history, and the meaning of education, and totally innocent of all the school machinery of the world.

His case illustrates best what becomes of a man, who, by other means rises to prominence without classical education. But England and America are full of this kind of people; and, if you wish to satisfy yourself on the point, I invite you to look into any encyclopedia, lexicon, dictionary made in England, or in America, you will see that no one can define such common words as *university, degrees, humanities, philosophy, metaphysics, arts, liberal arts, liberal education, etc.*, nor even can they tell you what "C." on the thermometer stands for. The scholastic traditions are a perfect blank in the English speaking world, since the time of its separation from Rome by the Reformation. Ask them, Why do they wear caps and gowns in colleges? No one can tell you. Not even "classical education" would heal this yawning gap, it calls for all the Latin scholastic traditions. So do all the learned professions, medicine included. Our physicians have no symmetry in measuring their relative positions, or the conditions of their own professional knowledge, excepting through Latin scholastic traditions, with which the Roman classics have no direct relation. Our ignorant schools are trying to make the Roman classical authors the stepping stones for learning Latin, and thus enable the learned professions to acquire their special branch knowledge through private study.

No institution but the university can give degrees. Medicine is one of the four humanities; it is of university rank, and every school teaching medicine must be of university rank, and as such, it cannot admit other than university students, which are those who have stood examinations of "maturity," i. e., that have completed a course in a *Lycee, Ober Gymnasium, or College*. All other youths, by the consensus of all the world, are intellectually not trained, and culturally not ripe enough to understand and appreciate the science and art of medicine. There are in France separate medical institutions, independent of universities, but they maintain their rank of university, i. e., as a special university faculty, and, for this reason they call themselves *faculties*, not medical colleges as here. A medical school, accepting students other than "mature," i. e., not graduated from a secondary school, becomes a trade school.

What the British physician says about psychology, is an-

other proof that he does not know what he is talking about. Every human knowledge has two phases; so classified by Aristotle, and digested by the scholastics into *Scientia pura*, and *Scientia applicata*. The former make up metaphysics, i. e., philosophy; the latter make up the *Artes liberales*, among them medicine, as an applied science. Psychology, therefore, as pure science, is philosophy, one of the four humanities of the university, and it must be studied there; as an applied science, i. e., liberal art, it belongs under the head of medicine. Now, if a medical school should teach only applied science, i. e., liberal arts, it becomes a trade school, outside of the pale of a university, and beneath its grade.

Concerning the ages of students, these are the facts; Boys go to school at six years; complete elementary grades at ten, enter an academy (*Unter Gymnasium*) at ten, finish at fourteen. He enters *Ober Gymnasium*, *Lycee*, or *college*, at fourteen, comes out at eighteen, when he enters the university, if "mature." This is the practice of all the civilized world; if it is different in England and America, their culture and civilization suffer, as, judged by the utterances of the British physician, it really does, hence the low reputation abroad of everything intellectual, if British or American; and the further fact, that all intellectual products must be imported from Germany.

Were the British physician a classically cultured man, he would know that the Teutonic, Celtic, Slavonic barbarians have not contributed a pin to our culture and civilization; all comes down to us from Greece and Rome, through the scholastics in Latin; that all we know, and all discoveries, are but superstructures upon Roman civilization; that, for this reason, ninety per cent. of the French Italian, Spanish, etc., languages, sixty-five per cent. of the English, eighty per cent. of the language of science is Roman or Greek; that the alphabet, the calendar, religion, and school, everything is Roman; he could not ask if Latin and Greek were the only way to culture. A man of this cultural calibre can have no opinion in this matter. Hoping that this is a sufficient answer to the British physician's presumption, I am,

ARCADIUS AVELLANVS.

THE METRIC SYSTEM.

HAZLETON, PA., November 7, 1912.

To the Editor:

I have noticed that you are using the metric system exclusively in your therapeutical department. Are you aware that a very small number of physicians are using that system? Are you also aware of errors which may arise in the conversion of the metric into the old system?

I believe, therefore, that you should at least add its equivalent in the old system, even if you are in favor of the new system.

Personally I used the metric while in the United States Army, but if I were to write a prescription in the metric system here in this town, the pharmacists would expire from some heart affection, or would charge the patient double for the medicine.

E. A. DESSEN, M.D.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Die Methoden der Untersuchung des Magens und ihre diagnostische Verwertung. Von Dr. EMIL SCHÜTZ, Privatdozent an der Universität Wien. Mit 29 Textabbildungen. Berlin & Wien: Urban & Schwarzenberg, 1911 (Through Reblman Co., New York.) Pp. viii-240 (Price, \$2.75.)

Evidently written by one who has had considerable personal experience with his subject, the book before us constitutes a clear exposition of the entire subject of stomach examination. Not only have the results of modern researches been included in the discussions, but the author has throughout given the results of his own experience with all the classical methods, pointing out their use and

their limitations. The work is divided into five chapters, dealing successively with the history of the case, the physical examination of the patient, the collection and examination of gastric contents, functional test, and examination by Röntgen rays. In addition, there are four unnumbered chapters dealing with the examination of gastric contents without the use of the stomach tube, the significance of a blood and urine examination in the diagnosis of gastric disorders, and finally, biological methods for the diagnosis of carcinoma. A careful perusal of the book convinces us that this is a safe and really excellent guide in the proper examination of the stomach. We commend it to our readers.

The Care of the Insane and Hospital Management. By CHARLES WHITNEY PAGE, M.D., Assistant Physician to Hartford Retreat, Superintendent of the Connecticut Hospital for the Insane, etc. Boston: W. M. Leonard, 1912. Pp. 155.

After an experience of more than thirty-five years as a medical officer in hospitals for the insane, the author should be qualified to speak with some authority on his subject, and one is not disappointed as one peruses the work. The subject matter deals with institutional organization and management from the necessary qualifications and method of selection of the trustees, to the training and duties of the attendants and nurses. The importance of adequate laboratory equipment and work is emphasized. After reading the book, however, one feels that the central thought concerns the management of patients by methods of nonrestraint. Much of the author's effort for several years has been directed to the practical elaboration of the methods of Doctor Conolly, of England, one of the pioneers in the use of this method. The author approves of the opinion of Doctor Conolly, whom he quotes as follows: "After five years' experience with the nonrestraint system, I have no hesitation in recording my opinion that with a well constituted governing body, animated by philanthropy, directed by intelligence, and acting by means of proper officers, there is no asylum in the world in which all mechanical restraint may not be abolished, not only with safety, but with incalculable advantage."

Die Klinik der Tuberkulose. Handbuch der gesamten Tuberkulose für Ärzte und Studierende. Von Dr. B. BANDELIER, Chefarzt des Sanatoriums Schwarzwaldheim in Schönbogen bei Wildbad, and Dr. O. ROEPKE, Chefarzt der Eisenbahnheilstätte Stadtwald in Melsungen bei Cassel. Zweite vermehrte und verbesserte Auflage. Mit 3 Abbildungen und 7 Kurven in Text, sowie 6 farbigen und schwarzen Tafeln. Würzburg: Curt Kabitzsch, 1912. Pp. xii-641.

The two authors have given a very complete clinical presentation of the subject of tuberculosis as it may appear in the various organs of the body; in this second edition is given, as far as possible, the latest investigations. No chapter remains unchanged, some, such as those on tuberculosis of the upper air passages, the blood and lymphatic systems, etc., have been extensively revised, others greatly added to. Brief reference is given to Hodgkin's disease, it being stated that the cause, although not identical with the Koch bacillus, is in close relationship to it. As might be expected the greater part of the book, over one half, is devoted to tuberculosis of the respiratory system. The other structures of the body, however, are in no way neglected. A great amount of information is contained in this publication, and, what is not always the case, is well arranged so as to be easily found. The different topics have their paragraph headings, and the index is quite complete, the printing is good, and so are the eight plates. As a textbook for ready reference, it is to be recommended. For those who do not read German an English edition is being prepared and is expected to appear shortly.

BOOK AND MAGAZINE NOTES.

The *British Medical Journal* for November 2, 1912, in an editorial article on Medical Latin, avers that it has come across in American medical journals such phrases as *in flagratio*, *infertilis masculinus* (apparently intended to denote male infertility). In England itself, it has noted in

the discussions following the Insurance Act the changes rung upon *per capitam* and *per capitem*. After all these are not much worse than "per head," which always reminds us of the bill of fare in the low priced restaurant, which offers pie at so much "per slice." Anticipating ironical criticism, we wish to say that we do not desire the restaurant to write "*per segmentum*." If our writers are to be forgiven for the solecisms mentioned, what of our editors? We noticed this very week in an American exchange, the phrase *monumentum aere perennium*. Poor Horace!

Dr. Ira S. Wile, the author of *Sex Education* (New York: Duffield & Co., 1912), has a name and professional prominence which lead us to expect an interesting book. In these hopes we are not disappointed, for the essay will be of great help to parents and teachers in overcoming difficulties and to develop a course of instruction in sexual matters. The titles of the four main chapters are very happily chosen: The age of mythology, representing that period of child life which is particularly keen in imagination; the age of chivalry, which begins as a "prepubertal" period, that from eight to fifteen years; the age of civic awakening, that is, the period of beginning adolescence; and, finally, there is a fifth chapter on onomatology, which gives a vocabulary of correct terms to be used instead of their vulgar or obscure equivalents.

Meetings of Local Medical Societies.

MONDAY, November 25th.—Medical Society of the County of New York (annual).

TUESDAY, November 26th.—New York Dermatological Society; New York Psychoanalytic Society; Metropolitan Medical Society; New York Medical Union; New York Otological Society; Riverside Practitioners' Society, New York; Washington Heights Medical Society, New York; Valentine Mott Medical Society, New York; Alumni Association of Seney Hospital, Brooklyn; Rome, N. Y., Medical Society; Buffalo Academy of Medicine (Section in Pathology).

WEDNESDAY, November 27th.—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society; Buffalo Medical Union; New York Society of Internal Medicine.

THURSDAY, November 28th.—New York Academy of Medicine (Section in Obstetrics and Gynecology); New York Celtic Medical Society; New York Physicians' Association; Bronx Medical Association; Hospital Graduates' Club, New York.

FRIDAY, November 29th.—Hospital Graduates' Club, Brooklyn; Audubon Medical Society.

Official News.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending November 16, 1912:

Ashford, Maholin, Captain, Medical Corps. Leave of absence extended ten days. Baker, David, Major, Medical Corps. Granted twenty days' leave of absence. Boyer, Perry L., Captain, Medical Corps. Granted thirty days' leave of absence. Card, Daniel P., Captain, Medical Corps. Granted two months' leave of absence. Creighton, Samuel S., First Lieutenant, Medical Corps. Relieved from further duty with field hospital No. 3 and ordered to report to the commanding officer, Fort Leavenworth, Kansas, for duty. Edwards, George M., First Lieutenant, Medical Corps. Granted leave of absence until date of relief from duty at West Point, N. Y. Haig, Chester R., First Lieutenant, Medical Corps. Relieved from duty as assistant to the attending surgeon, Washington, D. C., and ordered to proceed to West Point, N. Y., for duty. Lemmon, Robert, First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Rodman, Mass.,

and ordered to proceed home; granted leave of absence for two months and five days; resignation accepted to take effect at expiration of leave. Maguire, D. F., First Lieutenant, Medical Corps. Granted leave of absence to December 5, 1912. Thearle, William H., First Lieutenant, Medical Corps. Granted fourteen days' leave of absence. Waler, Thomas C., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort H. G. Wright, N. Y., and ordered to proceed to Fort Rodman, Mass., and report to the commanding officer for duty.

The board of medical officers appointed August 26, 1911, War Department, is hereby dissolved.

A board of officers of the medical corps to consist of Colonel Charles Richard, Lieutenant Colonel Walter D. McCaw, Major Powell C. Fauntleroy, Major Carl R. Darnall, Major Frederick F. Russell, Major Charles R. Reynolds, Major Paul S. Halloran, Captain William T. Davis, Captain Charles F. Craig, Captain William A. Wickline, Captain William A. Duncan, Captain Henry J. Nichols, and Captain Arthur C. Christie, is appointed to meet at the Army Medical School, 721 Thirteenth Street, Washington, D. C., at the call of the senior member of the board to determine the results of the preliminary examinations of applicants and for the final examinations of candidates for admission to the Medical Corps. The junior member of the board will act as recorder.

Births, Marriages, and Deaths.

Married.

Bray—Johnson.—In Camden, N. J., on Thursday, November 7th, Dr. Walter S. Bray and Mrs. Ida L. Johnson. Hartigan—Gladding.—In Norwich, N. Y., on Thursday, November 7th, Dr. William Edward Hartigan and Miss Gertrude E. Gladding. Hoguet—Gourd.—In New York, on Saturday, November 16th, Dr. J. Pierre Hoguet and Miss Helen Noel Gourd. Osincup—Wodring.—In Waverly, Iowa, on Thursday, November 7th, Dr. F. A. Osincup and Miss Mary Wodring. Traylor—Bothwell.—In New York, on Wednesday, November 6th, Dr. George Akbert Traylor, of Augusta, Ga., and Miss Louise Bothwell.

Died

Abercrombie.—In Warwood, W. Va., on Thursday, November 7th, Dr. James William Abercrombie, aged fifty-three years. Baker.—In Yaphank, N. Y., on Saturday, November 9th, Dr. Clarence A. Baker, aged fifty years. Bell.—In Springfield, Mass., on Sunday, November 3d, Dr. Homer S. Bell, aged sixty-one years. Chapman.—In New York, on Tuesday, November 12th, Dr. Robert Ferguson Chapman, aged seventy-one years. Collins.—In Baltimore, Md., on Sunday, November 3d, Dr. Randolph Littrell Collins, of Burgess Store, Va., aged twenty-six years. Duffy.—In Newbern, N. C., on Tuesday, November 5th, Dr. Francis Duffy. Elliott.—In Kingston, N. Y., on Saturday, November 9th, Dr. Elmore E. Elliott, aged fifty years. Fleming.—In Lawrence, Mass., on Sunday, November 3d, Dr. Anthony Fleming, aged thirty-nine years. Graddy.—In Lexington, Tenn., on Saturday, November 9th, Dr. Lynn B. Graddy, aged fifty-seven years. Henry.—In Red Hill, Va., on Monday, November 11th, Dr. Thomas Stanhope Henry, aged eighty years. Jones.—In Utica, N. Y., on Thursday, November 7th, Dr. William W. Jones, aged fifty-six years. MacCabe.—In Gloucester, Mass., on Tuesday, November 12th, Dr. Arthur MacCabe. Martin.—In Norwalk, Ohio, on Sunday, November 10th, Dr. Alden H. Martin, aged forty years. Mitchell.—In Kansas City, Mo., on Monday, November 4th, Dr. John T. Mitchell, aged sixty-five years. Owen.—In Jonesboro, Ala., on Tuesday, November 5th, Dr. William Marmaduke Owen, aged seventy-seven years. Record.—In Quincy, Mass., on Sunday, November 10th, Dr. Wellington Record, of Wollaston, aged fifty-nine years. Treichler.—In Honey Brook, Pa., on Saturday, November 2d, Dr. Claude Galen Treichler, aged seventy-two years.

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GASTRIC AND DUODENAL ULCERS.

A Suggestion as to Etiology and Treatment.

By W. E. DEEKS, M. A., M. D.,

Ancon, C. Z.,

Chief of Medical Clinic, Ancon Hospital

The etiology and consequently the treatment of gastric ulcers still remain to a large degree in the domain of speculation. Much has been written on the subject recently, but no theory as yet suggested appears to have received anything like universal support from the profession. Medical means have so often proved inadequate that surgery is now threatening to usurp this field in its entirety. That the condition may become surgical is beyond doubt, but that the great majority of acute and subacute cases will yield rapidly to medical methods is equally certain, and the writer desires to place before the profession his theory as to etiology and his method of treatment, which clinically appears to give uniformly perfect results.

Before doing this, brief mention will be made of some of the numerous theories advanced, with the object of showing the common foundation upon which they are based, thus indicating that almost all have some element of physiological fact in explanation of the pathological condition. Of the theories now in vogue, the following are some of the most important which have had their advocates from time to time:

(a) Embolus or thrombus in the bloodvessel (Virchow).

(b) Anemia and chlorosis with hyperacidity (Ewald).

(c) Alkalescence theory (Cohnheim).

(d) Bacterial necrosis (Letulle and Martin).

(e) Occupations: 1. Metal workers (Bouveret) and glass workers (Berritz), because of swallowing dust particles. 2. Shoemakers and tailors, because of the cramped position and pressure (Ackermann).

3. Cooks, from swallowing overhot food (Payne).

(f) External traumatism or blows (Ritter).

(g) Extensive superficial burns.

(h) Arteriosclerosis and associated chronic nephritis.

(i) Infectious diseases, such as syphilis and tuberculosis.

(j) Injury or disease of the nervous system.

(k) Hyperacidity (Riegel, Einhorn, Robin, Fenwick).

(l) Constipation.

(m) "Local symptoms of a general dyscrasia, characterized by the recurrent appearance in the blood of toxines with a specific cytolytic for gastric and duodenal tissues." (E. C. Hort.)

Such an array of theories must be sufficient proof that much still remains to be learned about this frequent, and some assert, increasing pathological condition. In order to find some basis on which to build our data, it would appear that there are some symptoms which are uniformly present in all cases, and these are the digestive disturbances preceding the development of the more complete manifestations of the presence of the ulcer. The gastric or dyspeptic symptoms vary somewhat, preceding the development of the ulcer. They may be roughly grouped clinically into two main divisions:

(a) Hyperacidia, or nervous dyspepsia, and (b) atonic flatulent dyspepsia, though the symptoms merge frequently from one into the other.

If one studies these groups from a general clinical standpoint, and not from stomach symptoms alone, it will be found that the stomach is but one of the many organs affected; in fact, the symptoms which are coincident are those of a general dyscrasia in which more than one organ participates. It is on account of this local view in the symptomatology that the diversity of theories in regard to the etiology has arisen. Let us then consider the general symptom complex associated with these two clinical types of dyspepsia, and in so doing we may be able to arrive at some basic principle from which justifiable inferences can be drawn, both as to etiology and treatment.

The first or hyperacid group of digestive disturbances is always associated with one or more of the following physical findings or symptoms referable to different organs: A clean, often red and irritable tongue, dental caries, stomatitis, pyorrhœa alveolaris, pharyngitis, occasional attacks of tonsillitis, rapidly recurring hunger and an appetite easily satisfied, pyrosis, ineffectual belching, a tendency to constipation often alternating with diarrhea, headaches, rheumatic manifestations of all kinds, including the arthritic, cardiac, and muscular acute and chronic types, iritis, retinchoroiditis, irritable bladder, acne, eczema, alopecia, anemia, recurring bronchitis, idiopathic Bright's disease, and, in women, dysmenorrhœa.

In the other group of digestive disturbances, or in those suffering from flatulent or atonic dyspepsia, the same general symptomatology obtains, but the local symptoms are different. In these cases the tongue is paler, flabby, and often coated. Hunger manifests itself only after the patient begins to

eat, and he or she then ingests far more than anticipated, actual belching of gas is present and is frequently voluminous, the tendency to constipation is greater, and cardiac asthma is frequently a marked symptom. There is also a tendency to obesity, in contradistinction to the hyperacid group, in which the patients are under weight. It is in both groups that acute and chronic appendicitis occur.

The writer does not intend the reader to infer that all these conditions are present in each of the two groups of dyspepsia, but that all of the conditions mentioned above have the same etiological basis, in which the stomach participates, and the organ or organs affected are the result of personal idiosyncrasy and localization. In other words, indigestion leads to a local stomach condition, and a generalized systemic autointoxication, which may localize in any part of the organism, and by its influence through lowered cell resistance give rise to subjective symptoms only, or, if continued by the aid of bacteria, lead to actual necrosis of tissue.

Gastric and duodenal ulcers are merely the manifestation of two influences on the stomach and duodenum respectively, a local irritation and subsequent bacterial invasion following a predisposing general autointoxication, the result of improper feeding.

Localization in disease is a phenomenon well known clinically, but which has not been dwelt on sufficiently by medical writers. A more thorough understanding of its determining factors will help to elucidate a number of obscure problems in medicine. If we take, for example, a well known disease like syphilis, we find that its clinical manifestations are protean in character. These are dependent, not alone upon the severity of the disease through increased virulence of the treponema, or increased susceptibility of the host, but upon other factors, some of which admit of explanation. We are familiar, for example, with a variety of skin eruptions, and the general glandular enlargement, but what causes iritis in one, alopecia in another, predominating exostoses in a third, cardiac, pulmonary, and hepatic manifestations in others? Why, in one patient, do only tertiary granulomata develop in the late manifestations of the disease, and in others neuron degenerations?

If some light can be thrown on these problems in some one disease, inferences can be justifiably drawn in regard to others. That localization does occur is beautifully shown in our studies on malaria in Ancon Hospital. The plasmodium responsible for the disease can be observed so readily in the tissues, that absolute deductions can be drawn. Localization manifests itself in malaria in two ways, either by the mechanical plugging of the capillaries of the brain and other organs by plasmodia infected erythrocytes, or by the localizing effect of toxine resulting from the malarial infection. We know of at least three forms of toxine in malaria: A specific one which acts upon the tissues developing antibodies which bring about immunity; second, hemolysin; and, third, cytolyisin. Hemolysin is responsible for hemoglobinuria, and cytolyisin causes the subconjunctival and cerebral hemorrhages, diffuse nephritis, and focal liver and spleen necroses, which we so often see in malaria, and must in consequence

be of a complex character, inasmuch as it is selective for a variety of tissue cells. It is difficult to say what determines localization in malaria, but we have evidence to show that the physiological determination of blood to a part is one important factor. This is illustrated in those cases in which occur abortions, which so often are attributed to the use of quinine in large doses. Undoubtedly quinine does play a rôle in stimulating uterine contractions, but several cases here recently in women who have aborted during an acute malarial infection suggest a different cause. The patients when admitted showed rich blood infections, which almost entirely disappeared after two or three days of treatment. They then aborted, and subsequently died. Though the malarial organisms were practically absent from the peripheral circulation at the time of death, and at autopsy very few were found, Dr. W. M. James found the richest possible infection in the placental site; in other words, where the physiological activity was greatest. Moreover, this accumulation of parasites in the maternal blood sinuses cannot be attributed to the small lumen of the bloodvessels, or to the inability of the parasite infected erythrocytes to pass endothelial cells already injured by malarial toxine, as some believe, to take place in the brain, for the sinuses are too capacious to admit of such a possibility.

If, again, we refer to syphilis, and study it from the foregoing standpoint, we find that similarly, physiological determination of blood determines symptomatology.

One of the most striking clinical observations one meets with in the colored wards in Ancon Hospital is that, notwithstanding the large amount of syphilis observed in all stages, brain lesions are practically absent, if we exclude those directly concerned with the special sense organs. In over 50,000 medical patients admitted to this hospital during the last seven years, most of whom were colored, there is rarely seen among the latter a case of locomotor ataxia or paresis. The late lesions are generally cardiovascular, hepatic, splenic, or, of the nature of exostoses, skin ulcers, and spinal pachymeningitis. In other words, as they are all working men, and not thinking men, the lesions follow in those organs which are physiologically most active.

It will be our object first to discuss the nature of the autointoxication in gastric and duodenal ulcers and then some of the determining factors in localization. In the group of systemic affections above mentioned, does it not strike one that in comparative pathology none of these conditions are known or treated, with the possible exception of the dog, cat, and house rodents, which eat more or less similar food to civilized man? In other words, animals which live in their natural environment on food designed for them in the process of evolution, are free from the so called metabolic diseases which manifest themselves in such a variety of forms in civilized man. If this is true, then we must look to the food ingested by civilized man for the cause of this extensive group of metabolic autointoxications.

We have not to go back many centuries to ascertain how we have evolved in this respect. If we consider the foods then and now used, we will

find that culinary evolution has altogether outstripped organic evolution. For purposes of clear definition on this point, we will consider foodstuffs under the following heads: Proteids which include meat, fish, shellfish, eggs, cheese, and milk; cereals, as prepared by our remote ancestors and the modern methods of hulling them and converting them into pastries and bread; tuber starchy foods as exemplified in the potato, Irish and sweet, the yucca, etc.; sugars, saccharose, and fruit; green vegetables, fresh and canned; fruits, fresh and canned, and nuts; fats, animal and vegetable; and mineral salts including water. We have elaborated the usual classification of proteids, hydrocarbons, and carbohydrates in order to make the argument simpler.

Man is omnivorous anatomically, and as such has probably always used the different proteid foods above enumerated, either raw or cooked. In regard to cereals how differently they are prepared to-day through the refinements of civilization compared to the aboriginal method of grinding them between stones where husks and mineral salts contained therein become part of the food! It does not require much argument from a physiological standpoint to show how the latter is much better for the individual than the former, not only to furnish the salts requisite for metabolic activities, but also to stimulate intestinal peristalsis. When these are removed and the starch gluten is leavened and baked into the form of bread and cakes, we have products refined in appearance, devoid of elements which Nature intended to be used and partially dextrinized, thus rendering them more susceptible to fermentation. In the tuber starch foods consisting almost entirely of starch we have foods in the Irish and sweet potatoes which are an innovation of the fifteenth and sixteenth centuries, but are now in such universal use that in some countries, with the great majority of inhabitants, no meal is complete without them; thus they have gradually usurped the place in the dietary of other vegetables which were more common and in general use in aboriginal times.

Undoubtedly the green vegetables were a large factor in the diet during our evolution period. Their widespread distribution and the ease with which they were cultivated commended them and they served an important physiological use. They not only provide richly the salts necessary in our daily regimen, but also through the indigestible cellulose help to distribute over the absorptive mucous membrane the assimilable food materials, thus contributing largely to the peristaltic action of the bowel. Nowadays this group of foodstuffs is being more or less supplanted by the potato and hulled cereals, faster indeed than the physiological evolution of man, and this is one of the most potent reasons for the almost universal constipation habit. Undoubtedly on fruits and nuts our ancestors lived largely; they were easily procured and healthful, and in temperate and tropical climates can be obtained in a fresh state almost the whole year around. They are absolutely essential to our digestive organs, and baneful only when used in canned goods and syrup decoctions which is the present almost universal custom.

It is perfectly true that in the colder climates fresh fruits and green vegetables are not obtainable a large part of the year. Nature, however, compensates for this by the greatly increased metabolic activity when the carbohydrates and hydrocarbon series can be handled with less difficulty. This is essential for the production of the great body heat necessitated through the increased body radiation in cold climates.

In the springtime, before the earliest vegetables appear or can be obtained, how frequently we see people suffering from pustular eruptions, rheumatisms, eczemas, etc., consequent upon the use of a diet which can be assimilated in winter, but which cannot be handled when metabolic activity is lessened.

In the sugar group it is well known that fruit sugars are constituents of almost all fruits, but in such quantities and associations that they are physiologically assimilable. Saccharose, however, is practically a modern product extracted chiefly from sugar cane, beets, and maple trees. Chemically, a solid alcohol, it has become from a local little used product the universal condiment in the food of the civilized races. It is used in man's drinks, in his food, and as his refreshment between meals, not only in solution, but in the form of the ubiquitous candies of commerce. There is nothing in the human stomach to render it physiologically assimilable. It is attacked there by bacteria which oxidize it and convert it into the highly irritable organic acids such as butyric, valeric, etc. If taken in solution on an empty stomach, or when the food is passing into the small intestine, it then becomes a food product as the invert ferment of the intestines breaks it up into dextrose and levulose sugars which are assimilable. If taken, however, mixed with a food which must remain in the stomach one or more hours before sufficiently liquefied and chymified, then sugar becomes a foreign body acted on by bacteria, and its ultimate products become important factors in the production of our metabolic diseases.

It is in these civilized food products that we must look for the agents that are responsible for the autointoxications from which the human race now suffers, in the saccharose, tuber starches, and hulled cereals. If the clinician will inquire into the diet history of the patients suffering from hyperacidity he will find in every instance that he or she is a consumer of saccharose in some form. As stated above it is acted upon by bacteria in the stomach and converted into irritable diffusible organic acids which have a localized influence in stimulating the gastric cells to hypersecretion, hence hyperacidity. Then, being absorbable, in some form they enter into the general circulation as intoxicants and probably after further absorption become eliminated by some of the excretory organs, skin, lungs, kidneys, or bowels.

They exert an influence on the tissues while in the circulation and also on the excretory organs while being excreted. The flatulent dyspepsias result from the ingestion of starchy foods, particularly pastry, bread, and potatoes. The amount of food ingested is large and as the ptyalin fermentation continues until the hydrochloric acid reaches

about 0.2 per cent., the amount of gas generated may be enormous; and belching, sour eructations, and cardiac distress from mechanical pressure result. Every gradation between these two types of indigestion exists, and depends on the nature of the food ingested, but in every case the indigestion can be referred to an excess of sweet and starchy foods.

What the exact nature of the intoxicants are that result from the fermentation is not in my province to ascertain, but clinically the subjective and pathological symptoms disappear when measures are adopted on the above mentioned physiological lines.

One of the commonest symptoms of a diet in excess of these foodstuffs is constipation, toward which four factors mainly contribute. They are: 1. The sweet and starchy foods in excess; 2. the lack of exercise; 3. inadequate water drinking; and, 4. the absolutely procrastinating method of some people in attending to the periodical demand of Nature to evacuate the bowels, thus establishing a toleration in them to an accumulation of excrementitious material through reflex peristaltic inhibition.

It is a simple matter to correct every case of constipation by first cutting out sweet and starchy foods and replacing them with green vegetables and fruit; second, by cultivating some form of daily exercise; third, by drinking sufficient water; and fourth, by developing a systematic daily habit of evacuating the bowels at some fixed time. Exceptions to this are found in those patients suffering from anal fissures, hemorrhoids, and other affections leading to reflexes and obstructions which require surgical intervention; but these are in the vast minority.

Constipation or fecal retention within the bowels is prone to be followed by anemia of the chlorotic type. The nascent sulphur developed within the bowel through the decomposition of proteids by putrefactive bacteria seizes on the iron of the hemoglobin. Particularly is this true if the evacuation of the bowels is delayed too long.

The reasons why iron salts and magnesium sulphate are administered with such good results in this condition are obvious. The salts remove the constipation and the iron satisfies the sulphur component, thus preventing it from drawing on the hemoglobin for a metallic salt for which it has a strong affinity. Anemia is followed by a relaxation of bloodvessels with a consequent tendency to catarrhal conditions in all mucous membranes, and this means lowered cell resistance. Here then is the chain of conditions which leads up to gastric and duodenal ulcers. A sugar starch diet, to the exclusion of fruits and vegetables, which ferments, forming irritating diffusible organic acids which stimulate the gastric glands and give rise to hyperacidity. On the other hand, the same diet tends to a lessening of peristaltic action, then constipation, followed by anemia with lowered cell resistance. The combination of hyperacidity with lowered cell resistance in an anemic mucous membrane is sufficient to bring about a loss of continuity in the mucous membrane with the attendant bacterial invasion. Mechanical irritants of any sort may assist to the same end. With this etiology in view the

form of treatment is self evident. The plan which I follow and which has given brilliant clinical results is, first, in severe cases with hemorrhage, absolute rest in bed and a liquid diet for two or three days until vomiting ceases and there is no more hemorrhage either into the stomach or duodenum. The liquids should consist of orange juice without sugar, milk, and broth. Then gradually add eggs, meat balls underdone, fresh fruits and green vegetables cooked, particularly those of the softer kind, like squash, chayoti, and vegetable marrow. After six to ten days every variety of meat, fish, green vegetables, cooked and uncooked fruit can be given. Care must be taken to exclude in every form sugar, potatoes, bread, toast, cakes, and pastry. The only medication given is dilute nitric acid before meals from the onset of the attack. It is given with the object of destroying the bacteria of starch and sugar fermentation in doses of from fifteen to twenty drops of the dilute preparation in half a tumbler of water.

If this conception of the etiology of gastric and duodenal ulcers is correct, it explains a series of problems which are now puzzling the medical men throughout the English speaking world. British physicians complain that not only these conditions, but also appendicitis and cancer are on the increase. Doctor Saundby recently stated in the *British Medical Journal* that the consumption of sugar per capita in the British Isles had increased in the past fifty years threefold. A similar condition of things exists in the United States, where the consumption of sugar has arisen to about eighty pounds per capita.

I might here recite a series of cases which have been treated by this method and which have been under my observation, some for months and some for years, without recurrence, but any physician who cares to follow this method will have similar gratifying results.

One of my patients who vomited about two litres of blood, returned to duty in three weeks after his hemorrhage after this method of treatment, and after sixteen months of observation is now in perfect health. If, however, the ulcer is very chronic, surgical measures are indicated, but when the immediate effects of the operation are over this above mentioned line of treatment should be followed until recovery is complete.

THE INHERITANCE OF ACQUIRED CHARACTERS.

A Study of the Recent Literature.

By JONATHAN WRIGHT, M. D.,

New York,

Director, Department of Laboratories, New York Post-Graduate Medical School and Hospital.

IV.

BACTERIAL PHENOMENA AS PROBLEMS OF HEREDITY.

The chief contact of interest which bacteria and protozoa have with the general subject of heredity, has arisen from the assertion made years ago by the neoDarwinians that bacteria are beings in which

we find an instance of immortality, because however many million times they may multiply a year, each one of them possesses some of the original—the primordial germ plasm. It would take a much better mathematician than I to demonstrate exactly how ridiculous this is. Figuring on the infinitely small or the infinitely big is beyond me. Perhaps a better one than a mathematician to explain just how much of the primordial germ plasm a bacterium would possess a thousand years after his specially endowed ancestors came into life, would be a homeopath. Really there seems no way to treat such a proposition except as a joke. This is quite out of place in a scientific paper, and the remark may easily be elicited from you that perhaps a subject one can speak of only as a joke had better be left out of a review of scientific work altogether, but the reason of its intrusion here will immediately appear. I have only to interject the remark that epigenesis would seem to have it all its own way when we stop to contemplate how much of the epigenetic bulk of the bacterium must thus adhere to the infinitesimal dose of the primordial germ plasm yet remaining after infinite divisions and dilutions. My reason for introducing this absurd notion here, is to emphasize the same absurdity in the Weismannian conception of the primordial germ plasm in highly evolved multicellular beings—ourselves, if you please. One must be not only a vitalist but a homeopath, indeed, to think he has wrapped up somewhere in his corporeal being a bit of the “primordial germ plasm.” Whether the bacterium is wholly germ plasm (nuclear), or wholly somatic, or whether, as seems now evident, it is itself a complex entity not less than has been shown for the single cells of multicellular beings, whichever way we may regard it, the rapidity of its divisions, and the ease with which we can control its environment, would seem to have marked it out as an especially fruitful source from which to derive the experimental data of heredity, but as a matter of fact the data thus far obtained of an important kind have been astonishingly few.

While drawing attention to the fact that the foregoing considerations have been the chief ones engaging the attention of the students of heredity in studying bacteria, I am free to say that I myself have been chiefly interested in bacteria in their relation to heredity from another point of view. A number of years ago, I spent considerable time in going over the literature of the history of medicine. It was aside from the main objects of my work, but, as so often happens, matters of collateral interest, brought to my attention in this way, have, in the years which have elapsed since I wrote a history of laryngology, become of much greater import to me than the original object of my task. I was very much struck, as is every one who pursues the subject of medical history, with the evidences of constant differentiation. Indeed, it seems to sum it up pretty well, to define medical history as a process of differential diagnosis. From a perfect chaos and welter of human suffering in the mass, there has emerged, as a result of differentiation, one separate clinical or laboratory entity of disease after the other, until none of us can tell at this moment how many there actually are, not to mention the folly of

attempting to estimate the number not yet differentiated. This, I am sure, is the conventional idea the student of medical history has of the subject as a whole. But this is not all the attentive student may perceive there is to be learned. With all due regard paid to the thought of differentiation as marking the chief events in the evolution of medicine, he must finally realize that there is good reason to believe that, even in historical times, some types of disease have been profoundly altered, and new ones have arisen. To my mind, indubitable evidence exists in ancient medical literature, in the works of Hippocrates, for instance, that syphilis as a sporadic affection, at least, was observed thousands of years before Columbus sailed to find the eastern coast of Asia and found a new world. This would be of subsidiary interest to us in the study of heredity, if we did not have to explain why, when Charles V invaded Italy, his soldiers acquired there a venereal affection which has been baptised *le mal français* ever since, and has ever since ravaged all lands as an endemic scourge. If *Treponema pallidum*, five hundred years ago, was only to be found on the virgin shores of the western Antilles, we may push its origin back into the rubbish heap of obscurity. If, on the other hand, we conjecture that it indeed existed in preColumbus times in Europe, as is asserted from time to time, historically we have to account for the sudden wail which arose from suffering humanity in the early part of the sixteenth century. What modification in the human frame, or what accession of virulence, what destructive epigenesis was grafted on the tenuous organism we have just discovered? We may remark that at the Renaissance, humanity became vocal for the first time in a thousand years about a good many of the ills and joys it had experienced, but we cannot stretch that explanation to cover the Greek and Roman civilizations. We may be sure that Aristophanes would have jeered at his Athenian audiences, and Juvenal would have scarified the Roman public with diatribes by the side of which Rabelais's jokes and Savonarola's shaking of the brimstone wallet would have been puny efforts, if syphilis had preyed upon the gilded youth of the Peloponnesus and of Her of the Seven Hills as it did upon the chivalric knights and chaste dames of late medieval times. Alexander's western hosts penetrated the ancient eastern world, but they brought back therefrom none of the pests which preyed upon later times, measles, smallpox, cholera, scarlet fever, etc., ascribed to the Arabian invasion of Europe. Greek medicine, so thoroughly describing diphtheria in the pages of Aretæus, would certainly have given us an inkling of the existence of some of them.

The question therefore presents itself: Has any bacterial disease arisen in historical times by heterogenesis from saprophytes (symbiotic or other), not forgetting mutational susceptibilities in the cells of the human host himself?

A number of years ago, I was encouraged by De Vries's work to hope, that thereby we would get some encouragement to attempt to trace out this relationship,¹ but on the whole these hopes have not been realized, owing to the lack of success in lines

¹The Theory of Mutation in Its Relation to Medicine, *Medical News*, July 9, 1904.

of investigation to which I have alluded above. Nevertheless, to me this has lent an extra zest to the question of bacterial mutation, but there are sufficient clinical and laboratory facts at our disposal, suggestive enough to arouse an interest in the student, aside from my own exceptional preoccupation. I have always thought, how enticing the study of historical medical data might be made, if entered into from the standpoint of the student of bacterial mutation. Notwithstanding that this field is so invitingly open to us, notwithstanding the encouragement of the clinical and the historical data referred to, the study of variation in bacteria has thus far yielded very insignificant results, especially from the standpoint of heredity.

One of the difficulties in studying sudden changes in bacteria is that of isolating the separate bacillus. This has been attempted with some success by Barber² but the method by which it is accomplished is so difficult that little can be hoped from it, and until some method is devised by which selected plants of single organisms can be made, it is not probable that we will learn very much from the observations of heredity in bacteria, morphologically or functionally either. Therefore, although a very large number of references to work of this kind lies before me, a review of the subject elicits very little that is convincing. Change in the colors of colonies, difference in the virulence, variations in the morphological form, for instance in the tubercle bacillus according to the medium upon which it is grown, or the organism in which it is injected, have probably no very deep biological significance, or at least no significance of principles other than those familiar to us from more satisfactory methods of observation. These changes, sudden and gradual, in morphology and in growth, have perhaps been noted more frequently and studied more carefully in the coli group than in others, but even with them the results from a purely hereditary point of view are not very important. This is very disappointing, since we were better acquainted with the modifications and mutations of pathogenic organisms, very much more could be done in preventive medicine. Slow gradual variations, made in answer to environment, temperature, food, etc., affecting bacteria in mass cultures, we are abundantly able to study, but if we are to study the sudden wide mutations from which alone, it is asserted, by a large and growing school of biologists, that new species spring, it must be in separate bacteria, as we have no reason to hope that such wide variations will appear in mass cultures. From such wide variation in chemical or molecular structure of a saprophytic bacterium becoming pathogenic, we may imagine that new diseases have sprung.

THE INTRACELLULAR MECHANISM OF HEREDITY.

The Jessup committee³ have registered observations which go to show that certain somatic cells of the testicles of experimental animals are especially sensitive to the influence of alkaline salts circulating in the blood plasma after injection in the general circulation, those of no other organ showing them. The influence, therefore, of plasma en-

vironment on the germ cells is suggested by these experiments, though similar results were not observed in the ovaries.

It has long been realized in biology that in some way, if we are to have further direct demonstrations of the mechanism of heredity, we must seek them in smaller entities than the cells of the metazoa. We must seek them, not only in the bacterial and in the lower protozoal forms of life, but in the nuclei and chromosomes of the cells themselves. Hopeless as this at first appeared, a beginning, if nothing more, has been made, especially by Boveri, his followers, and coworkers. In much of this work, the suggestive things that stand out are the influences of the various kinds of environment on the nuclei and the chromosomes. Godlewski⁴ has repeatedly insisted that there is conclusive evidence, not only that the nucleus transmits hereditary characters, but that the cytoplasm bears its part in the process also, and a number of authors whom he quotes deduce the same conclusions from their own experience.

J. F. McClendon⁵ in an article on the segmentation of the eggs of *Asterias Forbesii* deprived of chromatin, shows that the visible chromatin, at least, is not necessary for the process of segmentation, since when "the unfertilized egg from which the first polar spindle or second polar spindle and first polar body were removed, was immersed for five minutes in carbonated sea water and returned to sea water, it developed cytasters and divided completely into a number of parts." To demonstrate this the author, by an ingenious process, sucked out the chromatin spindles with pipettes. It may be objected to this that the "juice" of the chromatin may permeate the nutritive material and supply to it the chemical combination necessary for furnishing material characters to the larva.

Erdmann⁶ quotes Boveri as saying in 1903 "The chromatin increases between two divisions, whether it is much or little—about double, and this increase is therefore a function of the chromatin and not of any other factor of the cells. In 1905 he stated, "The surface of the nucleus is directly proportional to the number of chromosomes and thereby also to the chromatin contained in them." These propositions were denied by Marcus, in 1906, "For the chromosomes on fission do not grow to double their original size, but they become in the course of fission constantly smaller." Erdmann's results showed (in *Strongylocentrotus lividus*) an increase of the chromatin of the cell nucleus, but the chromosomes grow constantly smaller up to the pluteus stage. Erdmann points out that his observations and measurements show that there is considerable variation in the relationship as to the size between nucleus and plasma, at different stages, under different conditions, but "a series of these changes recurring in every culture is to be ascribed to the gradual equalization of the nuclear plasma tension in the succeeding stages."

The bearing of the following on the question of heredity is obvious: "The chromosomes are not,

³American Developmental Mechanism of the Organisms, XXXII, 1 and 2, Dec. 1907, 1911.

⁴Ibidem, XXX, 4, November 24, 1908.

⁵Experimentale Untersuchungen der Massenverhältnisse von Plasma, Kern und Chromosomen in dem sich entwickelnden Seeigel, Archiv für Zellforschung, II, 1, October 13, 1908.

⁶On Heredity in Certain Microorganisms, Kansas University Science Bulletin 4, 1, pp. 3, 48, 1907.

⁷Biochemisches Journal, vi, 2, 1911.

as Boveri would have it, dependent on themselves for their size, but show, what is self evident, that their mass stands in correlation with the changing conditions of the cell; their number is simply the best tactical arrangement to carry out the intervening act of nuclear division. It is only in this period of nuclear division that the chromatin takes on the form of the chromosome." The ratio of chromatin mass to chromosome surface depends considerably on the stage of the development of the segmenting nuclear division. In general, however, the chromosome surface increased in the equation, as the temperature of the environment of the egg in Erdmann's experiment was lowered. He confirms Boveri's assertion that the size of the larval cell is a function of the mass of the chromatin which it contains, but he refutes Boveri's further dictum, that the cell volume is directly proportional to the number of chromosomes, that is, that the extent of surface is proportional to it, as I understand it; on the contrary, the chromosome number plays no part in determining the volume of the cell. The quantity of the chromatin, and the number of the chromosomes, are separate considerations in the study of the size of the cell and its nucleus.

Wilson and Herbst are cited as declaring that the parthenogenetic egg shows chromosomes larger than the fertilized egg, and shows strong currents, attracted to them, of homogeneous plasma, that is, plasma free of kernels. Their experiments refute the assertion of Driesch, that the size of the cell remains the same under varying conditions as to the size and number of its elemental parts. The assertion that the size of the animal is wholly dependent upon the number of the cells, and not the size of them, which remains constant, seems therefore to be refuted. Though the cell size varies, this is dependent on the relationship between the mass of the chromatin and the cytoplasm. The time elapsed in passing to the pluteus stage is markedly influenced by the temperature, which increases the osmotic pressure irrespective of the chemical constitution of the fluid, thus conforming with the general law of chemical action, yet reaching in the end approximately the same condition of pluteus formation.

I have elsewhere insisted that the impact of the sperm of the male on the germ cell of the female in the conjugation of the higher metazoa, may be thought of as the impact of a certain kind of external agent upon the germ plasma. The phenomena of hybridization, and the results of crossing within the species, are the heterogeneous products of this external influence. Something of the kind is illustrated in the protozoa, which has a medical interest.

Ehrlich,⁷ in his work on the trypanosome of monkeys, came to the conclusion that by means of inoculation certain bodies are formed in the trypanosome itself which are capable, not in themselves of producing curative antibodies, but when brought in conjugation with a fresh trypanosome, within or without the monkey's body, they form a combination, whereby a curative antibody is produced in the monkey's body. In other words, in a combination between two organisms, neither of

which has in itself a specific influence on the results, a new character is bred which remains constant in the new race of trypanosomes under the same environment. Highly theoretical as this observation is, and though it is advanced under the strain which has been imposed upon Ehrlich's former theories, nevertheless, it may serve at least as an illustration of the advance in the idea of the transmutation of species wrought by a supposed combination of molecular groups. Thereby is produced a stable combination which did not exist before. This, then, is an acquired character transmitted as racial. This may also serve as a molecular explanation of heredity, to which I have alluded in former communications, which must stand or fall by the theory of the transmission of acquired characters in unicellular animals. These observations of Ehrlich, as of Calkins and others, to which I have referred, have been made chiefly upon protozoa, but we may let them form in our thought a connecting link between the phenomena of the metazoa and those of still lower forms of life, the bacteria. It is no doubt something of this kind which changes a virulent breed of streptococci into an avirulent breed of streptococci in the human body, but while Ehrlich's new trypanosomes, cultivated through 380 generations, showed the constancy of some of these artificial molecular characters; as we descend in the complexity, at least in the visibility, of living beings—to the bacteria—we know, from numerous examples, that acquired characters are not so constant. Thus we receive a hint that constancy of heredity depends, to some extent at least, upon complexity of structure, but an uncertainty enters into our consideration, due to the fact, as I have remarked above, that no observations have as yet been possible on mutations in individual bacteria.

No serious difficulty is found in passing from observations on bacteria to those on protozoa, from observations on plant life to those on animal life, in the study of the intracellular processes supposed to be concerned with heredity. Van Beneden, 1883, founded the theory of the persisting individuality of the chromosomes which was confirmed by Boveri in 1888 (Montgomery). In a short résumé of a larger work, Ruzicka⁸ thinks he has demonstrated, by means of a comparison of the processes in the protozoan and the metazoan mitoses, and in bacterial fission: First, that the processes are fundamentally identical; second, that there is not necessarily a continuity of the germ plasma in the metazoa; third, that the chromatin in mitoses disappears in the resting stage and is manufactured anew out of "plastin" when again roused to activity. This has until very lately been very nonorthodox doctrine.

Much of this sort of observation has seen the light recently and it is finding its way to general recognition. It means apparently that the fundamental distinction between the germ plasma and the soma is becoming obliterated in conventional biological thought. Calkins⁹ recently has drawn attention to the fact, on the other hand, that in the

⁷Die Bacterien und das Verhältniss Proteidens zum Bacterym zur Vererbung Mechanik, von Dr. Vladimir Ruzicka, Archiv für Entwicklungs-Mechanik der Organismen, xxi, 1, November 21, 1908.

⁸Popular Science Monthly, December, 1911.

⁹Vierhewer, medizinische Wochenschrift, 5, 1909.

protozoa, as in the metazoa, there is an apparent differentiation of the soma from the germ plasm, and he ends a short article on the subject in which he deals with *Paramecium* and other protozoa as follows: "The widely accepted view, therefore, as first formulated by Weismann, and repeatedly stated in general works on biology, that protozoa differ from metazoa in having no equivalent of the somatic cells, and therefore no somatic or natural death, must be abandoned. . . . The protozoan is not a potential germ cell, but, like the metazoa, is the carrier of the racial germ plasm, which in the great majority of protozoa is differentiated from the somatic plasm."

Some years ago, attention was drawn in the variations of bacteria, morphological, cultural, and functional, and it had to be admitted that these various modifications persisted at least for several generations after their substance was modified by the environment; this forming an apparent exception to the rule laid down by the ultraDarwinists, that the germ plasm is unchangeable; it was then pointed out that there was here no differentiation of germ plasm into somatic constituents. With the advance of our powers of differentiating intracellular structure, a certain amount of structure has been clearly made out in the bacteria. Certain things resembling the nuclei of cells, and certain things analogous to the cytoplasm surrounding the nuclei, are noted; so that there seems here to have been a discrepancy in this explanation of the ultraDarwinists so far as the morphological structure is concerned. We have also advanced considerably in our knowledge of the dynamic or functional aspects of bacteriology, and, contrary to the impression which prevailed a few years ago, there seems a lack of evidence that pathogenic bacterial functions can be very materially altered. We have referred to the attempt of Ehrlich to support his theory by the creation of another theory of molecular mutations in trypanosomes and in the spirochæte. There are still some who are disposed to believe, for instance, that the various forms of the tubercle bacillus have sprung by mutations one from the other or from a common stock, but on the whole the attempt to demonstrate this mutation experimentally, by turning the bovine into the human type of bacillus, to say nothing of turning avian or reptilian tubercle bacilli into other forms, has failed. The streptococci presenting so many characteristics in common, it has seemed justifiable to place the 150 (more or less) variations of chain cocci in one family, but whether a pathogenic streptococcus can be turned permanently into a saprophyte is a matter of doubt. Rolly¹⁰ has even recently come to the conclusion that "a transition from the hemolytic to the nonhemolytic type of streptococci has not been proved." It would seem at first thought, that this question of the variation in the same strain of streptococcus from one period of time to another, might be safely answered in the affirmative, but this would be based very largely upon clinical evidence. The presence of streptococci in the healthy throat, which subsequently may produce symptoms of disease in another individual, or in some other animal, or even

at some other time in the same individual, is not so clearly a demonstration of mutability as one would think, for pathogenicity is not so much a characteristic or an attribute of the bacterium, as it is an expression of relationship between the bacterium and some characteristic of its host. Therefore, although Sorgo and Suess,¹¹ in 1907, as a result of their experiments in cultivating the human tubercle bacillus in cold blooded animals, concluded that they had sufficient reason to believe that the modifications noted indicated a variation toward the type of the tubercle bacillus of cold blooded animals, there seems now, after a lapse of four or five years, considerable reason to doubt if this conclusion was justified. The indications that this was an instance in bacteria of a mutation in the meaning of the theory of De Vries, cannot be accepted as convincing to-day. Certain phenomena in cancer study, to which I have referred at length elsewhere, in which after many generations or passages from mouse to mouse, the transplanted carcinoma became a sarcoma, may occur to us as another instance of cell mutation, and to this view I was myself much inclined, but on the whole I am obliged to confess that the lapse of time has not furnished further proof of this view of malignant mutation. However, it may be remarked that this is merely a negative refutation, and that there has been quite as much lack of facts brought to light to disprove the possibility of cancer being regarded as a mutation. We may consider the question as one in abeyance.

MECHANISTIC CONCEPTION OF "SPONTANEOUS GENERATION."

Finally, I may conclude by a reference to some recent works on the fundamental conception of the nature of life itself. With this, if I had had any ambition to make this series of reviews logical or strictly sequential, I should have begun. For really, as a matter of fact, until the question of the beginnings of life has been settled, we can make little headway with its limitations. But it seemed best to begin with some reference to the vitalistic ideas of Driesch and Bergson, and then, having pointed out the correlations which the primal entities of living things have with physicochemical reactions, to use more materialistic conceptions as a conclusion to a very superficial discussion of a few of the aspects of heredity. It is probable that the lack of a proper definition of death and life has been the cause of more confusion in popular conceptions of fundamental biological principles than any other one influence. It is very difficult indeed for one who, like Jacques Loeb,¹² adheres to the mechanistic conception of life, to make his meaning clear when he enters the lists with those innumerable defeated expositors of the subject and attempts to give his own definition of life. He puts the matter thus:

Life was assumed to begin with the entrance of the life principle into the body; that individual life begins with the egg was of course unknown to primitive or prescientific man. Death was assumed to be the departure of this "life principle" from the body.

Scientifically, however, individual life begins (in the case of the sea urchin and possibly in general) with the acceleration of the rate of oxidation in the egg, and this accel-

¹⁰*Centralblatt für Bakteriologie* I Abt. Originale, lxi, 1 and 2, November, 1911.

¹¹*Ibidem*, xliii, 5 and 6.

¹²*Popular Science Monthly*, January, 1912.

eration begins after the destruction of its cortical layer. Life of warm blooded animals—man included—ends with the cessation of oxidation in the body. As soon as oxidations have ceased for some time the surface films of the cells, if they contain enough water, and if the temperature is sufficiently high, become permeable for bacteria, and the body is destroyed by microorganisms. The problem of the beginning and end of individual life is physicochemically clear. It is, therefore, unwarranted to continue the statement that in addition to the acceleration of oxidations the beginning of individual life is determined by the entrance of a metaphysical "life principle" into the egg; and that death is determined, aside from the cessation of oxidations, by the departure of this "principle" from the body.

It is very certain that this definition of life will be found as unsatisfactory to the comrades of Loeb in his "mechanistic conception of life," as the whole mechanistic scheme of life is to the neovitalist. Indeed, already, almost simultaneous with Loeb's article, there is a long and very interesting dissertation¹³ by Carl Snyder upon the view that the very beginnings of life were made in the absence of oxygen, and the hint is even made that if we are to discover a method of manufacturing life artificially, or to seek out the evidences of life beginning anew, we must do so under conditions in which oxygen is excluded from our fields of endeavor or our fields of observation.

Now, as a matter of fact, there will never be a sharply cut definition of life made, there will never be a definition of life invented by any scientist even, which will meet with the universal approval, or even the general toleration of his peers. This may be safely prophesied, because there is no such division. Just as there are no divisions actually existing between the various compartments into which man has forced what he regards as certain groups of animate and inanimate phenomena, so will it be found impossible to draw the line between the animate and the inanimate, for none exists. The arbitrary drawing of that line at once lays the observer open to the charge of vitalism. It is emphatically an anthropomorphic attempt to establish a line along what appear dimly as boundaries, but which in reality marks only the limitations of our knowledge and the broad domain of our ignorance. There is every reason to believe, that if we ever reach a more perfect state of positive knowledge, it will be found that what we regard upon one side of the arbitrary line as life, and upon the other side as the inanimate, are merged together indistinguishably.

Another method of approaching the discussion of this matter is illustrated in a French work. In the recent very excellent work by Jacques Duclaux¹⁴ he approaches the subject of the connection of the inanimate with the animate through the mineral diastases. According to him, these 'diastases of mineral elements are combinations which much raise the activity of the elements:

A living being appearing to us more perfect according as it has more functions adapted to its kind of life, it is evident that an absolute condition of this perfection is that it should contain functional diastases very active in proportion to their weight, in such fashion that these diastases and consequently their functions may exist in very great numbers. A combination in which the activity of the mineral elements is very great, is therefore from

this point of view a more perfect and more highly evolved combination than any other activity of less degree; and consequently, evolution should manifest itself by an adaptation more and more perfect of these diastases to their purpose, that is to say, by a chemical variation such that the potentiality of their mineral elements becomes greater and greater. This is in entire accord with the ideas which we can now form of the birth of the first cell. Its first diastases must have had tolerably simple mineral components, and their activity must have been extremely reduced on account of the feeble power which these mineral elements have in such crude forms. It is only as a consequence of a very long work of becoming constantly more perfect, that the real cell has occurred, through increasing the number of its functions, and in employing each one of them in combinations which have gradually become entirely specific.

Here, as elsewhere, in the theories of evolutionary fame, we find the philosophic biologist troubled by the demands of time, and there is just as much need for time felt by the theory builder in passing from the animate to the inanimate, as in passing from the fully developed, but primordial cell, to its highest development in the most complicated of living organisms. Duclaux confronts this difficulty as follows, and in doing so as a chemist, he has not the support of the modern biologist in the sudden saltations of De Vries and Blaringhem:

This work of perfection, being abandoned to chance, must necessarily be slow, and this slowness is discouraging enough if one thinks that in order to form artificial beings similar to those with which we are familiar, it would be necessary theoretically, keeping in view the attributes of the micelle, for them to pass through all the anterior states of being and have the process last as long as the time equal to that which has passed since the origin of life to this day, but, upon the other hand, the very fact that chance alone has been able to do this, is of a character to inspire us with confidence in awaiting the day when the question of spontaneous generation, for a moment set aside by the works of Pasteur, shall present itself again.

This question, in reality, has been by no means definitely answered. Pasteur has shown that there was practically no spontaneous generation (and I wish in no way to appear as detracting from the importance of this discovery, the greatest, without doubt, of the past century), but he in no way demonstrated that it was impossible. Under the conditions in which it was placed, it would certainly have been very extraordinary, according to our present ideas, if any being whatever could have been created. In reality, his method consisted in sterilizing a nutritive liquid, that is to say in freeing it from every living germ, and then abandoning it in that condition to itself, that is, to sum it all up, to leave almost entirely to chance the care of creating new germs. Moreover, he could not be aware of the formation of these germs unless they should have had the power of proliferation, for a single one would have passed unperceived in such a manner that it would have been necessary, not only that these germs should have been born, but that they should have had from the beginning all the attributes essential to natural organisms, including the most complex, those which depend at once upon the chemical nature of living tissue and upon their finest structure. It is true that Pasteur increased the chances of survival of the cells which might have been produced, by offering to them a medium proper for their development; but when one thinks upon all the conditions that must have been fulfilled in order that the experiment should succeed, one finds it absolutely unbelievable, that chance alone, even helped a little, should have been able to lead up to it in a small number of attempts of a duration very limited, inasmuch as Nature herself, in spite of all the resources of which she disposes, has been able to arrive there probably only after millions of years. The supposition that living beings could, at the first attempt, start into life with attributes so perfect, is, as a matter of fact, absurd and could only have been made at a time when the chemical attributes of organisms were much less understood than they are to day. When the question of

¹³Life without Oxygen, *Science Progress*, July, 1911

¹⁴La Chimie de la matière vivante, 1910.

spontaneous generation shall come up again for discussion, by aiding Nature, perhaps, we may be able to obtain a positive result. To trust to chance is to suppose that stones hurled up by a volcano, would, on falling back to earth be constructed into a cathedral with a city around it. Although this phenomenon may not be impossible, there are very few chances that it will ever occur, and if one wants to prepare oneself a dwelling, it is necessary to help Nature by directing her forces and by gathering together those collections which are necessary for its building. So, in order to form a cell, it will be necessary to gather together many collections, for which one would have to wait upon spontaneous generation too long.

In thus bringing this review to a close, I am happy to have had an opportunity to transcribe, from the work of one of Pasteur's countrymen, the sanest of criticisms on Pasteur's erroneous deductions from his own matchless observations. I am happy to have had the opportunity, because Pasteur's error in deduction has been echoed from every scientific platform in every civilized country for forty years, and no error is more glaring yet more easy to comprehend.

URETHRAL DRAINAGE IN THE TREATMENT OF CHRONIC URETHRITIS.

BY G. H. PERSSON, M. D.,
Mount Clemens, Mich.

In this paper it will be our aim to present the theoretical principles which have prompted the use of drainage in chronic urethritis. Some of the procedures incidental to our work upon this subject will be outlined, thereby giving a tangible conception of the grounds for our conclusions. A detailed report of cases treated and the results of this treatment will be given as soon as time permits.

Drainage is indicated in all conditions where there is an accumulation of pus. The use of drainage, in chronic infections of the urethra, has, so far as can be ascertained, received but little attention by our progressive urologists, a fact which is quite surprising, at least to those members of the profession who have had but comparatively little experience with this particular phase of medicine, and therefore look upon such condition from a standpoint of the general practitioner or surgeon. There is no doubt in the minds of medical men to-day, be they surgeons or physicians, as to the necessity of drainage wherever there is an accumulation of pus, and it has indeed become our first aim in such cases to provide for rapid exit of all purulent secretions, thereby preventing absorption of toxic substances. This is a modern and scientific practice which has been followed by most gratifying results to the extent that we would look upon a physician or surgeon with much disfavor, even to the degree of criminal negligence, if no efforts were made to establish proper drainage in localities of pus formation. The pathology in chronic urethritis is similar to that of infected fistulae and sinuses, in which condition drainage is used, save for the prevalence of the gonococcus in the former affection.

The urethral canal and Nature's efforts to remove infection from it. We have here a canal, the surface of which is wrinkled in many folds that lie closely in contact, serving as a harbor for shelter

of infection, and to the casual observer it is surprising that an infectious process, once commenced, can be eradicated at all. Nature, through a two-fold effort, seeks in a physiological manner to rid the urethral canal of pathogenic microorganisms, first by phagocytosis, in the ascending stage, and by desquamation in the stage of decline. Thus when Nature is successful, urethritis terminates in spontaneous recovery and it has therefore been classed as a self limiting disease. Viewing the efforts of Nature in restoring this pathological condition to a normal one, we are impressed by the method that is here employed, which points at all times to a rapid exit of contagion. This is strikingly illustrated in the stage of decline when the erosions undergo repair by being covered with squamous epithelium in many layers. The gonococci grow freely upon the surface of this epithelium, which in due time becomes detached, and when expelled carries with it colonies of the microorganisms that have here found a suitable medium for development. Such process of desquamation is Nature's effort to get rid of the infection, and suggests to us a condition which has, seemingly, been little regarded in the treatment of urethritis, namely, drainage. We have directed our efforts to devise a method by which a proper drainage, in form of some fibrous material, may be introduced into the urethra.

Method of introducing drainage into the urethral canal. It was discovered that to introduce drainage into the urethra was associated with no little difficulty, which becomes apparent if we take into consideration that it is desired to use drainage without any oil lubricant, which renders drainage nonabsorbent and therefore useless. In these cases we find frequently some irritation in the urethra, and the operation must be performed with the least possible discomfort to the patient. In view of these facts it became necessary to introduce the drainage by means of a special bougie, this being passed into the canal to the desired depth, then withdrawn, leaving the drain in position. The technique for a successful procedure had to be learned through experience, and this method will be fully described in the report of cases.

The therapeutic value of sterile drainage in the urethral canal. That we may picture to ourselves the actual changes that take place in the structures of the urethral canal when drainage is introduced, it will be of assistance to recall some of the pathology of this condition. A small, round celled infiltration of the submucous connective tissue is found in this disease, and is one of the most important characteristics upon which depends nearly all the other pathological changes that are here present. This infiltration becomes so marked that the circulation is disturbed to a degree that the erosions are prevented from healing. The bloodvessels of the submucous tissues send up newly formed capillary loops, which convert the floor of the erosion into a bed of granulations where microorganisms find a suitable place to grow, and which constitutes the source of a gleet discharge. By means of absorption this infiltration is removed, and the mucous membranes are again restored to normal; if, however, such absorption does not take place the infiltration becomes transformed into fibrous connective

rive tissue which constitutes stricture. It has been observed that during the course of urethritis the gonococcus finds its way into Morgagni's crypts and Littre's glands, and here sets up an inflammation of these cavities which is accompanied by a small celled perigranular infiltration, causing rigidity of the tissues surrounding the ducts and walls of the glands, thus preventing their orifices from being closed. This affords an open gateway for the escape of infection and is the source responsible for a so called relapse. The indication for treatment of such conditions are: First, to promote absorption of the infiltration and restore the elasticity of the urethral walls; second, to destroy the gonococci that are present in the substance of the infiltration and in the urethral glands.

Absorption of the infiltration is promoted by drainage in the urethral canal, owing to the fact that its presence causes stimulation of the mucous membranes, which is followed by increased vascularization of the parts involved. The modern method of using sounds in the urethra in the treatment of this condition is promoted by the same principle. A sound large enough to distend the urethra stretches the infiltrated tissue and causes small tears in its substance beneath the mucous membranes. A traumatic inflammation, with increased vascularization, results from these tears, and absorption is stimulated. This brings us to a point where it becomes apparent that the desired absorption may be produced to much better advantage by the use of proper stimulating drainage, than with an instrument such as a sound. Drainage causes a mild and continued stimulation without any danger of injury to the walls of the canal; it affords a material for the microorganisms and inflammatory products to adhere to, and to be removed from the urethra before there is any opportunity to form new foci of infection. With drainage may be combined suitable antiseptics and astringents that are indicated in the treatment of this disease and by the action of which the second indication, the destruction of pathogenic organisms, is accomplished.

Urethral drainage as a diagnostic means. It may here be mentioned that by the use of sterile drainage in the urethra it was possible in many cases to determine the location of the infection by smear stains from the drain after it had been removed. In several patients who were apparently cured of gonorrhea, sterile drainage was used as a diagnostic means to determine the presence of the gonococcus, and in this manner it was possible to find the looked for microorganisms after the usual method of massage of the prostate, stripping of the urethra, and microscopic examination of the urine had failed.

Antiseptic drainage in the treatment of chronic urethritis. In order to meet the second indication in the treatment of this condition, namely, to destroy the offending organisms that are present, our efforts were directed to the preparation of antiseptic drainage by the aid of which the germicidal agent might be brought directly in contact with these organisms and cause their destruction. With such aim in view several of the well known antiseptics were used in various strength. This practice was followed by gratifying results in some

cases where plain drainage had failed, and in several cases where our lactic ferment could not become acclimatized in the urethra. The therapeutic effects of different antiseptics used in the treatment of a specific condition in the urethral canal are fairly well understood and have been observed by all medical men. It is needless to say that the action of any particular antiseptic is not altered when applied by means of absorbent drainage. We speak of an astringent or a plain antiseptic, and from such terms are conceived the respective changes that take place as a result of applying these agents. The microscopic findings in a smear stain from drainage cords made germicidal by various antiseptic agents, proved a very instructive part of this work, and it was a matter of no little pleasure actually to see under the microscope characteristic pictures of the results from an astringent or antiseptic application in the urethral canal.

The therapeutic value of antiseptic drainage in the urethra. The primary object of using antiseptic drainage in this condition is obviously to destroy the offending organisms which are here present. To a casual observer it would seem that such treatment should at least be very near an ideal therapeutic measure. This opinion is supported by several facts of which may be mentioned: First, that we have succeeded in putting our treatment of urethritis on a surgical basis by using a surgical dressing in form of germicidal gauze in the urethral canal; second, antiseptic gauze as a dressing of wounds is to-day invariably used and attended with success. Similar results may be anticipated from the application of antiseptic absorbent drainage in the urethral canal as a treatment for inflamed and suppurating lesions of its surface and underlying tissues. It is not the desire here to enter into discussion of the therapeutic action of chemical antiseptics, a point we hope to speak of in a later article on Gauze Impregnated with Lactic Ferment as a Surgical Dressing, a paper which is now under preparation—but, it becomes at this time necessary to call attention to a fact which has long been recognized, viz., that chemical antiseptics brought in contact with microorganisms in an infected wound or surface will directly antagonize the protective forces which the living organism has at command. It will paralyze phagocytosis and abolish the antibacterial power of the blood fluids. It is well known that an antiseptic application has injurious effects upon the histological elements of the parts exposed, in which the capillaries are often destroyed, resulting in the pouring out of lymph from the disinfected surface which removes mechanically the antiseptic. It is axiomatic that antiseptics have effects only upon those bacteria with which they are brought into direct contact, and it therefore follows that sterilization by the use of chemical antiseptics cannot be complete. One of the results of applying these germicidal agents is a bacterial residue in the wound, and these surviving organisms find favorable media to grow upon, a surface of devitalized tissues from which all traces of antiseptics have been removed by exudations of lymph. Such conditions may, in a manner at least, account for the frequent failure of antiseptic solution injected into the urethra to cure chronic urethritis

and in the application of our antiseptic drainage these facts were taken into consideration.

Lactic ferment in chronic urethritis. Some time ago we had occasion to use lactic ferment in the treatment of chronic urethritis, and rather pleasing results were at that time observed. These results, however, were very inconstant, which we learned was due to faulty technique, and it was decided to extend our investigation with a hope of discovering the source of failure. Our previous work was reported in the *Medical Record* for September 24, 1910. The method of treatment used at that time consisted in urethral injections of a suspension of lactic acid organisms, and in some instances it was possible to acclimate these bacteria in this locality. In such instances gratifying results were obtained, but in many cases we failed, and naturally in these patients there was no improvement. A primary reason for using lactic ferment in this condition may be summed up in the well known property of this group of bacteria to counteract fermentation and inhibit the growth of pus producing organisms. This fact is clearly demonstrated by the behavior of lactic ferment in the alimentary canal, where it is now being used to prevent intestinal putrefaction, serving as a prophylactic against autointoxication. On these grounds it is entirely logical to assume, that if a lactic ferment inhibits the growth of microorganisms in the intestines, the same influence will be exerted on the bacteria in the urethral canal, providing the lactic acid germs can be acclimatized to this locality.

Let me digress here from the consideration of the actual treatment of this condition and elucidate in a brief manner the logical route by which we arrived at the conclusion that prompted the use of an absorbent gauze impregnated with lactic ferment as a surgical dressing of suppurating wounds, and as absorbent drainage in the treatment of chronic urethritis. The conditions which obtain in the foci of bacterial infection such, for example, as chronic urethritis, is primarily that of lowered bacteriotropic pressure. The deficit of antibacterial substances in such foci may be explained, first, by the fact that whenever the blood fluids come in contact with bacteria, bacteriotropic substances are absorbed; second, the perigranular round cell infiltration, which is found in the submucous tissues of the walls of the urethral canal in chronic urethritis alters the blood supply of the parts involved to such a degree that the conveyance of bacteriotropic substances to the focus of infection by the lymph stream is not sufficient to compensate for the absorption of this antibacterial substance; third, it has been shown by Opie that liberation of tryptic ferment takes place from the leucocytes whenever these formed elements disintegrate in pus, and it may be here fittingly suggested that this factor would explain the paralysis of all phagocytic efforts which sooner or later overtakes the leucocytes in every focus of suppuration and causes this condition to become one of chronic urethritis.

The therapeutic principles which emerge from consideration of this condition in a bacterial focus of the urethral canal, provide for the conveyance of bacteriotropic substances into the focus of this infection, and our first efforts must be directed to the

establishment of increased blood supply to the parts. This may successfully be accomplished by a proper use of absorbent drainage in the canal which in itself is sufficient to provide the stimulation necessary to bring about this phenomenon. Absorbent gauze drainage, however, produces stimulating effects only as long as it remains absorbent. When saturated with pus and other products of inflammation, it becomes, properly speaking, a carrier of infection, which will be realized, if it is taken into consideration, that upon the surface of such drainage is found large quantities of pus cells from which, as it has been mentioned above, issues a ferment that is devitalizing to normal cells and fluids with which it comes in contact, and the microorganisms which are also present in the drainage find readily a prepared medium to grow on. Such condition has led to the practice of using a sufficient quantity of gauze to prevent saturation in dressing a suppurating wound. The quantity of an absorbent material which can conveniently be introduced into the urethral canal is, obviously, limited, and it becomes saturated in a short time. It is therefore found necessary to use different means in producing the proper stimulation for a desired length of time. To accomplish this the absorbent material or gauze was impregnated with lactic ferment.

What first prompted the use of lactic ferment for this purpose? The use of lactic ferment in intestinal therapeutics has demonstrated that it inhibits the growth of many organisms of putrefaction in the alimentary canal. The action of the same ferment in some pathological condition of the nose and throat, such as inflammation of the frontal sinuses, disease of the ethmoidal cells, disease of the antrum, otitis media, etc., has given pleasing results in many instances. These are clinical facts demonstrated by experience which would suggest to us that the properties of lactic ferment which inhibit the growth of putrefactive and pus forming organisms in many localities of the body, and under widely different conditions, cannot be attributed entirely to the effect of the lactic acid which these bacteria produce. As an illustration, it is only necessary to mention that if lactic acid is given by mouth in the same quantities as there is produced by lactic ferments in the alimentary canal when they are administered in form of living cultures, the bactericidal influence on the intestinal flora will not be the same. It may further be stated that if lactic acid is used in any of the surgical conditions mentioned, in the same quantity and concentration as would be represented in a living culture of the ferment, no clinical result is to be expected. This brings us to a point where we must look for some other bacterial product, by virtue of which these physiological effects are brought about. Lactic acid ferment has received a firm place in intestinal therapeutics, and I think it is safely within the limits of conservatism to predict a much larger field of usefulness for these interesting organisms in the domains of surgery. I will not attempt in this paper to go into details regarding the work that has been done with the aim of discovering the bacterial product of lactic acid organism, the action of which would explain the therapeutic value of these ferments. It may be suggested, however, that lactic ferments pro-

duce, beside lactic acid, other substances, some of which have the power of coagulating milk. This has been demonstrated by the fact that when calcium carbonate or calcium chloride is added in excess of the amount required to neutralize the acid formed, coagulation of milk occurs, and the time required for such coagulation varies greatly with the strain of ferments that is used. We may also here fittingly call attention to a phenomenon that has been observed during this work, viz., that the media in which lactic ferments can be cultivated may be so altered as to increase or decrease its bactericidal powers. It is with reluctance I turn back from this particular field of our labors; first, because it has become very interesting; and, second, for the reason that I have given but a fragmentary and incoherent review of few of the most essential points. However, space does not permit, and we will now consider the type of lactic ferment that was here used.

The name lactic ferment is applied to any ferment capable of transforming sugar into lactic acid. But little attention has been paid to the nature of the organism by the activity of which it was brought about, or to the substance at the expense of which the organisms thrive. Innumerable microorganisms, some pathogenic, are capable of generating lactic acid, and it becomes necessary to make a more definite explanation of the particular type that was used in this work; also the reason why it was selected. First, it is desirable to have a true lactic ferment, by which is understood one that is capable of cleaving the molecule of sugar into as many molecules of lactic acid as are necessary for its weight to equal that of the sugar from which it is issued. A hexose, for example, gives $C_6H_{12}O_6 = 2 C_3H_5O_3$. Of course, this theoretical species does not exist, but there are many ferments which content themselves with a very small quantity of sugar, while they at the same time almost entirely convert it into lactic acid in conformity with the preceding equation. To such the term of true lactic ferment has been reserved. Second, an organism that could become acclimatized in the urethra was necessary. Third, the ability of the organism to multiply had also to be taken into consideration, and it was found that one which would multiply rapidly was preferable. Fourth, the influence of desiccation was one of the most important factors to be dealt with, which becomes apparent from the fact that immediately after the impregnation the drainage cords are dried, in which condition the lactic acid organism becomes dormant until used. Many species of these ferments remain viable for an indefinite period in a dry state, but when such cultures are placed in a condition of active life their activity and power of multiplying is less than before the imposed latent period in the desiccated state, and it was desired to have the most active culture possible in the foregoing condition for therapeutic application. The organism selected to fill these requirements is a bacterium, which was originally isolated from Bulgarian soured milk.

Sugars and peptones in the preparation of drainage. In our definition of a lactic ferment it was stated that sugar was transformed into lactic acid. From this we have correctly drawn the conclusion

that sugar is necessary for the production of lactic acid by this ferment. In the alimentary canal the presence of sugar is abundant and provides a suitable medium for the ingested bacteria to produce lactic acid, and it is, therefore, not necessary to add this substance in the use of lactic ferment in intestinal therapeutics. The condition in the urethra is different. No sugars or peptones are normally found in this locality, and it became a part of our duties to supply this substance, the presence of which, as we have seen before, makes it possible for the desiccated bacteria to grow. During the early part of our work in the preparation of the drainage material, sugars and peptones were added in the desired form and amount to the suspension of lactic ferment in which the cords were impregnated. The desiccation of the cords causes precipitation of the sugars on the fibres, and when the drain is introduced into the urethra, the moisture dissolves the sugars surrounding the dormant lactic acid organisms, thus forming a favorable medium for their activity.

At this stage in our investigation we were prepared, at least from a theoretical standpoint, to anticipate clinical results of a gratifying nature from the method of treatment just outlined. In a number of cases which were treated in this manner Neisser's organisms disappeared and the parts involved returned to a normal condition, at least as far as could be ascertained by a microscopical examination of secretions from the urethra. Our efforts were, therefore, not all in vain. A much larger percentage of improvement or cures had, however, been expected, and we were at a loss to account for the inconstant results. The hypothesis that a proper lactic ferment made to become acclimatized in the urethral canal would destroy the infection which was there present when a patient suffers from chronic urethritis had, in our opinion, become a therapeutic fact, which was based upon results obtained in this work. As a rather large amount of work had been done, we felt that our technique was all that could be desired to bring about constant result, yet, many patients showed little or no improvement. The reason for this was looked for from numerous sources without success.

"When a pathogenic microorganism gains entrance into the human body and there finds a suitable medium to grow, etc." I regret that the scope of this paper will not permit me to go into details regarding that part of our work which recalls to us this old and well known phrase in bacteriology. There was no doubt in our minds that the microorganisms gained entrance, because they were not only introduced but actually retained in the desired position, and the sugars and peptone which were added to the bacterial suspension with which the cords were impregnated, are substances that provide a good medium for these germs to grow in. It was discovered during the course of our investigation, that when much irritation is present in the urethra little or no improvement takes place. This led us to believe that the secretions from an irritated urethral mucous membrane inhibited the growth of lactic acid germs. It was, therefore, found necessary to provide a medium that would in some measure relieve any irritation that was present. To ac-

comply this, a sterile preparation, the principal constituents of which are gelatin and whey, was introduced into the urethral canal where it acted as a sedative. It may also be stated that this substance serves as a lubricant and constitutes a medium in which the desiccated lactic acid germs form an excellent growth.

Planting a lactic acid culture in a suitable medium in the urethral canal. After the urethral mucous membrane has been coated with this nutritive substance, the drainage cord, impregnated with lactic ferment, is introduced and we plant, as it were, a bacterial culture of lactic acid germs in the urethral canal in the presence of a favorable medium for its development. The time required for these organisms to grow in this medium, has been found to be from eighteen to forty hours at incubator temperature. In view of the fact that the drainage cords are kept in the canal only from three to eight hours according to circumstances, it may be argued that not sufficient time is allotted these cultures to develop, and if the desired therapeutic effect depends upon the activity of the ferments in this locality, very little, if indeed any result at all, could be expected from such application. This objection is well founded, but also readily removed if we take into consideration that bacteria with which the drain cords are impregnated are rapidly distributed throughout the lubricant or nutritive medium and this substance finds its way into the numerous folds of the walls in the canal, where it may remain undisturbed for many hours. A daily implantation of impregnated drainage cords will add new culture media and new ferment, with the result that all available places of shelter, where the organisms may cultivate themselves, are soon occupied. We may here picture to ourselves, without optimism, an army of microbes under the perfect control of a capable general—the physician, stationed according to his order in the field of battle. This army is composed of bactericidal bacteria which are effective in the destruction of the enemy. The natural hiding places of the offending organism are invaded, and here a struggle to death takes place. Daily reinforcements to the belligerent, in form of new culture media and fresh ferments, are supplied, and, as this bacterial war progresses, the dead and disabled are removed by route of the drainage cord, leaving an unrestricted field for the activity of the opposing forces.

What changes take place while this bacterial war goes on? It has been stated above that microscopical examination of the drains after the removal by means of smear stain, furnishes some very valuable data of the changes that take place in the urethra as a result of various applications. In answer to the question, what changes take place while this bacterial war goes on, our observation prompts us to say, that first of all a pronounced stimulation is a very constant phenomenon. What causes this stimulation is a problem of vast interest, which has occupied much of our time. It is a safe conclusion that chemical "lactic acid" which these organisms produce does not bring about such changes. What then, we may ask, causes this phenomenon? Space will not permit here to go into detail, but we wish to call attention to the natural processes of growth and

development of lactic acid organisms, and the reader may draw his own conclusions. The most interesting period of the life history of lactic acid bacteria are the closing scenes which terminate under ordinary condition in "natural death," this being caused by autointoxication due to a product of the physiological activity of the microbe itself. Laboratory experiments have demonstrated that the period of activity of these germs depends principally upon the media in which they are cultivated. It is safe to presume that here may be applied the same law which governs the death of higher plants from intracellular poisons formed at the time the seeds ripen.

Natural death can be postponed if the plant is prevented from seeding. This has been observed by us all in many instances and I may, as an example, call your attention to the grass of lawns which is usually mowed before it begins to flower so as to prevent the ripening of the seed and the death of the plant. When this is done the grass remains green and its life lasts for several years. Our daily comforts and pleasures may thus be increased and extended by exercising the proper precaution to prevent the seeds in many flowering plants from ripening, and in a similar manner can lactic acid bacteria be made to serve us as a therapeutic agent in medicine and surgery by preventing its natural death by its own physiological activity. Beside lactic acid, a bacterial product is produced during the life period of these organisms, which has the power of exciting great activity of cells with which it comes in contact, and a whole array of observation points to the local production of bacteriotropic substances when the proper lactic ferment is applied under favorable conditions to an inflamed surface.

CONCLUSIONS.

1. Suitable drainage in the urethral canal is indicated in the treatment of urethritis, because it provides for rapid elimination of pathogenic bacteria and their products.
2. Sterile drainage is of great value as a diagnostic means to determine the presence of gonococci in doubtful cases.
3. Antiseptic drainage serves the same purpose in the urethral canal as applications of gauze in surgical treatment of wounds.
4. Drainage material used in the urethra must be absorbent in character, without which property it is useless.
5. Lactic ferments are indicated in the treatment of chronic urethritis, because these bacteria when properly used have germicidal effects on the offending organism in the urethra.
6. Certain lactic ferments produce under favorable conditions bacterial products which increase the activity of cells with which they are brought in contact, thus promoting the absorption in this instance of the perigranular infiltration that is the characteristic pathological factor in chronic urethritis.
7. The requirements necessary for success are, first, a proper method of application by which drainage may be introduced without discomfort to the patient, and, second, the use of an emollient substance which acts as a lubricant without making the drain nonabsorbent and in which the desiccated

ferment finds a favorable medium for development.

8. This medium must be prepared with the aim in view of preventing the natural death of the ferment by neutralizing the excess of lactic acid when this reaches a point where it acts destructively to the organisms which produce it.

9. This medium must also contain elements in the presence of which the lactic acid organism produces a large amount of enzymes, or that bacterial product which causes increased local cellular activity and induces formation of bacteriotropic substances.

10. These requirements are not difficult to fulfill, and we are rewarded for our labors with much gratifying results in an unexpected percentage of cases.

THE BORDERLINE CASE; A VITAL PROBLEM.*

By MARY SUTTON MACY, M. D.,
New York.

It is a very common custom, unfortunately current even among scientific people, to use terms and designations loosely, and consequently to create a situation which frequently becomes highly complicated. Such has been the experience with the terms backward, atypical, mentally deficient, and feeble minded, applied to children, and such threatens to be the situation with the term borderline case.

The question is settled beyond dispute in the minds of all who handle or have handled imbecile and idiotic children, or even that class more recently designated *morons*,¹ that the proper place, and the only proper place for them is in an institution or colony where they may be segregated to such extent that they cease to be a menace to the community and to themselves, where they may be graded according to their degree of mentality, and receive such education and care as they are capable of receiving and utilizing for their own advancement and support among their peers.

It has been my privilege to investigate the problems of feeble-mindedness, amentia, or mental deficiency, quite thoroughly and at various times in this country and in Europe, and nowhere have I encountered any one concerned with, or interested in the unfortunates who is unwilling to concede this point. On the contrary, all are anxious to bring about a realization of such an ideal, but—

Everywhere the problem is the same; those who know the situation agree unanimously on what should be done, but so far it has not been possible to present facts, or—more truly—to present such facts in a sufficiently graphic manner as to convince legislators and the public of the wisdom of the expert's advice. Therefore we have this situation facing us: 1. A difficult problem; 2, expert knowledge to facilitate its solution; 3, inadequate means and inadequate public intelligence to accomplish the ideal; 4, adequate means and adequate public intelligence partially to mitigate some evils of the situ-

ation; and, 5, a wealth of enthusiasm and intelligence among the expert workers, which should be sufficient to "move mountains."

It has struck me recently—almost with the force of a blow between the eyes—that a tremendous amount of the enthusiasm and energy of these workers is being ruthlessly wasted. Two camps appear to contend, where in fact but one does exist, because a few of the practical—shall I say the humdrum?—workers believe in using all the available facilities for amelioration, while working, hoping, urging, and struggling for more and better means and methods of solution, and a number of the idealists, the enthusiasts, believe in continuous and exhausting struggle to get what they know to be the best solution, and, in this process, not infrequently overlook the ever present situation, and the need for its amelioration pending final solution.

For some years past a host of workers have cried out against the feeble-minded in the schools, and have raved—I use the word advisedly—against those who insist upon maintaining the classes, be they called *ungraded*, or what not, in the public schools, and who insist upon keeping in those classes certain confessedly institution cases. Recently I have heard the absurd argument used, that so long as these classes are maintained as a refuge we cannot get the children—imbecile, idiot, or moron—into an institution. To that let us state frankly, we cannot get those children into institutions for one or all of the following four reasons:

1. The existing institutions are overcrowded or not yet adequately equipped to receive their full quota of cases, and the problem is before us in the immediate present, demanding mitigation at least.

2. Such institutions as do exist are not so conducted as to make all parents willing to place or to leave their children in them.

3. No law exists by which the authorities can compel parents to place a child in an institution against their wishes, and any such law would be difficult, if not impossible, to obtain, as well and unjust.

4. When proper legislative appropriations are granted, it usually takes years to get suitable buildings and equipment; witness Letchworth village, established by legislative enactments in 1907, 1908, and 1909, to accommodate 2,600 patients, and which is at present able to house and care for only 103 individuals, while all the other institutions in our State are overcrowded and maintain waiting lists of frightful length.

Those who protest against the feeble minded in the public schools proclaim that the children are only five hours in the school and many hours without supervision on the streets or worse. Granted! These enthusiasts maintain that the feeble minded require twenty-four hours' supervision in twenty-four. Granted again! But during the time we are laboring to obtain such an ideal, must it not likewise be granted that five hours' supervision is better than none? The school authorities have no wish, desire, or intention of retaining the truly feeble minded child any longer than necessity compels, which is only until proper accommodation is provided elsewhere. Here in New York city it has been recently said that the educational authorities

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¹Greek, *moros*, dull, sluggish.

cannot compel mentally deficient children to attend school.

The education laws in Section 621 as amended by chapter 710 of the laws of 1911 state: "Every child within the compulsory school ages in proper physical and mental condition to attend school, residing in a city or school district having a population of five thousand or more, and employing a superintendent of schools, shall regularly attend upon instruction," and Chapter 140 of the laws of 1910, Section 567, states: "A person over five and under twenty-one years of age is entitled to attend the public schools maintained in the district or city in which such person resides without payment of tuition." In quoting these passages allow me to call attention to the following, which was pointed out to me by a most able lawyer: If the question at issue is whether a child can be excluded from the school, it is important to note that there is no exception made in provision 567 arising out of the child's physical and mental condition, and, as Section 94 of Education Laws gives the Commissioner of Education supervision over *all* schools and guidance in the management thereof, it may be that he alone or his appointees have power to decide whether a child is "in proper physical and mental condition to attend school" as stated in Section 621 relative to attendance required and enforceable.

Whatever might be the final interpretation of these fine points of law by the courts, there appears to be no doubt on the question about the compulsory attendance law as applied to the so called borderline case, or backward child, and it is of that class which I wish to speak.

I have in mind some 125 cases which have come to my attention, in all of which, in the original series of examinations, appeared more or less definite signs of mental deficiency, including from two to four years' retardation according to the Binet-Simon tests, and also in every case a number of physical inefficiencies or deficiencies. These children, after careful study and consultation of experts, were all classed as feeble minded and recommended for special pedagogical treatment, as well as medical and hygienic care. Among the physical defects found may be mentioned the following:

Organic heart lesions appeared in.....	32 per cent.
Functional heart defects appeared in.....	3 per cent. more
Eye defects, either diseases, or functional inefficiencies in.....	02 per cent.
Nutritional disturbances accompanied by bad teeth in.....	75 per cent.
Epilepsy, chorea, and other neuroses in.....	44 per cent.
Adenoids or defective nasal breathing, and enlarged tonsils in.....	68 per cent.
Deafness—partial or complete—or ear diseases in.....	50 per cent.
Tuberculosis pulmonary or glandular—in.....	12 per cent.

Without exception these 125 patients, following upon proper medical and hygienic treatment, and having the advantage of intelligent and specialized pedagogical care during the space of from two to four years, have so far recovered from their "feeble-mindedness" that they have been able to resume and maintain their place in classes of children of their own age. For about thirty-two per cent. medical care is still necessary; about thirty per cent. more are still handicapped by their sensory inefficiency, but not sufficiently so for any one to-day to class them as feeble minded.

The points I should like to emphasize here are:

1. Originally and despite close observation and

study, these cases were diagnosed as feeble minded by medical, pedagogical, and psychological experts alike; 2. to-day such a diagnosis would not be made; 3. school—not institution—and medical and hygienic care have accomplished the transformation.

Critics protest against ungraded or special classes in the public schools for feeble minded and backward children together, on the ground that the children in such classes, and the classes themselves become branded as "dippy," "crazy," "fool," or "defective," and that these names attach a stigma to the children from which many will suffer unjustly in later life, and that therefore these classes should not exist in the public schools, but all feeble minded children should go at once to an institution.

I protest! If these classes become so stigmatized it is the tactlessness or lack of humanity on the part of the principal or superintendent or teacher, or all three. The few true cases of mental deficiency which get into and remain in these classes have no right nor title to stigmatize the rest of the children, if the local authorities are intelligent and efficient. But the harm which could and would be done to the many—of whom I consider the 125 patients I have cited are only a few examples—by placing at once in institutions for mental deficient all children diagnosed as feeble minded, would be incalculable.

The borderline case not only justifies the public school classes for backward and deficient children, but forms an insurmountable obstacle to their removal, since it is the only place where a fair and reasonable period of observation can be obtained, before a definite diagnosis can be made with full justice to the child and to the community.

101 WEST EIGHTIETH STREET.

THE INDUCTION OF ANESTHESIA.

By L. D. FRESCOLN, A. B., M. D.,
Philadelphia.

Chief Resident Physician, Episcopal Hospital.

Since the days when already suffering humanity had to endure greater suffering through surgical interference without anesthesia in order to reach recovery, and later when the carbolic spray, ice, ice bags (used by Matas), pressure, and other attempts were used to induce some anesthesia, a long line of investigators have helped to perfect systems trying to reach ideal anesthesia. A study of the various substances used and the apparatus employed will show that whatever the method, the personal equation, both on the part of the anesthetizer and the anesthetized, plays an important rôle.

To reach the greatest success in anesthetization we must give the patient the best chance of recovery as far as the anesthetist has to do with it, and also render the least discomfort. There are always some risks attending the artificial rendering of a person unconscious by these means; this is seen likewise in hypnotism, and this is true whether we are dealing with a well person or one who is sick, more so, as a rule, with one sick or having some deformity or other abnormality. It behooves us, therefore, to

study the case, to examine the person physically and mentally; to go over the history of the case, examine the heart, bloodvessels, lungs, eyes, kidneys, etc., and then choose what anesthetic it is best to give. We might go back a step even before this procedure and examine ourselves to try to determine whether or not we are qualified to give the anesthetic as it should be given.

Of late years it has seemed wise to train one specially in the administration of anesthetics with the hope that this person, generally a graduate nurse, giving anesthetics constantly, will become expert. It seems to me that, while it may be true that such experience renders one more expert in the practical administration than a recent graduate from a medical school of our land, yet such a person has not the four years' training in medical subjects, particularly physiology and anatomy, that should be the groundwork of an anesthetist. Here is the fallacy that creeps in: An attempt to seek something better instead of the best. Let the hospital interne busy himself with becoming proficient in this line of work while he has a chance, and let the specialist in anesthetic administration be a doctor who shall work up this important branch; in this way we shall not clash with the law. It has been pointed out abroad that, strictly speaking, giving of anesthetics by nurses is not permitted by the English law.

Now, granting that the anesthetist is in proper standing to give the anesthetic, after examination of the case and after finding no diseased conditions present, we proceed carefully to give the drug; but what if there is disease present making it dangerous to give an anesthetic? Then the gravity and necessity of the operation must be decided upon by the operator. Granting that the operation must be done, the choice of anesthetic (if any is given) next comes up, and by what method it is to be given. It will be found that some sort of anesthetic is to be given practically always, except in comatose patients or those who have disease affecting their sensory systems, and even then it may be deemed expedient if it can be considered to reduce shock. Blocking of the large nerve trunks, as Crile has pointed out, may do much to reduce shock of the operation.

If a patient has respiratory obstruction or tuberculosis of the respiratory tract, we are justified ordinarily in choosing chloroform. We have seen tuberculosis apparently lit up by ether. Patients with fistula in ano are often tuberculous, and it is wise as a rule to use some nitrous oxide or chloroform in these cases. A thing to be remembered in using chloroform for anal cases is, that during dilatation of the sphincter ani, the reflex respiratory stimulation causes a sudden inhalation of considerable chloroform and an overdose may result unless the mask is withdrawn. We choose ether, a heart stimulant, rather than chloroform, somewhat of a heart depressant, when anesthetizing patients with disease of the heart. We do not allow patients, of this sort especially, to struggle while only partially anesthetized and go into shock. We do not use nitrous oxide in alcoholics and arteriosclerotics. We endeavor not to use a general anesthetic in diabetics. In operations on the chest or about the

upper respiratory tract we may practise tracheal insufflation as described by Meltzer and Auerbach in the *Journal of Experimental Physiology* and the *Journal of Surgery, Obstetrics, and Gynecology* for August, 1911, and also in a recent number of the *Journal of the American Medical Association*.

In simple nephritis we are likely to use chloroform or nitrous oxide, as less irritating to the kidneys. This drug, particularly in these cases, must be given evenly, drop by drop, and mingled with air. Where we hesitate to use a general anesthetic on account of the patient's general bad condition, we occasionally use stovaine (Billon, Jonnesco, etc.), pure, of proper dose, and given correctly, for certain operations on the lower portion of the body. Or probably we would induce scopolamine-morphine anesthesia (one seventy-fifth of a grain of the former and one sixth of a grain of the latter hypodermically, repeated in an hour, and possibly again); hyoscine may be given to relax the muscles; cotton is stuffed in the patient's ears and quietness is observed. Or we might use one of the forms of local anesthesia, or nitrous oxide. Spiller and Leopold have shown degeneration of the anterior roots from stovaine. Evidence of damage from the clinical standpoint has been brought out by me in a previous article. When it is given, the patient's blood pressure should be considered; about 0.0004 gramme is given for each mm. rise in blood pressure. There is the danger, it may be noted, of embolic pneumonia following spinal anesthesia; hemorrhage and asphyxia are said to have followed the use of scopolamine. Ethyl chloride is used locally to freeze a part, and also as a general anesthetic for short operations, when it is sprayed on gauze held over the face; it is not considered, however, very safe as a general anesthetic. Somnoform is a mixture of it and ethyl bromide, used especially in dental work.

Before considering just how we endeavor to give the anesthetic safely, let us familiarize ourselves with the substances themselves that are used and take our view from the historical standpoint. Since the early disappointment over the use of nitrous oxide as an anesthetic, when a patient had a tooth extracted under it and afterward committed suicide, nitrous oxide gas gradually came more and more into favor, more particularly since 1888. Nitrous oxide was discovered, in 1772, by Priestly. It is a colorless and odorless gas produced by heating ammonium nitrate. With the Teter apparatus or the McKisson monovalve we can now give it for prolonged anesthesia with safety. Giving less than ten per cent. oxygen (say about four per cent.) with it, we get unconsciousness in about two minutes, and in less time if the gas is under greater pressure. Fifteen per cent. of oxygen may be used with the nitrous oxide under two atmospheres' pressure; with five pounds' pressure Doederlein produced partial anesthesia during deliveries.

Since the employment of sulphuric ether as a general anesthetic by Long, in 1842, and Morton, in 1846, there have been a great variety of inhalers devised, but most operators adhere to the simplest method, giving the drug by the drop method on gauze from the original container; a couple of fine holes, in which may be placed gauze wicks or a

safety pin, or nothing at all, readily permit the ether to fall from the tin warmed by the hand holding it. In tonsil, adenoid, and other throat operations a bent tube may be used in the corner of the mouth, through which the vapor is forced by a bulb, the ether jar being surrounded by rather hot water. The Allis is a convenient inhaler, and the gauze in it can be readily changed.

So also since Simpson, of Edinburgh, first gave chloroform for anesthetic purposes, a number of masks have been devised so as to permit an uncertain quantity of air being inhaled. There is a device in use which regulates the number of drops in a minute and affords a more accurate method. The following has been recommended to disguise the odor of ether, prevent excitement, lead to the use of less ether (two ounces for each patient), and to prevent vomiting: One ounce of essential oil of orange (ten times the penetration of ether odor), three ounces of water in the hot bottle of the three in an apparatus. Oil of bergamot may be used as a preliminary.¹

Ether deteriorates in the air and we have acetic acid, etc., formed; chloroform in the light more readily deteriorates and becomes hydrochloric acid, and chlorine which is very dangerous to inhale. Ether is kept in sealed cans to prevent evaporation, and chloroform in dark colored bottles to prevent deterioration. Ether and chloroform are both volatile and the former is inflammable, while the latter is a decided local irritant to the skin; the face should be anointed with petrolatum before chloroform is taken and the hands of the anesthetist protected.

Some of the historical matter in the following paragraph concerning local anesthesia may be found more fully in a preceding JOURNAL article.

Cocaine, since its introduction in the year 1884 in Vienna, as a local anesthetic, has gained wide popularity. Halstead, in the same year, and Corning, in the next year, adding elastic pressure, Barker adding adrenalin, Reclus, in 1886, Bodine, Mitchell, and others have given it wide usage. Watson, in 1910, pointed out the dangers of the usage of strong solutions; the best antidote, says Legrand, is amyl nitrite; it is well always to have on hand a hypodermic of a good dose of nitroglycerin, some say, when using the drug, but it has been shown lately that this is not quick enough in its action to do much good. Up to two grains have been given; the patient with this much is likely to become pale and suddenly break out in a sweat. With a two per cent. solution anesthesia takes place almost immediately if the solution is properly injected into the layers of the skin. Schleich, in 1888, used a very dilute watery solution, Elsberg added adrenalin; Brauer, Lennander, and Bier used novococain, which is more fleeting in action, and this was also used with adrenalin; the mixture may be boiled. Pouchet used eucain, less toxic and also capable of being boiled, but liable to sudden absorption. Cocaine may be sterilized up to 212° F.; exposed to the air it becomes useless in three weeks. A band is sometimes used above the seat of injection to prevent too much absorption, but this should not be too tight, as pointed out by Hors-

ley, lest nerves be injured. Thibault used quinine and urea, the effect lasting longer than when cocaine is used; this drug, however, has been known to cause local gangrene; it may be boiled. Cocaine and tropococain (0.06 gm.) have been used intraspinaly, but with greater mortality than is found from the use of general anesthetics.

Nitrous oxide, as noted above, is obtained from the distillation of ammonium nitrate; this gives the oxide and water; over 482° F., we get nitric oxide. It has been shown experimentally that with the gas a kitten dies of asphyxia; there is a lack of oxygen and not an excess of carbon dioxide in the blood. In administering the drug we notice an irregularity in the pulse which later becomes slow, the pupils dilate, the face becomes congested, and the eyeballs roll. Nitrous oxide, or "laughing gas" as it used to be called, has been used extensively in short dental operations; of late it has come into use, especially in large hospitals, for general surgical work and for operations requiring even an hour or more. There is no objection to starting with nitrous oxide and continuing with ether for example.

As a general rule ether (ethyl oxide) is the anesthetic of choice, except in pulmonary and throat conditions. Even in the administration of this anesthetic there are a great many seemingly small things to think about, but matters of great importance—encouraging the patient beforehand, freeing the mouth of all obstruction, treating the upper respiratory tract so as to run less risk of septic pneumonia (Meltzer), the slow and steady administration, and accelerating the drop somewhat about the second stage. Try to use a good, chemically pure ether; it should boil in a tube with pieces of glass when held in the hand. The following are tests of Kamensky: Ether is not affected by potassium iodide solution for six hours; it is not affected by potassium hydrate for six hours; it should become milky with Nessler's solution, and not yellow, brown, or black. Keep ether away from the light, and keep it in a cool place. A convenient way of administration is to use from eighteen to twenty-four layers of gauze and have some fresh gauze ready to replace the soiled; some wind a long piece over a frame in front of the face. Allow part of the face to be seen, and protect the eyes with parchment or gauze.

In the first stage the disagreeable irritation of the mucous membrane and sensation of suffocating are prevented by the endotracheal method of administration. A careful anesthetization often insures the patient a good night after the operation. Chloroform more particularly is likely to cause subsequent vomiting and should be given very carefully. Irregular anesthesia and fear favor what Henderson calls "acapnea" from inciting the respiratory centre by means of carbon dioxide.

In the administration of chloroform, also in giving nitrous oxide, guard against forcible deep breathing. Remember also that it is dangerous to repeat the administration of chloroform soon after the first administration. There is liable to be prolonged nausea and vomiting after chloroform, from acidosis and also blood dyscrasia. Chloroform is no longer so exclusively used in the south and abroad. Mixtures, such as alcohol, chloroform, and

¹See editorial article in our issue for September 14th, page 543.

ether, are not much used. Chloroform, produced by chlorine acting on alcohol, when dropped in water, should sink clear.

This drug must be watched most carefully in its administration. Protect the patient and yourself against burns. Try to study the condition of the pupils; at first, with chloroform, they are likely to dilate, and then become contracted (according to Baudin) in the third stage. This anesthetic is not a good one as a rule to use on alcoholics. The reflex action on the heart from labored breathing is bad, such as occurs from struggling when the patient is not unconscious. The periods of different effects upon the heart are shorter than in ether anesthesia. It was shown by Wood, at the Philadelphia General Hospital, that it is possible to put a person under chloroform while asleep.

The following lists of anesthetics used in large hospital operating rooms during two years will give an idea of the proportion of the different anesthetics used:

Ether	892	Ether	1047
Chloroform	30	Chloroform	8
Stovaine	10	Stovaine	10
Ethyl chloride	4	Ethyl chloride	2
Nitrous oxide	17	Local	6
Local	50		

Those who are around persons being anesthetized must expect sometimes to see struggling, hear profanity, and see manifestations of erotic emotions, and accordingly it is wise to anticipate all these. Finally, let it be remembered that taking away consciousness from the wide awake, and sometimes from the feeble is not a trifling matter. Keep a record of permission for the anesthesia and of all that occurs during its administration. Be careful *always*, whether you have an expensive apparatus to measure the twenty or 100 drops given in a minute or not, whether you use an open or a partly closed inhaler, and whether you are anesthetizing a private patient or a pauper.

EPISCOPAL HOSPITAL.

AIR IMPURITIES.

Dusts, Fumes, and Gases.

By CHARLES BASKERVILLE, PH. D., F. C. S.,
New York,

Professor of Chemistry and Director of the Laboratory, College of the City of New York; Chairman, Committee on Occupational Diseases in Chemical Trades, New York Section, American Chemical Society.

(Concluded from page 1064.)

THE CITY SMOKE PROBLEM.

The chief poisonous constituents of illuminating gas are ammonia, hydrocyanic acid, hydrogen sulphide, carbon disulphide, other gaseous sulphur compounds, and carbon monoxide. Most of these are removed by the iron oxide used in purification and are evolved from it during revivification. Breathing the contaminated air that prevails in the purifying and revivifying houses of gasworks has been stated to have an injurious effect on the health of the workmen (Drehschmidt, *Jahrbuch für Gasbeleuchtung*, xl, 517.) With regard to the pro-

cess of combustion of illuminating gas, the results of Haldane's experiments (*Journal of Gas Lighting*, 83, 564, 1903) led him to the conclusion that the unpleasantness of air vitiated by the products of combustion of lighting gas was due to the presence of sulphur in the gas and varied in proportion to the amount of sulphur. Care should be taken, and is taken by some gas manufacturers, that illuminating gas be purified from carbon disulphide and other sulphur compounds, as well as from hydrogen sulphide.

The quantity of coal consumed and the volume of offensive gases given off in the large cities are immense. The combustion gases are of a highly injurious nature, and if they were not carried away by the winds, but became mixed with the air of the streets and buildings, the atmosphere would become so poisonous as to kill the inhabitants. Nevertheless the smoke in the air of cities has been found to be injurious to plants, metal, and stone; it is not surprising, therefore, that the problem of smoke abatement has been a vital one for many centuries.³

It has been suggested that the production of fuel gas at the collieries and its transmission to the various centres for combustion will solve the problem by elimination. However, we are at present dependent upon local installations for the minimization of this unnecessary evil, but a realization of numerous rational changes in methods of generating heat and power is necessarily near at hand.

At the conference on smoke abatement, held in London in 1905, Lodge suggested two methods for smoke abatement: The burning of coal at the mines to produce gas or electricity for transmission to cities, and the electricization of the air on a large scale. The latter suggestion cannot be given attention on account of the expense that would be entailed, although it has received favorable consideration by some. Lord Rayleigh⁴ has a theory on dispelling smoke and fog by electricity.

Good firing is admittedly an important factor in smoke prevention, and it has even been regarded as the main factor of the problem,⁵ but it would appear that most authorities favor the distribution of gas as a means of at least alleviating the smoke nuisance.⁶

The economy resulting from smoke abatement is a potent argument in its favor. That this phase of the problem has little to do with the ethical side of the subject cannot be gainsaid, since all communities have the right to demand its abatement regardless of economic considerations.

Soot. Soot is a product of incomplete combus-

³Some six hundred years ago, the citizens of London petitioned King Edward I to prohibit the use of "sea coal." He reacted by making its use punishable by death. This transient measure was repealed, however, but there was again considerable complaint in Queen Elizabeth's reign, and the nuisance created by the smoke seems to have been a direct reason for the execution of Sir John Dinecourt, both abroad and in this country. In the seventeenth century, King Charles II adopted repressive measures in London, and in the present century anti-smoke committees have been formed. In fact, the smoke problem will undoubtedly continue to demand attention until it is either entirely solved by the dissemination of the use of solid fuel or by the neutralization of decay, or, perhaps, when it shall prevent the variation of smoke in furnace, regardless of the nature of the fuel.

⁴On the Proceedings of Smoke Detectors by Electrical Means, *Journal of the Royal Sanitary Institute*, XXXI, 1, 142, and *Electric Review*, 47, 813.

⁵Chamber, *Journal of the Royal Sanitary Institute*, XXXI, 1, p. 42. Cf. also, *London Times*, August 11, 1911, and *N. Y. Times*, Ackerman. In this connection see *London*, XXXI, pp. 47, 51, 59, 85.

tion, formed partly by the mechanical removal of dust by the chimney draught and partly by the decomposition of the fuel, such as takes place in the process of destructive distillation. It consists mainly of carbon, tar, and ash or mineral matter, together with small amounts of sulphur and nitrogen compounds, and often possesses an acid character.

Cohen and Ruston have studied the character and composition of soot (*Journal of the Society of Chemical Industry*, 30, 1360). They found that the higher temperature and stronger draught of a factory furnace would produce a soot more by mechanical removal and less by incomplete combustion than a domestic grate; that the character of the soot varied with the distance from the grate at which it had been deposited; and that the kind and variety of coal used influenced the character and composition of the soot. It was found that, as a general rule, in the case of boiler soots, the percentage of nitrogen, sulphur, and chlorine would increase farther up the chimney, while in the case of domestic soots their percentage would decrease. Roberts-Austen (*Report on the London Smoke Abatement Exhibition of 1884*) found the percentage loss of coal as soot was rather over six per cent.; this result shows a close agreement with the observations of Cohen and Russell (*Journal of the Society of Chemical Industry*, 15, 86), and with the findings of Cohen and Ruston, who took six per cent. as the minimum loss on the domestic consumption of coal and 0.5 per cent. as the minimum loss on the factory coal consumption. Cohen and Ruston have calculated that the average deposit of soot over the whole of Leeds corresponds to at least 220 tons to the square mile per annum.

The sticky properties of soot are due to the tar contained therein. This tar adheres so tenaciously to everything that often it is not easily removed by the rain. In large manufacturing districts, particularly in those where bituminous coal is used as a fuel, vegetation is blackened, the leaves of trees are covered, and the stomata are filled up, thus inhibiting the natural process of transpiration and assimilation. In addition, soot is frequently acid in character, and the deposition of acid along with soot is probably one of the principal causes of the early withering which is so characteristic of many forms of town vegetation.

The presence of soot also diminishes the amount of sunlight in industrial towns; and although soot used as a fertilizer is a substance of importance to the agriculturalist (Hall, *Fertilizers and Manures*, 68-70), yet soot that is acid is detrimental in that it reduces the number and activity of the soil bacteria.

The solution of the soot problem will be coetaneous with the elimination of the smoke nuisance. The diminution in both will result when sufficient pressure is brought to bear upon the consumers of coal, for, as noted, such nuisances may be minimized if not completely remedied. In England the appointment of inspectors has proved, in the long run, a boon to manufacturers in suppressing industrial nuisances; and J. B. Cohen, after many years of study of the smoke problem, is of the opinion that the only satisfactory solution of the soot problem is to put the matter in the hands of men qualified

to assist manufacturers to suppress the nuisance without causing them difficulty.

SULPHUR COMPOUNDS.

Sulphur dioxide as an impurity of city air. Sulphur dioxide has been shown to be present in considerable amounts in the air of various manufacturing cities, when the total amount and not the concentration is considered.

Sulphur dioxide to the extent of 1,300 tons, calculated as eighty per cent. sulphuric acid, is discharged every twenty-four hours into the air of New York city from the combustion of coal alone. From an economic standpoint, this is an enormous, partly avoidable waste, while from a sanitary standpoint any disinfecting action it exerts on the organic wastes arising from the streets is greatly counterbalanced by its general injurious effects which may be thus summarized from a special study of the subject:

1. Its presence in atmospheric air is a menace to hygienic welfare, since it has serious effects on susceptible persons and particularly exerts deleterious effects upon the respiratory organs. Sulphur dioxide in the air of manufactories tends to produce bronchitis and anemia, yet the writer well recalls the cases of two "darkies" who were dying of tuberculosis. They were sent to a sulphuric acid works as laborers, where they became lusty workmen and remained actively in that employment for sixteen years.

2. It exerts an injurious action on plant life. In this action it is less violent than hydrogen chloride, sulphuric acid, and fluorine, but owing to its less solubility and consequent slower condensation it has a wider distribution. In Manchester, England, in 1891, it was learned that the greatest injury to plant life was due to the emanations from dwelling houses.

3. The condensation of sulphurous acid with moisture in fogs and hoar frosts seriously affects goods printed with colors sensitive to sulphurous acid; for example, logwood, Brazil wood shades, and aniline black.

4. Sulphur dioxide proceeding from the combus-

The writer some time ago made a number of determinations of the sulphur dioxide content of the air of New York city. Stations were established all throughout greater New York city, including high office buildings, parks, subways, stations, and railroad tunnels; and very variable results, as might be expected, were obtained. The determinations may, in part, be thus summarized:

Locality.	SO ₂ in parts in a million.
Elevated portion of city, near a high stack	3-14
Various parks	0.84 (maximum; others negative)
Railroad tunnels	8.4-31.50
Subway	None
Downtown region	1.05-5.60
Localities near a railroad	1.12-8.40

Substance.	Impurity.
Air	Trace of sulphuric acid
Air	0.0066 per cent. SO ₂ by weight
Air	Trace of sulphuric acid
Grass (three samples)	Sulphuric acid present
Grass	0.24 per cent. SO ₂
Grass	0.70 per cent. SO ₂
Leaves	0.19 per cent. SO ₂
Leaves	0.28 per cent. SO ₂
Soil	0.0015 per cent. SO ₂

These results do not really give us anything definite, as the comparative factor is absent.

tion of coal and coal gas, the quantity of which in towns is considerable, necessarily destroys the ozone of the air. This may account for the definite variations of the proportion of ozone observed at various localities.

5. In anticyclonic periods the amount of sulphur dioxide rises considerably, and at such times this increase is accompanied by at least as large an increase in the amount of organic impurities in the air.

Sulphur smoke of metallurgical works. Sulphur is widely disseminated in nature. Reference has been made to the occurrence of certain of its compounds in coal and petroleum; it remains to consider the presence of sulphur in metallic ores (especially as sulphides), in consequence of which the smoke from metallurgical furnaces contains more or less of free sulphur, sulphur dioxide, or sulphur trioxide, thereby occasioning what is well known as the "sulphur smoke" or "smelter smoke" nuisance. The flue gases of metallurgical works are also rendered objectionable by the presence of arsenic, and arsenic trioxide is, in fact, a normal constituent of smelter smoke. In addition, finely divided flue dust escapes through, mainly, the smoke channels. Flue dust is pernicious in proportion to the quantity escaping and its corrosive power; the metallic sulphates contained therein injure vegetation in much the same way as sulphur dioxide, and the lead compounds produce toxic effects upon animal life by being distributed over pastures (Lang, *Mineral Industry*, 19, 700).

The authorities of the Agriculture College of Utah, after an extensive investigation, arrived at the following conclusions with respect to the effects of smelter fumes upon agriculture:

1. When the winds bear the sulphurous smoke continuously upon a field, it tends to injure the crops severely and to diminish their yield; it tends also to injure animals compelled to remain exposed to it for a considerable time. Flue dust does not necessarily injure the fertility of the soils, but it may occasionally poison pools of water, due to the lead and arsenic it may contain.

2. Farmers are advised not to irrigate their lands on days when the smoke is blowing over them, and it is considered advisable not to plant trees in the affected districts. Since animals on the pasture are apt to gather more pernicious dust than if they are stall fed, it is considered advisable to grow hay on the affected pastures.

With regard to the obviation of the smoke nuisance caused by smelters, four methods present themselves, viz.:

1. The retention of the injurious substances, in whole or in part. This involves one or more of the following methods of condensation and collection:

(a). Settlement in dust chambers. Such a practice is really confined to the settling of particles of the charge which have been mechanically carried over, and dust chambers without baffles are of little value for the deposition of fume dust.

(b). Cooling the gases by the admission of air, by radiation, or by spraying with cold water.

(c). Recovery by filtration, as in a bag house, or by friction through the interposition of baffles in the flue, or by passing the gases through centrifugal scrubbers. According to Harvard (*Transactions*

of the American Institute of Mining Engineering, 599, 1910), the usual method of depositing antimony fume by water in centrifugal scrubbers is highly efficient, but is unsuited for most other metals. For copper and argentiferous lead smelting, long flues with baffles, in conjunction with an adequate bag house at the foot of the stack, are said to give the best results. When much acid is present, asbestos is used as the bag material.

(d). The Cottrell process, in which the gases are passed through a vessel charged at numerous points with static electricity, from which the fume and condensed acids are repelled, and become deposited upon the floor or sides of the flue or chamber which forms the opposite poles.

(e). Conversion into other forms. This includes either the neutralization of the sulphur dioxide or sulphur trioxide present with zinc oxide in the form of fume in the flues or of dust on the filter bags; absorption of the acid gases by washing with water; reduction of sulphur dioxide by means of carbon; reduction by hydrogen sulphide; or conversion into sulphuric acid by oxidation processes. The last mentioned is a most satisfactory plan and has been put into practice in many works. Liquefaction of the sulphur dioxide has been proposed, but such a procedure is not economical.

2. The diminution of the injurious action of the smoke by dilution and more thorough dissemination. This is effected by dilution with air or by arranging for the smoke to enter the atmosphere at various places instead of one. In such cases, the sole object is to reduce the concentration so low as to escape legal penalties.

3. Transportation of the ore to some sparsely or wholly uninhabited locality for smelting.

4. Conveyance of the smoke in pipes or culverts to some barren place.

The main solution of the "fume question" and "air pollution" would seem to be in the enforced use of waste reclaiming devices by the enactment of a Federal law regulating the amount of waste gases to be permitted to pass into the air,⁵ but laws do not execute themselves, and strict administration, sufficient appropriations for the determination of facts, enlightenment of the public mind as to the effects of noxious industrial emanations, and civic interest will all be absolutely required for the enforcement of such a law. In England the enactment of similar laws laid the foundation of the great chloride of lime industry, and the subject has received merited attention since 1863; in fact, one might say since 1836, the year in which Gossage solved the problem of hydrochloric acid condensation.

In Germany, after extensive experiments in 1848, the furnaces in the smelting districts were remodelled and the volume of the dust chambers increased. This proved advantageous to the smelters, as the following shows: The Freiberg Smelting Works

⁵An objection which has been urged against the regulation of the amounts of acid gases discharged into the air is this, that it is not practicable to establish a permissible amount of noxious gas which may be emitted, for all parts of a country owing to geographical and meteorological conditions. This is indeed well founded.

Other important questions to be considered in the formulation of a Federal law, such as those referred to, are the enforced selection of location for smelting works, etc., preferably on plains or level portions of the country with due regard to winds, and the advisability of enforcing the adoption of tall stacks and chimneys by all works generating noxious gases.

See Baskerville, *Journal of Industrial Engineering Chemistry*, No. 8, 1910; and *Engineering and Mining Journal*, May 1, 1909, pp. 884-7.

paid 55,000 marks for damage in 1864, and but 4,793 marks in 1870, after installing means of condensing the acid gases. In our own country it is encouraging to note that some manufacturers and smelters have at last begun the installation of waste recovering contrivances—surely a decided step toward the solution of a great national industrial problem, however novel and radical such devices may appear.

LEGAL AND SOCIOLOGICAL CONSIDERATIONS.

Every individual has the right to have the air distributed over his properties and habitation in its natural condition, that is, free from all artificial impurities. In fact, it may be stated that no one has the right to interfere with the distribution and amount of pure air which flows over another's land any more than he has to interfere with his neighbor's soil. This right is strictly a natural one, and every use of property that causes an unwarrantable impregnation of the air with foreign substances to the detriment of another is a nuisance and is actionable as such. The air must be as free and pure as can be reasonably expected.

Based largely on the preceding, it is laid down broadly as a general rule in law that any act, omission, or use of property which results in polluting the atmosphere with noxious or offensive gases or vapors, thereby causing material physical discomfort and annoyance to persons residing in the vicinity, or injury to their health or property, is a nuisance. This rule has been supported by decisions in Delaware, Illinois, Kentucky, Missouri, Pennsylvania, Texas, and Wisconsin.⁹

However, persons engaged in agricultural pursuits in manufacturing districts invariably have impressions of the destructive action of the waste gases resulting from fuel combustion, etc., upon vegetation generally founded on observation and tradition. There are many instances of sympathetic injuries having fostered these impressions, basing their awards on miscellaneous general evidence and not upon scientific examination. In such cases too much reliance is often placed on the appearance of individual trees and of isolated trees.

In some cases the injury through atmospheric influence resembles smoke injury. A lack of iron and the ravages of insects produce yellow or red blotches on leaves. A distinction from fume poisoning can be discovered, however, by transverse sections under the microscope, when mycelium strings will be observed between the cells. In the case of pines, stronger trees absorb less than the weaker ones, and even though there is no visible injury as observed in the change in the appearance of the needles, a microscopical examination will demonstrate that the chlorophyll substance has undergone changes or destruction when treated or exposed to sufficiently concentrated sulphur dioxide or hydrogen chloride.

Poor soil, exposure to wind, especially dry wind, diminished water supply, and fungi, all produce morphological conditions in vegetation which lead to the gravest misapprehensions in the minds of rural folk, and ofttimes accusation of fumes and gases as the cause results, either wrongfully or on

a priori grounds. Ordinary testimony based upon odor alone should, as a rule, carry little weight.

It is well known that the present sociological and political ideas which obtain in the rural communities, and certain abuses of the centralization of capital on the part of corporations, have resulted in injuring the chances of the latter in suits of this nature. While it is true that certain corporations conceal their processes of manufacture, the nature and amount of materials used and the output of product, as well as employ other precautions in order to render the recognition of damage done by fumes more difficult, yet many instances are known where gardens are purposely set out with expensive flowers unsuited to the climate, just to profit by the damage for destruction by "noxious gases," and manufacturers are not protected from such malicious actions.

Some time since the writer made the suggestion, with the aim of justice in mind, that complaints of this nature be settled by a commission composed of three experts in such matters, one being selected by each of the parties and the third being chosen by these two; or two of the experts may be appointed by the court and a third selected by these two. Such a board of experts could investigate the facts of the case scientifically on the spot, and, if damage has been done, fix the amount and warn the offenders that a recurrence will bring forth more severe penalties. Negligence on the part of the manufacturers would cease, as well as annoying and expensive interruptions of business. Honest manufacturers would welcome such a change. It is recognized that such settlements might not be looked upon with particular favor by the legal fraternity, but it is interesting to note that a recent case brought against the Mammoth Copper Company, in Shasta County, California, was settled by an arbitration board composed of three horticulturists, both parties to the suit having agreed to abide by their decision.

In this connection it may also be remarked, for the benefit of those who have not had occasion to investigate the matter, that there is neither entire uniformity nor definiteness of statement in the codes of our several States in regard to the contamination of the air or the pollution of streams. When such contamination becomes wretchedly bad from any cause whatever, protests sometimes check the wrong and secure legislation. The continued pressure of unsubsidized publicity often encourages direct action in these matters.

COLLEGE OF THE CITY OF NEW YORK.

DIET IN CARCINOMA.

BY EUGENE G. KESSLER, M. D.,
New York.

Up to within a few years it was the custom in the scientific research of the cancer problem to proceed on lines of morphological consideration exclusively. In the light of modern biochemistry such a standpoint cannot hold good, and we must at least aim to couple this morphological view with one of the function of the cells—a functional diagnosis built on the broadest basis.

Biochemistry goes more deeply into the inner workings of cell life. Almost every day brings us

⁹The legal status of offensive industries is discussed by the author in *Engineering and Mining Journal*, pp. 884-7, May 1, 1909, to which the reader is referred for a consideration of the smoke and noxious gas problem in detail.

new proof of the profound changes of cell metabolism under certain conditions. New problems have opened before us, new views of prophylaxis and treatment.

At the present time we have in the seleniocyanates the best specific remedy for carcinoma; we base the effect of this, as well as that of therapeutic agents in general, on the relationship between chemical constitution and physiological action. The management of the diet, therefore, should be based on a similar view. No other therapy is excluded, no aid denied.

The disturbances of the metabolism are the prominent symptoms in carcinoma. The characteristic changes, so much influenced by the seleniocyanates, must be judged from a broad basis; the use of a single remedy should not suffice to satisfy our efforts in the treatment of any metabolic disturbance. In disturbances of the metabolism diet has always exerted a far reaching influence, and the patient suffering from carcinoma needs, beside his prescription, explicit directions in regard to his diet.

A treatment of cancer by diet alone would be inefficient and disastrous, as dietetic influences at the present stage of knowledge could never be wielded with such force as to overcome this most malignant of all disturbances.

In the literature we find scanty reference to diet in carcinoma, and a critical examination of what exists has hardly been made. As far as a scientific diet in carcinoma can be considered, the publications of Beneke (1) must be considered first, because they form the basis of it. These are also referred to by later writers, and have been handed down by tradition. Beneke found the cancer cells rich in cholesterol. He assumed theoretically cholesterol to be a product of the proteins, which, however, is not proved, and he therefore reduced not only the diet of cholesterol and lecithin, but of all nitrogenous substances.

To a certain degree traditional experience practically coincides with the postulates of Beneke. Observation shows that cancer occurs spontaneously less frequently among herbivora than among carnivora. Ethnographic observation shows that cancer appears more frequently in races having a high consumption of meat. In the literature we find frequent reports that the growth of cancer is strongly favored by an excessive meat diet; it was therefore concluded that a vegetarian diet was the proper one in the prophylaxis and treatment of carcinoma.

We know now that before assimilation all food stuffs are resolved into the simpler forms of chemical structure, and are thus taken up as building stones, but the basic element and the molecular structure of these building stones are matters of importance. It is from these that the system supplies its wants and through these the metabolism is to a great extent influenced.

Having found how the sulphur metabolism in carcinoma is changed, we are able to add a number of dietetic recommendations which are in harmony with the postulates of Beneke and clinical tradition.

The proteins of the meat diet are all rich in sulphur, and in our opinion ought to be reduced.

However, we should not go so far as to recommend an exclusively vegetarian diet in carcinoma. A vegetarian diet would certainly not, according to our opinion, be sufficient for good nourishment with the high rate of waste in carcinoma. Proteins with a low percentage of sulphur are the caseins of cow's milk. It would also be desirable to reduce the lactalbumin of cow's milk and to use the pure casein. Conversely, we must exclude a number of vegetable foods that contain high proportion of sulphur.

To prevent cancer or metastases on the lips or in the mouth, smoking ought to be stopped. We know that in smokers the production of sulphocyanic acid is increased. Sulphocyanic acid is a compound of neutral sulphur. We thereby see that it diminishes the oxidation of sulphur. Most likely this is to be attributed to the influence of the nicotine.

The literature giving the sulphur content of various food stuffs is rather scant. Very useful analyses of the sulphur content of fishes are reported by Atwater (2). This is the most important work I have found in the literature pertaining to the sulphur content in food stuffs. According to that writer, fish that should not be taken are: Black bass (4.14); flounder (3.10-2.23); smelt (2.79); white perch (2.67-2.54); striped bass (2.28); brook trout (2.13); lake trout (2.00). (We give here the percentage of anhydrous sulphuric acid (SO_3) that Atwater found in the saltpeter soda fuse. The list of fish is arranged so that the first named are to be most positively forbidden.)

Fish recommended would be halibut (0.80), California salmon (1.14), white fish (1.36), salmon (1.52), mackerel (1.55), cod (1.59). Fish that may be taken are herring (1.77-1.89), shad (1.78), Spanish mackerel (1.81), blackfish (1.97), and porgy (1.84).

The blood of oxen is very rich in sulphur, and articles of food containing it should not be permitted. Buttermilk is also rich in sulphur and is not to be recommended. Butter contains only a trace. Of eggs the yolk is to be preferred, the white containing 2.12 per cent. sulphur in the ashes.

The following figures in brackets signify the percentage of anhydrous sulphuric acid (SO_3) of the ashes of the total solids, and are taken from the works of Koenig and other writers mentioned in the bibliography. Vegetables not permitted are: Horseradish (30.70), mushrooms (24.29), cauliflower (14.16), chives (12.28), fennel (9.08), kohlrabi (8.85), Savoy cabbage (8.20), radishes (7.78), spinach (6.87), asparagus (6.18), cucumber (5.70), cocoonut (5.09), onions (5.46), and artichokes (5.18).

Vegetables recommended are: Truffles (1.17), rhubarb (1.89), beets (2.08), chicory (2.24), pumpkin (2.37), lettuce (3.76), beans (3.37), peas (3.49), Roman salad (3.87), and chestnuts (8.55).

Among the above ground vegetables, the leafy varieties such as cabbage, etc., contain a large quantity of neutral sulphur and should be eschewed as a class.

Cereals and breadstuffs recommended are: Wheat (0.39), oatmeal (0.68), rice (0.86), rice, peeled (0.62), corn (0.78), rye (1.28), barley

(1.69), buckwheat (1.68), poppy seed (1.92), graham bread (2.02).

Among fruits are recommended: Almonds (0.37), olives (1.05), plums (2.46), oranges (2.55), huckleberries (3.11), and strawberries (3.15).

Casein and butter are, as already mentioned, practically free from sulphur, and ought therefore be recommended above all other foods.

The diet which I would recommend in carcinoma would be somewhat of the following scheme, to be modified according to the taste of the individual:

Breakfast: Tea or coffee with sugar and cream (not milk, on account of the lactalbumins), little bread with much butter, fresh or cooked fruit.

Dinner: Soup, of fruit or cereals or vegetables (not meat broths), peas, lentils, beans; for change, meat, two ounces at the most, purée of potato, dumplings, edible roots (carrots, beets), boiled or preserved fruits, rice, salads.

Supper: Fruits with rice, potatoes with butter, salads.

The nourishment should be plentiful. The necessary quantity of casein, one or two ounces, can be mixed with butter and used with the various meals. The casein can also be added to the various soups, purées of potatoes, and to the dishes of vegetables during the process of cooking. In order not to cause any aversion of the patient to the casein, it must be absolutely pure and tasteless. A flavoring addition to the casein of stewed tomatoes and the like is also permitted. The casein may also be given in the form of a medicament, in dry powder, in one half to two drachm doses, every three hours, between meal times, and is best taken down with a swallow of water.

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3. J. KOENIG: *Chemie der Nahrungs- und Genussmittel*, 1904.
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315 EAST EIGHTY-SEVENTH STREET.

POSTYEN AND ITS NATURAL HOT SULPHUR MUD BATHS.

By EDWARD PISKO, M. D.,
New York.

It seems to me to be working in the interest of humanity, especially of suffering humanity, if I publish the following remarks, intending thereby to bring before the medical world the therapeutic qualities of the baths of Postyen and Trenczin-Teplitz. The therapeutic effect of these baths is due to the sulphur and to the radium which their waters contain in abundant quantities. We are dealing there with baths in the usual sense of the word of a temperature of 140° F., or thereabouts, and with mud baths. The water is used for both bathing and drinking, and the mud baths are also used for local applications.

Surrounded by the lofty and majestic mountains of the Carpathian chain which bounds the northern limits of Hungary, these two baths excite the wonder of all those who go there in search of

health, and long linger in their memory the beauty and ethereal atmosphere of that secluded paradise. A short distance, but three hours' journey from the ancient and world renowned Vienna, on the river Waag, lie both these baths, Postyen and Trenczin-Teplitz, 600 feet above the level of the sea. The baths themselves are in a valley, thus shielded and protected by the encircling mountains. Both these baths, notwithstanding their great therapeutic value, notwithstanding their great cures of certain metabolic and skin diseases so well known to our brothers in Europe, seem to be almost unknown to the American practitioner, and it is my desire to call attention to these wonderful baths, actuated by the experience of both myself and my patients.

The range of therapeutic activity is indicated by the chief chemical constituents of the baths, by the sulphur and by radium, which means that the range of therapeutic application is very wide. Wherever sulphur has by a long experience proved to be indicated, wherever radium is proving itself to be of benefit, these baths do their wonders. Rheumatism, gout, etc., skin diseases, are not only benefited by the treatment, but effectively cured, and the coat of arms of the city of Postyen very appropriately and truthfully has a broken crutch at the foot. The stronger of the two baths is Postyen, and my following remarks are applicable only to that bath.

The great cures effected in the past cannot be accounted for solely by the sulphur it contains, but explanation must be sought in the rich radium emanations of these baths, which have now been positively and scientifically demonstrated. One, in fact, seems to breathe the radium emanation. It is the discovery of these facts which gives us the solution for the cures effected in the past. The waters are very hot, and so is the mud, and neither can be taken in its native state; both must be artificially cooled before use. The picture which I am about to spread before you is based on my many personal experiences in childhood of myself as a patient and of recent times.

Postyen is enchanting; its beauty from a landscape point of view defies description. The view of it has an exhilarating effect. These opinions are fully shared by others, and I will here mention only Sir Spencer Wells, Mosetig von Moorhof, and Professor Hoffa, of Berlin. A most vivid and lucid description of his experience in Postyen is given by Sir Spencer Wells in the *British Medical Journal*, 1888, Notes on a Visit to Postyen. This article breathes enthusiasm for Postyen as a curative place. No less vivid are the descriptions of the other two gentlemen mentioned, and they also agree that the curative value of the baths cannot be ascribed to the sulphur alone.

Postyen has a good many statues, most of them the gifts of thankful patients. There are a sufficient number of establishments there for its patients and guests, and the more recent buildings are provided with all sorts of luxuries for their comfort. Music rooms, reading rooms, smoking rooms, large ball rooms, concert hall, even summer theatres, are all provided; besides, one notes everywhere the affable manners and customs of its residents, ready and eager to oblige every one.

The park surrounding the springs has an area of about 200 acres and is devoted to the pleasures of all. The park itself is surrounded by mountains which give full protection against winds and other inclement weather. There are concert twice daily, morning and evening, by a symphony orchestra and military bands; rapturous music, also sentimental melodies by Gypsy bands, folk music to suit each and every taste, not to forget our American rag-time. These pleasures may be enjoyed even by those who themselves are not able to leave their invalid chairs; they are wheeled right to the music hall or restaurant or the café or theatre, as the case may be.

Not to be forgotten and of great importance is the fact that the basins are supplied constantly with the health giving waters issuing from the springs, and therefore the radium emanations are constantly replenished and augmented these basins being fully enclosed within the rotunda of the bath. The bather is forced to breathe the lubricious air, which seems to be saturated with radium, the rotunda representing a gigantic radium inhalatorium.

Leading from the Irma baths to the Thermia Palace Hotel, is a large and commodious corridor, which is heated in winter. The patients are, therefore, not exposed, and can use the baths in winter as well as in summer. This enormous establishment knows no seasons; notwithstanding the fact that the regular season most enjoyed by all is from May until October, as in all European watering places. Aside from the Irma baths there are seven others also provided with great basins, likewise inclosed in large rotundas, and likewise representing great radium emanatoria.

The difference between the Irma baths and the others is only in size and accommodation for the patients, and there is no difference as to their respective therapeutic values. Perhaps there is a drawback, and that is that the water enters all of these basins at its original temperature, and in order to lower the temperature to a bearable degree, individual compartments are provided in which the temperature can be regulated according to the necessity of the case.

In all cases the manipulation of the baths and the regulation of temperature are under the strictest supervision, not only of a thoroughly trained physician, but also of equally trained help. There is discipline, there is system, there is method. Every one of the employees knows his duty, and does it to the full satisfaction of all. It is doubtful whether anywhere in the world can be found a radium emanatorium to equal Postyen.

Before we approach the question of the therapeutic procedures, it is perhaps appropriate first to call attention to the conditions which are benefited in health by these baths. Rheumatism, especially of the joints (chronic cases), gout in all forms, neuralgia, sciatica, lumbago, etc., exudations, especially in the pelvis of the female; diseases of the bones, gonitis, coxitis, caries, tuberculosis, rickets, syphilis, paresis, apoplexy, inflammations, diseases of the skin, especially chronic eczema, psoriasis, and prurigo.

Already I have stated that the baths are under the most competent supervision, and every condi-

tion of the patient is properly graded and individualized. Now it is a bath which requires attention, again it may be the foot, or some other special part of the body. Everything is previously ascertained before the bath is begun. Some there are who object to bathing in common with others, and for these there are the special cabinets. It is unnecessary to dwell upon the fact that the applications of the mud are subjected to the same rigorous rules as are the waters. Likewise here no general rule is known. Every case is treated as a distinct entity, requiring its own rules for individual treatment.

In the mud treatment the degree of temperature, the strength of radium are most scrupulously kept in mind.

It happens quite frequently with some patients requiring the mud treatment that for some reason or another they prefer to be treated in their own apartment at the hotel. They can have it so. The treatment consists, first in ascertaining the dose, the strength, the time, the quantity, the temperature, and how the waters or mud are to be used. In everything there is absolute and unvarying exactness. The physician knows that he can fully rely upon his assistants, who have learned strict obedience. The waters are used, not only for bathing, but also for drinking. Here again there must be a strict individualization as to strength, temperature, quantity, and frequency.

In the matter of diet there is like strict supervision. The restaurants, of which there is an abundance suiting both the poor and the one brought up in luxury, receive their orders as to combination and composition of the food and dishes from the physician. Nevertheless every patient has sufficient choice of selection, according to his or her individual taste. Needless to say that the kitchens, including all help, are under the strictest sanitary and hygienic supervision. Everything is supervised by the strict and rigorous discipline of a monarchical government. Alcohol is absolutely proscribed.

It is advisable to use the thermal water, Postyen-Heissquelle, both as after treatment and as a prophylactic, the latter in such cases as show a disposition toward the diseases named before, rheumatism, gout, adenitis, rickets, and the management of the baths has therefore provided for exportation of the waters. It can be had in its original purity, unadulterated. The bottled water has a specific taste, which is rather liked by those who drink it; notwithstanding the sulphur it contains, it nevertheless tastes excellently because of the free carbon dioxide which it holds. It is the latter constituent which makes it a most pleasing and invigorating table water. As to its prophylactic quality, I need allude to but one disease, nephritis.

From the point of view of cost of the baths, the management has provided for all classes; the poor as well as the millionaire, can be suitably accommodated at from \$15 to \$25 a week with a private family (board), to any sum that one cares to spend in the highly modern and most luxuriously equipped hotels. Corresponding are the prices of the baths, graded in accordance with the means of the patient, so that even the very poor can get the benefit of the baths.

616 MADISON AVENUE.

IN MEMORIAM: GENERAL ROBERT MAITLAND O'REILLY, SURGEON GENERAL,
UNITED STATES ARMY, 1902-1909.

By F. H. GARRISON, M. D.,
Washington, D. C.

Robert Maitland O'Reilly was born at Philadelphia, Pennsylvania, on January 15, 1845. He was descended from an old Irish family, one branch of which had settled in Spain, and a member of which had been captain general of Cuba and one of the Spanish governors of Louisiana. He was educated in the public schools of his native city and his medical studies were interrupted by the outbreak of the Civil War. In August, 1862, he enlisted in the Military Hospital Service as an acting medical cadet, serving successively in various army hospitals through the war. Resuming his medical studies at the close of the war, he received the M. D. from the University of Pennsylvania in March, 1866. In April, 1867, he was appointed assistant surgeon, United States Army, with the rank of first lieutenant, and thereafter his service was distinguished and his promotion rapid. He received his captaincy in 1870, became major and full surgeon in 1886, lieutenant colonel in 1900 and surgeon general in 1902, serving in the latter capacity to the term of his retirement in 1909. During his military career, he saw much active field service, on scout duty in 1868-9, in Colorado in 1870, as chief surgeon of the Sioux expedition in March, 1874, in the labor strikes in Maryland and Pennsylvania during the summer of 1877, and on another expedition against the hostile Sioux in South Dakota during the winter of 1880. He was wounded by an accidental revolver discharge at Mud Springs, California, in 1867, which disabled him for several months, and sustained another severe injury in line of duty in 1877.

In June, 1882, Captain O'Reilly was assigned to the office of the attending surgeon at Washington and was appointed attending surgeon in October, 1884, specializing in the surgery of the eye in his hospital practice. He was physician to the White House during President Cleveland's two administrations and a warm personal friend of the latter.

During the Spanish-American War, Major O'Reilly was chief surgeon of the First Independent Division, and on May 20, 1898, was commissioned lieutenant colonel and chief surgeon of volunteers, serving on the staff of Major General Wade at Havana, Cuba, from November 16, 1898, to November 11, 1899. During this war he was an active member of boards for selecting camp sites in the southern States and the cleaning up of Havana, and, in December, 1898, he went to Jamaica to study tropical hygiene in reference to the American occupation of colonial possessions. After the close of the war he was chief surgeon of the Department of California until September 7, 1902, when he was appointed surgeon general. He was a delegate to the International Conference for the Revision of the Geneva Convention at Geneva, Switzerland, in 1906.

In 1903 General O'Reilly collaborated with Major William C. Borden in a monograph on military surgery which was published in the fourth edition of Keen's *American Textbook of Surgery* (Philadelphia, 1903, pp. 1286-1307).

During the last years of his life, General O'Reilly suffered much from ill health, and he rapidly succumbed to attack of uremic poisoning on November 3, 1912. He was buried with full military honors beside his only son at Arlington on November 5, 1912. He is survived by his widow, who was Miss Frances L. Pardee, of Oswego, New York, and his daughter, who is the wife of Captain Frederick B. Heressy, United States Army.

As an officer, General O'Reilly was of the type of which Colonel Goethals and Colonel Gorgas are distinguished examples, the man who can rule without seeming to rule. While surgeon general of the army, his relation to the officers of his staff was as that of the head of a family with whom he lived in perfect rapport, encouraging each one to be himself and to give to service his best work after his own fashion. In his way, he did much to elevate the status and personnel of the army medical corps and to further scientific research. Upon assuming his office, he immediately set himself to the task of carrying out the recommendations made by the Dodge commission for the improvement of the army medical corps, as a result of which it is now able to equip its hospitals and field units more rapidly than they can be organized and their personnel brought together. He created the medical reserve corps of the army for the expansion of its medical service in time of war in which many distinguished physicians and surgeons of the country have sought enrollment. He organized and presided over the board, recommending the adoption of preventive vaccinations against typhoid fever in the army, the work which has been brought to such a brilliant and successful conclusion under Surgeon General Torney's administration. Under General O'Reilly's administration, Major Walter Reed and Major Walter D. McCaw were appointed librarians of the surgeon general's office in due succession, and it was due to his good offices that Professor R. H. Chittenden, of Yale University, was able to use a squad of hospital corps men in carrying out his important experiments upon the physiological economy of nutrition, the practical object in view being to ascertain the best scheme of rations for troops under modern conditions.

Those who use the *Index Medicus* are indebted to the surgeon general of the United States Army and to the librarians of the surgeon general's office for the privilege accorded to the editors of the journal of using the rich supply of current bibliographical material in that library, which has perhaps the most unique and valuable collection of medical periodicals in the world. When, after a lapse of six years, the publication of the *Index Medicus* was renewed through the generosity of the Carnegie Institution in 1903, the privilege mentioned was extended to Doctor Fletcher by General O'Reilly in the same cordial spirit of support which the journal has received from his predecessors and his successor in office.

In the relations of private life, in which the writer knew him best, the same qualities were everywhere apparent. A brave and high spirited officer in the field, he was, in his private relations, a man of extremely sensitive, refined, and retiring disposition, and, underneath a playful, quizzical manner, deeply sincere. His kindly, genial nature, full of the Celtic

charm, made everyone his friend. It is no exaggeration to say that all who came in close contact with him loved him, and, by the same token, there was nothing they would not have done for him. He had all his life been a devotee of chamber music, a violinist capable of leading a string quartet with fire and precision, and was a familiar figure at the Washington concerts of the Kneisel Quartet. He was fond of gathering young people about him for chamber music at his house and, on these occasions, he had the happy gift of bringing out the very best that was in them.

All who knew General O'Reilly intimately will think of him, with deep affection, as one who brought into their lives a great sense of the beauty of delicacy and refinement of feeling. His friends will retain "the memory of a man unspoiled," a man who not merely professed Christianity but practised it.

ARMY MEDICAL MUSEUM.

Abstracts and Reviews.

THE SURGERY OF THE SPLEEN.*

By WILLIAM J. MAYO, M. D.,
Rochester, Minn.

At the present time we possess a fairly accurate knowledge of the functions of all the abdominal organs with the exception of the liver and the spleen. The liver we know to be essential to life, and to have to do with absorption from the intestinal canal. The spleen is not essential to life. It removes from the blood stream broken down red blood cells, has a digestive function, and is concerned with the metabolism of iron. Its nerve supply is from the splanchnic nervous system, and it probably has an internal secretion like that of the liver. Stimulation of the nerves supplying the spleen produces contraction of the organ. Adrenal secretion acts directly upon the bloodvessels, and furthermore upon the splanchnic nerves, thus influencing widely other abdominal organs. Splenic secretion does not thus affect the splanchnic nerves. The spleen may be affected secondarily by diseases of the liver, also primary disease of the spleen may involve the liver, as in Banti's disease. The common source of blood supply in the celiac axis furthermore indicates the close relationship existing between the liver, stomach, and spleen. In the embryo the liver, spleen, adenoid tissue, and red bone marrow all unite in the formation of the blood cells. The spleen retains this function throughout life. In the fetus the spleen forms both red and white blood cells, but soon after birth is confined exclusively to the formation of the white blood cells. Its chief function, therefore, is twofold, the destruction of the broken down, red blood cells, and the formation of white blood cells.

Pathologically, the spleen may be enlarged, either with an abnormal increase in the white blood cells, as in leuchemia, or with a deficiency of red blood cells, as in splenic anemia. In some cases of malaria, the spleen is found chronically enlarged and containing the malarial organisms. Normally, the

spleen is held concealed within the lower chest cavity, and, as a rule, cannot be felt unless abnormally enlarged. When thus enlarged, the spleen margin may be felt beneath the free border of the ribs upon the left side. When thus found enlarged, with an increased number of white blood cells, leuchemia exists.

Embryologically, the white blood cells are the first formed. Leuchemia may thus be regarded as a reversional disease. Whenever the spleen has been removed in leuchemia, the diagnosis being correct, the patient has eventually succumbed.

Splenic anemia is an entity, presenting an enlarged spleen, diminished red blood cells and hemoglobin, but an unchanged white cell and differential count, marked decline in general health, and is often associated with hemorrhages, most commonly from the stomach.

Banti's disease may be considered a late form of splenic anemia, showing the additional symptoms of jaundice and ascites. We have done eighteen successful splenectomies for this condition. When both liver and spleen are enlarged, the difficulty in diagnosis arises as to whether the disease present is primarily a cirrhosis or a Banti's disease. Following splenectomy in Banti's disease, pain in the long bones was observed in twenty-five per cent. of the cases, due probably to hyperplasia of the red bone marrow. In two cases we have observed essential hyperplasia of the spleen, without anemia and with fair general health. An enlarged spleen may be observed in tuberculosis, and where this is primary in the spleen, the organ may be removed with success. Ten such cases have been reported, with seven cures.

Where a free mesentery exists, permitting wide range of mobility, the spleen may become enlarged, with which condition anemia may develop. This may be associated with sudden severe attacks of pain, due to torsion of the pedicle, producing splenic crises. Operations aiming at the fixation of such a spleen are less successful than splenectomy. Removal is safe and easy under such conditions. In one case in which fixation was done, the spleen remained where placed, but the pain continued. Cysts of the spleen may occur from an intracapsular hemorrhage. Primary sarcoma of the spleen is rare, as is endothelioma. Of the many cases of endothelioma reported a large proportion are simple hyperplasias. Primary sarcoma, when removed early, may result in cure, one patient operated upon by the writer in 1905 doing well at the present time. The diagnosis is made late as a rule with the patient beyond the possibility of a complete removal and operative cure. Here ligation of bloodvessels may be employed. In the operative procedure two types of incision are used. For removal of the larger spleens, the vertical incision is employed, dividing the fibres of the left rectus muscle obliquely along the free border of the ribs, and continuing downward as far as necessary along the outer border of the rectus sheath, without regard to the nerve supply. For smaller spleens the transverse incision may be used. The spleen is packed off, and a pedicle clamp is applied to the spleen pedicle three inches from its hilus. The vessels are ligated individually, the spleen is cut away, the clamp removed, and bleeding vessels are ligated if they appear, and the cut end

*Summary of a lecture before the Third Clinical Congress of Surgeons of North America, New York, November 12, 1912.

of the pedicle is whipped over, covering this entirely with peritoneum. A long pedicle prevents the slipping of the ligature, and possible death from hemorrhage in a patient unable to withstand bleeding.

The first death at the Mayo clinic resulted from this occurrence. The ligatures often tend to cut through the friable tissue, hemorrhage following. It is essential in splenectomy that the pedicle ligatures never slip or cut through, and this can be prevented by assuring a sufficiently long pedicle. A gauze pack may be left in the peritoneal cavity if oozing persists, following the separation of adhesions to the diaphragmatic surface. The tail of the pancreas may be removed with the spleen, as has occurred several times, without bad effect, even in one case in which a divided pancreatic duct was evident. In the pedicle, accessory spleens or splenuli may be found, one or more, varying in size from that of a hazelnut to two or three inches in diameter. The claupe, also, may include a fold of the stomach, but without harmful results.

The reported mortality varies from eighteen to twenty-seven per cent. It should not be more than from five to ten per cent. At the Mayo clinic, twenty-seven splenectomies have been done, with two deaths.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXXVIII.—How do you treat infantile convulsions? (Closed November 15th.)

CXXXIX.—How do you manage chronic ulcers of the leg? (Answers due not later than December 16th.)

CXXX.—How do you treat subacute and chronic laryngitis? (Answers due not later than January 15, 1913.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to Question CXXVII has been awarded to Dr. William L. Rhodes, of Kansas City, Kan., whose article appears below.

PRIZE QUESTION CXXVII.

THE TREATMENT OF PRURITUS VULVÆ.

By WILLIAM L. RHODES, M. D.,
Kansas City, Kan.

In general two sets of causes are recognized as inducing pruritus, and perhaps a third. These are:

1. Irritating secretions, acting upon the parts and frequently associated with a local infection;
2. Neuroses;
3. Blood alterations.

There are more than twenty direct causes com-

ing under these three general causes, and before beginning treatment it is advisable to become familiar with them. In almost every case the suffering is so intense that immediate relief is imperative, but the permanent cure can only be effected by the removal of the underlying disease.

It frequently happens that itching of the external genitals is the first symptom of sugar in the urine, so one of the first steps is an examination of the urine to determine a possible nephritis or diabetes. One of the first things to do in all cases is thoroughly to shave the pubic region and cleanse with green soap. Repeat this every few days. If there is any evidence of a gonorrheal infection, appropriate treatment of the gonorrhea will usually cure the pruritus. It is essential that the parts be kept clean, and for this purpose the use of pure castile soap and warm water, twice daily, followed by an application of powdered boric acid and alum, will be of service.

Where the irritation is caused by a cervical discharge, not of a gonorrheal nature, tampons of boroglyceride or of glycerin alone will be of help by preventing the discharge from touching the vulva and as a cure of the discharging cervical glands. A small, well defined area of pruritus has been cured by treating with pure carbolic acid, the application being limited to the spot affected. A ten per cent. thymol and glycerin solution is of help as a soothing application where the itching is intense. Carbolic acid is, however, one of the most reliable antipruritics, and when used in about five per cent. strength with menthol, camphor, and wool fat has proved very efficacious. A three per cent. carbolic acid poultice applied at bedtime will often give relief.

Where the pruritus is caused by a diabetic condition, a fifteen grain dose of sodium salicylate, every four hours, is of great help in some cases. The silver preparations, silver nitrate, argyrol, protargol, are of special benefit where there is an active superficial inflammation. If follicular inflammation is present, the inflamed follicles may be emptied by puncture, and the cavities may be touched with a silver nitrate solution of ten per cent. or with the silver nitrate stick.

A useful mixture for washing out the vagina and for an external wash in this condition is the lead, opium, and carbolic acid mixture. Hot sitz baths, every four hours, sometimes give relief by reducing the inflammation, as also does the application of the ice bag. One grain of the bichloride of mercury in an ounce of almond oil applied locally every three or four hours is a splendid palliative as well as a healing mixture. Iodoform in ether, applied with an atomizer every few hours, will relieve some patients when all other methods fail.

A hazardous treatment, but a good one, is the use of the alcohol phenol swab. Make two cotton swabs, saturate one with carbolic acid, full strength, the other with ethyl alcohol; swab the affected parts with carbolic acid and in ten seconds follow with a thorough swabbing with the alcohol.

As to systemic treatment, keep the bowels open with calomel, and give a general tonic of iron, quinine, and arsenic. Arsenic is of great value in all cases of pruritus. Where there is much nervousness, give the bromides as a sedative. Have the pa-

tient take mild exercise daily, get plenty of sunlight and fresh air, regulate the diet by having her abstain from all nitrogenous foods, and have her drink plenty of water. Electricity has been found of benefit in some cases and is worthy of a trial where other methods seem to have had no effect.

Operative methods have been employed in a number of cases with good results, but should not be used unless there is a thickening of the diseased tissue that will not amend by the other methods of treatment. The most popular operation is the excising of all the diseased tissues, cutting away the clitoris, the nymphæ, and the affected parts of the labia majora in the form of an inverted Y, then suturing the remaining tissues to the vaginal mucosa.

Dr. M. Schotz, of Cincinnati, recalls the fact that

Pruritus, with a few exceptions, as in local skin neurosis, or as a part of generalized neurosis, so called essential pruritus, usually represents a symptom produced by various etiological factors, and is due to a variety of constitutional and local causes. Hence, successful treatment of it absolutely depends on correct differential diagnosis, and the correct elimination or control of respective etiological factors of individual case.

Etiologically, all cases of vulvar pruritus can be successfully divided into the following groups:

1. No organic changes or pathological agents primarily located in the skin. (a) Here belongs the above mentioned group of local or generalized essential pruritus. (b) Cases due to constitutional causes and to irritation of cutaneous nerves by products of faulty metabolism, or toxins circulating in the blood, as in diabetes, icterus, chronic nephritis, gout, alcoholism, pregnancy. Some of these cases are of mixed character, since urine laden with pathological products adds local irritation of the vulva.

2. Pathological agents and changes primarily located in the skin, representing the majority of all cases, can be subdivided into several groups: (a) Pruritus produced by irritating discharges due to any of the numerous diseases of the uterus, cervix, vagina, or urethra, and by the urine laden with various pathological products of constitutional or renal origin (partly overlapping group of constitutional cases), also cases due to lack of cleanliness and decomposition of natural secretions. (b) Parasitic affections of the vulva, local or as a part of generalized disease, as pediculosis, scabies, ascarides from the rectum in children.

3. Skin diseases of the vulva only or as a part of general dermatosis, as eczema, intertrigo, lichen planus, prurigo, kraurosis vulvæ, vegetations.

4. Urethral vascular caruncle.

5. Masturbation.

All these etiological factors may singly or in combination be responsible for pruritus vulvæ, and the secondary changes may so complicate and keep up the vicious circle of disorder that correct etiological diagnosis in many cases is a matter of considerable difficulty.

Treatment of pruritus vulvæ, local or constitutional, is determined by the etiological diagnosis (of individual cases). The fact that an almost un-

limited number of drugs for internal administration and local application has been recommended for control of it, is sufficient evidence that all of them may help, but none can cure. The extremely complex differential diagnosis of the affection readily explains this fact—they all may give symptomatic relief, but none will cure unless underlying etiological factors are singled out and eliminated. Differential treatment can be briefly outlined for two different diagnostic groups, thus:

1. The first group of essential pruritus so often associated with run down condition, calls for general tonic treatment and selective sedative treatment for the nervous system. The first can be effected through wholesome diet, sufficient rest, staying in the country, and administration of iron, quinine, strychnine, or the phosphates, and codliver oil.

2. Calls for avoiding physical or nervous overstrain, regulation of work, sleep, and recreation, elimination of all stimulants and excessively rich food or strong drinks, such as alcoholic beverages, strong coffee, tea, or cocoa, and the practice of hydrotherapy, and even psychotherapy in selected cases.

Internally, all strong or cumulative narcotics or hypnotics are to be avoided, and to be resorted to only in desperate cases, to tide the patient over until radical treatment can be determined upon.

Symptomatic relief can be obtained through various nervines of milder character, as bromides, chloral hydrate, tincture of cannabis indica, ten to thirty drops; tincture of gelsemium, ten to twenty drops; phenacetin and antipyrine are often efficient.

Locally, any soothing application is proper, dusting powders, lotions containing from one half to two per cent. phenol, one to four per cent. menthol, equal parts of camphor and chloral, in a five to ten per cent. solution, painting with two to five per cent. silver nitrate, cocaine, two to five per cent. (in severe cases only), dabbing with hot water, as well as radiant heat applications with the incandescent therapeutic lamp, give often relief; static electricity, high frequency currents, and x ray are also very efficient. Revulsion effects through sinapism or small blisters over the lower lumbar region may be tried.

In cases of pruritus dependent on constitutional causes, evidently all such affections as diabetes, icterus, nephritis, gout, etc., have to be treated. Pregnancy pruritus in extreme cases may warrant premature delivery. Symptomatic relief can be effected through measures mentioned above. As in all cases of vulvar pruritus, absolute cleanliness, bland diet, and liberal elimination are of paramount importance.

In cases of pruritus produced or kept up by irritative vaginal discharges, the first step is a treatment of underlying uterine or vaginal affections, symptomatically by cleansing, antiseptic, and astringent irrigations, the choice of which is big enough to be embarrassing. Most popular and commonly efficient are potassium permanganate, one to 4,000 up to one to 1,000; mercury bichloride, one to 10,000 up to one to 2,000; boric acid, one to 1,000; alum, one to 500; tannic acid, a one per cent. solution.

Vaginal tomponade and cervical plugs with dry

or medicated gauze are of great help to keep irritating discharges from chafed surfaces. In cases where decomposed or pus laden urine is a source of irritation, the affected part of the urinary tract has to be located and treated. Internal antiseptics, such as urotropin and salol, or sodium benzoate, are useful, and in extreme cases, temporary catheterization is necessary.

Cases due to animal parasites are perhaps the easiest to control of all. In scabies or pediculosis, mercurial gray ointment, Wilkinson ointment, beta-naphthol, four to eight per cent., in combination with balsam of Peru or balsam of styrax, or solution of mercury bichloride, one to 500 or 250, in very dilute acetic acid for loosening of the nits, are all very efficient. Ascarides are killed by washing parts with one to 2,000 bichloride, or one to 500 thymol.

Now of skin diseases of the vulva causing pruritus, the most common is eczema. The treatment of vulvar eczema will vary with the stage or the intensity of the process. In the beginning, erythema intertrigo or papular stage, dusting powders, soothing lotions, such as calamine lotion, or Burrow's solution (combination of four per cent. solution aluminum acetate and lead acetate), one tablespoonful to a glass of water, or bland ointments, will suffice; lotions are preferable to the ointments. In the vesicular and weeping stage, lotions should alternate with coating and protective ointments, the best type of which is Lassar paste, zinc oxide, powdered starch, of each twenty-five grammes, with petrolatum fifty grammes as base. Phenol, menthol, or cocaine can be incorporated. In all varieties, the parts should be separated by pledgets of cotton or gauze, and a T bandage applied. Lichen planus and prurigo are rare diseases and call for appropriate treatment. Kraurosis vulvæ is an expression of degenerative senile changes and admits of symptomatic relief only. Vegetations and urethral caruncle are to be cauterized or removed surgically. Masturbation should not be forgotten as a possible cause of pruritus, nor as a possible result of constant itching and irritation.

In conclusion, the importance of the psychic element in treatment of vulvar pruritus should be emphasized; hardly any other symptom is so subject to psychic control. On the other hand, hardly any other affection is so dependent in its development on control of its symptoms, i. e., itching and scratching. Appeal to the intelligence of the patient, together with symptomatic relief, and correct radical treatment will bring almost any case to favorable termination or at least to a tolerable condition.

(To be concluded.)

Therapeutical Notes.

Symptomatic Treatment of Influenza.—Le Gendre, in *Progrès médical* for February 4, 1911, advises that wherever thoracic symptoms in influenza are marked, dry or wet cupping, cold applications, and repeated counterirritations be diligently practised. In all instances stimulants to the nervous

system, such as camphorated oil and strychnine, preferably by hypodermic injection, should be given; coffee and alcoholic preparations may also be used. Analgetics should be administered in fractional doses only, and care taken not to exhaust all such remedies early in the disease, lest later, upon further complaint by the patient, the physician be left without means of giving relief. For obstinate pyrexia Le Gendre recommends subcutaneous injections of the basic formate of quinine. For detergent effects on the bronchial tubes, sodium benzoate, terpene hydrate, ammonium chloride, sodium bicarbonate, and balsam of tolu may be given in succession, according to the localization, abundance, and character of the secretions. Emetics and purgatives are inadvisable, though ipecac may sometimes be employed in the form of Dover's powder, in fractional doses.

Treatment of Aural Complications of Influenza.

—Mole (*Bristol Medico-Chirurgical Journal*) states that in nonsuppurative influenzal otitis media, relief is obtained by antiseptic sprays or irrigations to the nasopharynx, instillations of a few drops of warm carbolyzed glycerin in the meatus, and hot dry applications over the ear. A brisk aperient should also be given. Upon subsidence of the inflammation inflation of the middle ear should be practised.

In suppurative influenzal otitis media, a condition sudden in onset, with intense pain and deafness, a free incision of the tympanic membrane from top to bottom behind the handle of the malleus should be made when bulging appears. After incision the ear should be cleansed, dried, and packed down to the perforation with a strip of moist antiseptic gauze, as often as is necessary. Small spontaneous perforations must be enlarged by incision. Irrigations of warm boric acid lotion are advisable where the patient's friends have to carry out the treatment. Where healing is sluggish, instillations of boric acid, or of phenol in glycerin (one to 10) are employed after the ear has been cleansed and dried. After firm healing has taken place, a course of instillations through the Eustachian tube is desirable. Where evidences of healing fail to appear after three weeks of drainage, the mastoid antrum must be opened and drained and the tympanic cavity washed out by this route.

In deafness due to influenzal auditory neuritis or changes in the labyrinth, strychnine should be given.

Tuberculin and the Pulse Rate in Pulmonary Tuberculosis.—Roswell T. Pettit, in the *Therapeutic Gazette* for August, 1912, asserts that in a number of cases of tuberculosis with low grade fever—99° to 99.8° F.—and with persistently high and irregular pulse—above 100 a minute—he has noticed a comparatively rapid return of the pulse rate to normal after the administration of tubercle bacillus bouillon filtrate. Comparison of two series of cases, the one treated with tuberculin and the other not, clearly showed an effect on the pulse. The author believes, therefore, in the value of tuberculin in restoring the pulse temperature balance in tuberculosis.

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THE VALUE OF THE FEEBLE MINDED TO
THE COMMUNITY.

For the elimination of mentally defective stock and the consequent removal of the terrific burden which its presence lays upon society, there are four possible methods: First, infanticide as practised by the ancient Spartans who gave the unfortunate weakling no aid in his fight for existence and, as it were, aided Nature in the execution of her law that only the fit may survive; second, sterilization, which, allowing the individual to live in comfort, yet curtails him of the power to reproduce his kind; third, permanent custody in institutions with no special efforts at training, the whole object being to protect society with as little financial outlay as is compatible with decent treatment of the unfortunates; fourth and last, segregation in training schools with the object of utilizing for the benefit of society whatever ability the feeble minded may happen to possess.

The first plan would undoubtedly be the most quickly effective, but it is obviously not to be seriously entertained. In regard to sterilization, there is much to be said on both sides of the question. New York, New Jersey, Iowa, Connecticut, Nebraska, and Indiana have passed laws which, in

selected cases, make provision for vasectomy or castration, while Pennsylvania and California have failed to get such legislation upon the statute books only on account of vetoes by the respective governors. There are many who object to such drastic measures for sentimental, religious, or other reasons, and in several instances the constitutionality of the law has been called in question.

It must be granted that the advocates of vasectomy and castration have very little except theory to support them in their contention that no evil results can follow, for so far there are not sufficient data to justify an intelligent opinion as to the end effects of sterilizing operations upon either the individual himself or society at large. It can be safely said, therefore, that any legislative measure which provides this remedy for the elimination of defective stock should be regarded in the light of a scientific experiment rather than as a panacea.

From the standpoint of dollars and cents, segregation in institutions where bodily comforts only are looked after would be the most feasible measure, for it is extremely doubtful whether even the best conducted training school can ever be operated upon a self supporting basis. On both eugenic and economic grounds, therefore, segregation without the money outlay necessary for training could probably be easily justified. Davenport¹ has said, that "if this segregation were carried out thoroughly there is reason to anticipate such a reduction in defectiveness in fifteen or twenty years, as to relieve the State of the burden of further increasing its institutions, and in thirty years most of its properties, especially acquired to accommodate all the seriously defective, could be sold."

But there is a more enlightened viewpoint than either the purely commercial or coldly scientific aspect of the question. Indeed, sentimental reasons for segregation in training schools are in themselves justification of the policy. According to Professor Johnstone,² of the school at Vineland, New Jersey, these are threefold: First, the privilege which society should be granted to remove from public gaze the idiot and low grade imbeciles, who are, as a rule, extremely disagreeable or even loathsome in appearance; second, the inherent right of every child, whatever may be his mentality, to have such education as he is capable of receiving; third, the right of the normal members of the families of the feeble minded to live their lives unhampered by the worry and care which the presence of such an unfortunate constantly imposes upon them.

But even though training schools for idiot and

¹Charles B. Davenport: *Heredity in Relation to Eugenics*, p. 256. New York, 1911.

²E. R. Johnstone: Address delivered to the Summer Class for Physicians, Training School, Vineland, N. J., September 9, 1912.

feeble minded children should fail to establish their right to exist on sentimental grounds alone, there still remains a most potent argument in their favor. This is the research work upon the mental processes and their manner of development which the laboratories and workshops of such institutions render possible. It is chiefly by the intensive study of defective minds that the mental development of the normal can be fully appreciated, and it is largely through such study and research that we may hope to improve and finally perfect our system of education of the normal child.

Viewed in this light, the value to the community of the unfortunate classes is not solely the keeping alive of the virtues of charity and sympathy in the fortunate, but likewise to render an actual service in the advancement of learning.

PEDAGOGY AND MEDICINE.

The medical profession is rapidly abandoning the traditions of mystery handed down since the days of Paracelsus and is dealing with increasing frankness with the public in matters of sanitation, hygiene, and prophylaxis. Valuable as has been the work of the Association for the Prevention of Tuberculosis, the American Society of Moral and Sanitary Prophylaxis, and similar organizations, it appeals to the adult with fixed predilections and prejudices to be overcome and vicious habits which must be eradicated. Consequently their task is a difficult one compared with that of the teachers in the public schools, who have in their charge the rising generation. These children being in the plastic stage of development, subject to discipline and seeking instruction, offer the most profitable ground for the propagation of sound sanitary and hygienic ideas. If we can inculcate into the minds of children the necessity of a proper comprehension of the laws of hygiene and prophylaxis and bring about in them an habitual observance of those laws, we may hope to achieve what now seems an almost hopeless task. But to attain this end presupposes adequate knowledge of these laws and their consequences on the part of the teachers, and demands closer cooperation between the teachers and the medical school inspectors. David Spence Hill, of Tulane University, points out in a recent number of *Science* the need of practical cooperation between the schools of pedagogy and those of medicine in order better to fit the teachers for their duty as instructors in hygiene and sanitation and medical students for their future work as school inspectors.

A series of inquiries addressed to the various universities having medical schools and departments

of pedagogy, by Mr. Hill, brought out the fact that there was only in a very few universities any co-ordination of the work of the two departments, although several of the deans acknowledged its importance. In view of the growing conviction that many if not all of the backward and recalcitrant children owe their trouble to some physical cause, there is great need of proper training of the teacher that he may recognize the case as one calling for special medical attention.

On the other hand, as pointed out by Mr. Hill, many of the medical inspectors of schools come to their work with preliminary training insufficient to enable them to appreciate fully the pedagogic problems which must be borne in mind in enforcing their medical views. There does seem to be a very important field not covered in the schools of either pedagogy or medicine, and best covered, as suggested by Mr. Hill, by correlation of the work of both to such an extent that our professional teachers will have a sound and basic knowledge of physiology, hygiene, and sanitation, and our medical students, or at least a sufficient number of them to supply the medical inspectorship of schools, will have such a general knowledge of the principles of pedagogy as to enable them adequately to discharge the duties of school inspector without coming into conflict with the educational authorities.

THE WATERS OF THE HOT SPRINGS OF ARKANSAS.

There is a bill before Congress which is to come up for consideration in December, referring to an appropriation of the sum of \$50,000 to be used for the investigation of the physiological and therapeutical effects of the waters of the Hot Springs of Arkansas, at the same time directing the secretaries of the Treasury, of War, of the Navy and of the Agricultural Department to cooperate with the secretary of the Interior in such investigation. This bill should receive the united support of the medical profession. While the springs and spas of Europe are scientifically investigated and are very often under direct control and supervision of the government, hardly anything is done in our country in this way. Therefore we very often see patients and convalescents obliged to cross the Atlantic to receive benefit from treatment and after care at such baths, whence they return to their homes greatly relieved and often cured. Such persons could easily be kept in the United States where they would receive the same good results at less expense, if the spas were under scientific control. But, it is sad to state, such watering places are

mostly under private control, and quackery and unscientific exploitation go hand in hand. The waters of the Hot Springs of Arkansas have been known for a long time to possess great curative properties, but the physiological effects of these waters have never been scientifically and accurately determined, without which their rational use cannot be carried out. If, therefore, the proposed bill were enacted into law the appropriation would be well spent and great benefit would undoubtedly result for patients as well as for a worthy home industry.

TUBERCULOSIS AMONG THE JEWS.

The assertion has been frequently made, and apparently supported by statistics, that the Jews are less susceptible to tuberculosis than the people of any other race. Recently Sokolovsky has studied the records of ten thousand cases of tuberculosis among Christians and Jews in Russian Poland and has arrived at the conclusion the Jews are less susceptible to the disease, the proportion of morbidity being 35.48 per cent. among the Jews and 40.26 per cent. among Christians, or the relation of the mortality from tuberculosis to the general mortality of eight to ten per cent. among the former and eleven to thirteen per cent. among the latter. On the other hand, other diseases of the respiratory organs were found more frequently among the Jews. These observations are fully in accord with those made by various authors in New York, Berlin, London, and other centres of large Jewish populations.

A number of reasons have been advanced to account for this relative racial immunity. The comparative morality and decent family life among the Jews have been cited to explain the phenomenon. Those who believe in the causal relation of alcoholism to tuberculosis sought in the comparative temperance of the Jews for an adequate explanation. Others maintain that the centuries of ghetto life in cities have brought about a gradual immunization to a disease which is principally urban and which has its strongest foothold in congested districts. By a process of the survival of the fittest, the more susceptible have been gradually eliminated.

In a measure this last explanation is the correct one. Marasmus and intestinal tuberculosis are quite common among Jewish infants. Scrofula, or tuberculous adenitis, is another affection which is extremely common among Jewish children. It is also possible that tuberculous adenitis tends to immunize the individual against the graver form of tuberculosis, phthisis. It is this racial and individual immunity that accounts for the greater chronicity of pulmonary tuberculosis among the Jews, fibroid phthisis being a rather common form among them.

HEREDITY AND DEGENERACY.

Scholomovitch publishes, in the *Roussky Vrach* for August 18, 1912, the results of his investigations in 500 insane and 500 mentally sound persons, which investigations he undertook to determine whether degeneracy is any more frequent among the former than the latter. The conclusions are rather striking, showing as they do a confirmation of similar results obtained by Keller and Diem. The author found, for instance, that healthy antecedents were recorded in 40.2 per cent. of normal individuals and in 31.5 per cent. of the mentally unsound. The difference in the general hereditary burden amounted to 8.7 per cent. in favor of the normal. The direct transmission showed itself in a difference of ten per cent. In this connection it was noticed that in the direct transmission of degeneracy the mother is a more important factor than the father. Thus, while the transmission on the father's side was the same in the normal and the insane, that on the mother's showed a difference of 9.6 per cent. in favor of the normal. Referring to individual conditions, the author found that epilepsy occurred in 3.5 per cent. of the normal and in five per cent. of the insane, with a negative family history. Hereditary alcoholism occurred in thirty-eight per cent. of the normal and in 39.3 per cent. of the insane. Tuberculosis showed a slight difference of 1.5 per cent. in favor of the normal group. On the other hand, apoplexy and organic nervous diseases occurred three times as often among the normal. Stigmata of degeneration were found in ninety-three per cent. of the normal and in ninety-five per cent. of the insane. The author concludes that the generally accepted theory as to the hereditary transmission of degeneracy does not hold true. The rule, he maintains, is the leveling up of pathological hereditary abnormalities, the newer generation becoming more adapted to the struggle for existence than the parents. The normal condition, therefore, is not degeneration, but regeneration. The modern conception of eugenics is faulty, and the so called surgical prophylaxis of degeneracy is as repugnant as it is unsound. If the endogenous factors plays such a minor rôle in the production of degeneracy, greater attention should be paid to the exogenous factors, with a view of modifying the environmental influences.

HIPPOZOMOTHERAPY.

At the First International Congress of Comparative Pathology held at Paris, October 17 to 23, 1912, Barbier maintained concerning horseflesh (*Presse médicale*, November 2d) that of all meats it was richest in reconstituent principles. Besides, it is remarkably digestible and commends itself to the hygienist by its extreme purity from the microbiological and parasitological points of view, as well as from the toxicological, being rich in glycogen which is powerfully antitoxic; its sale also is rigidly supervised.

As the muscle juice represented the only truly active part of the raw meat, the therapeutical use of this juice, or hippozomotherapy, should replace the

meat itself. Extraction of the juice, however, demanded certain precautions, among which Barbier mentioned the necessity of the meat being fresh, being submitted to the press not more than two hours after slaughtering, and coming from perfectly healthy and thoroughly rested animals, and the juice being squeezed out with the greatest possible aseptic care.

LACK OF AMBULANCE SERVICE IN LONDON.

It is somewhat of a surprise to read in the *British Medical Journal* for November 9, 1912, that, outside of the "city" or that part of London about the Bank of England, there is no regular street ambulance service in the metropolis. Parliament has frequently discussed the matter, but owing to some conflict of authority among various city boards, so far without result. More than 400 persons were killed in London during 1911 by mechanically propelled vehicles, and many thousands were seriously injured; motor omnibuses were responsible for ninety-five fatal injuries and 1,690 nonfatal injuries. Trolley cars killed twenty-seven and injured 2,459 during the months of 1911.

ADDENDUM TO DR. PARKER SYMS'S COMMUNICATION ON GALLSTONES.

Dr. Parker Syms requests us to state that an accidental omission in his communication on Gallstones, in our issue for November 9th, somewhat altered the meaning he intended to convey. In line 7, page 936, after the word "viscid," there should be, it appears, a new paragraph, as follows:

The gallbladder should be preserved unless there is a distinct reason for its removal. Among such reasons are a permanent closure of the cystic duct with hydrops of the gallbladder; gangrene of the gallbladder; a gallbladder rendered useless by ulceration; a much thickened gallbladder suspected of cancer.

The next paragraph, beginning "Drainage is most important," then follows, and so on to the end.

Medical Law.

I. THE RIGHT TO PRACTISE MEDICINE AND SURGERY.

The legislature of the State of Vermont, in 1904, amended the medical act by repealing the provision that a person who "practises medicine, surgery, or midwifery, . . . and is not duly authorized by a certificate issued and recorded as provided," should, on conviction, pay a specified fine; and by enacting in its place a provision that a person who, "not being licensed as aforesaid, shall advertise or hold himself out to the public as a physician or surgeon in this State," should be fined as therein specified.

In the case of *State vs. Lindsay*, 84 Atlantic Reports 612, the Supreme Court of Vermont was asked to pass upon the constitutionality of this provision. The effect of this amendment is expressed by Mr. Justice Powers as follows:

It is thus seen that the offense expressly covered by the statute is complete when an unlicensed person advertises or holds himself out to the public as a physician or surgeon. Actual practice is not required to bring one within the penalized class. No attempt is made in the statute to further define or explain the offense. What one must do to amount to advertising or holding himself out as a physician or surgeon is not specified. But, whatever the other essential elements of the offense may be, it is clear that, without something which amounts to a representation on the part of the person charged that he is in fact a physician or surgeon, no offense is committed. So practising medicine without a license is now criminal only when it involves a representation that the person acting is a physician or surgeon.

This provision of the act was held by the court to be in no way in conflict with the constitution.

The Appellate Division of the Supreme Court of New York, Second Department, in the case of *Anderson vs. National Casualty Company*, 135, N. Y. Supp. 889, defined the term "regularly qualified physician" as including an osteopath.

In this case plaintiff held a policy entitling him to sick benefits in case of illness, but specifying that he should be attended by a "regularly qualified physician." He called in an osteopath. Mr. Justice Thomas, in considering the status of the osteopath, said:

The attendant was liable under the law of the State of New York (Public Health Law (Laws of 1909, c. 49, art. 8)); but thereby he is not permitted to administer drugs or to perform surgery with instruments. Thereby he became a doctor of osteopathy. This license places no other limitation upon his status as a physician or his service to persons in sickness. . . . So he was regularly licensed to attend the assured, when sick, to administer anything curative save drugs, and to do what a surgeon may do without instruments. The statute gave him the legal status of a physician, and that was what the policy contemplated. The policy required a person to attend the assured, licensed by the State to do so, for the cure of the disease. The term used is equivalent to one that the assured shall be attended by one authorized by the law to treat the sick. I find a definition adopted by the learned writers that a "physician is one who is versed in medical science, a branch of which is surgery, and a surgeon is one who treats bodily injuries and ills by manual operations and the use of surgical instruments and appliances." The osteopath can use no instruments or drugs, and would not, but he is licensed to treat the injured and ailing bodily under a statute that regulates the "practice of medicine."

II. PUBLIC HEALTH REGULATIONS.

The case of *Watts vs. City of Princeton*, 96 Northeastern Reports 658, was an action by a physician against a municipality for services rendered as a member of the board of health.

Under the statutes of Michigan it is provided that: "Such commissioners, except the secretary, shall each receive a salary, to be fixed by ordinance, not exceeding one hundred dollars per year." In this case no ordinance had been passed fixing any salary; the action was commenced on the theory that, no salary having been fixed, the plaintiff would be entitled to a reasonable compensation for his services.

The trial court gave judgment for defendant, from which plaintiff appealed to the Appellate Court. Mr. Justice Hottel, of that court, in passing upon the question presented to the court, said:

In none of the cases cited by appellant, nor in any that we have examined upon our own investigation of the case, do we find where any court has held that such city shall

be liable to one of its officers or appointees upon any of its boards upon an implied contract for services rendered as such officer, or member of such board, where the legislature in the creation of such officer or board expressly provided that the salary of such officer or member of such board should be fixed by an ordinance of the common council. On the other hand, we think the authorities upon the subject, especially those *supra*, cited and quoted from, are all to the effect that such officer or member of such board for his services as such is limited to the compensation fixed by such ordinance, and, until such ordinance is passed fixing such salary, he has no cause of action for such services which he can enforce in the courts.

The judgment of the court below was therefore affirmed.

X. THE PHYSICIAN AS WITNESS.

Frequently, when it becomes necessary to introduce testimony of a physician as to one's past general condition, the extent of knowledge necessary to qualify the witness to testify is a question of importance.

In the case of Standard Accident and Life Insurance Company vs. Wood, 82 Atlantic Reports 703, each testimony was given by a physician who, while he saw the party in question very frequently socially, rarely attended him professionally. In this case he testified that the party's general health was good. As to the competency of this testimony Mr. Justice Pearce, of the Court of Appeals of Maryland, said:

We think there was sufficient opportunity for observation upon which to found the opinion expressed. An analogous case is found in Jones vs. Collins, 94 Md. 413, where a physician who knew a testator well, but had never attended him, was allowed to give his opinion upon his mental capacity, without stating the facts upon which his opinion was based.

XI. PRIVILEGED COMMUNICATIONS.

In the case of Mortimer vs. Daub, 98 North-eastern Reports 445, the Supreme Court of Indiana was asked to reverse a judgment of \$1,000 for the plaintiff because the trial judge, of his own motion, instructed the jury that the law recognized the relation of physician and patient as confidential, and that, if the confidential privilege is claimed by the patient, the physician is not a competent witness to testify as to matters communicated to him as such by the patient in the course of his professional services rendered in such case, and that the fact that the physician is not called by plaintiff as a witness should not in any manner influence the verdict.

The supreme court declined to interfere with the judgment because of this charge.

News Items.

A Permanent Exhibit on Sanitation and Hygiene.—Surgeon General Rupert Blue, of the United States Public Health Service, is planning to establish a permanent exhibit on hygiene and sanitation in Washington, as he believes that such an exhibit would be of great service in educating the public in matters relating to hygiene and sanitation.

New Officers of the Medical Society of the County of New York.—At the one hundred and seventh annual meeting of this society, held on the evening of November 25th, the following officers were elected: Dr. Brooks H. Wells, president; Dr. John Van Doren Young, secretary, reelected; Dr. Charles H. Richardson, treasurer; Dr. David Bovard, Jr., Dr. Joseph B. Russell, and Dr. John J. MacPhee, censors.

Sale of Christmas Seals Begun.—Immediately after Thanksgiving Day the sale began of the 10,000,000 Red Cross Christmas seals, now in the hands of the nine hundred agents in New York State. By order of the postal authorities, the seals must be placed on the backs of letters and packages, to avoid confusion with the regular postage stamps.

Cases of Venereal Diseases to be Reported to Health Authorities in Michigan.—At the October 11th meeting of the Michigan State Board of Health syphilis and gonorrhea were placed on the list of diseases to be reported to health officers, and by the latter to the State Department of Health. Special blanks are being prepared for these reports, and the cases are to be reported by numbers and not by the name of the patients.

Medical Research Fund for Toronto University Medical School.—Announcement is made that a research fund of between twenty and fifty thousand dollars annually has been subscribed for the medical faculty of the University of Toronto, and it has been decided to devote a portion of this fund to research work in tuberculosis. Dr. A. MacPheeran, professor of medicine in the University, has been engaged for over a year in securing this fund.

Massachusetts Society of Examining Physicians.—At a meeting of this society, held Wednesday evening, November 20th, Dr. Francis D. Donoghue delivered an address on the Newer Methods of Treating Cancer. Other speakers were Dr. W. W. Conant, Dr. A. K. Stone, Dr. Timothy Leary, and Dr. T. C. Briggs. Officers were elected as follows: President, Dr. E. B. Lane; vice-presidents, Dr. E. M. Greene, Dr. Timothy Leary, and Dr. H. H. Hastings; secretary, Dr. J. H. Stephens; treasurer, Dr. John S. Phelps.

Southern Medical Association.—The sixth annual meeting of this association was held in Jacksonville, Fla., November 12th, 13th, and 14th, under the presidency of Dr. E. M. Jackson, of Miami, Fla. The following officers were elected to serve for the ensuing year: President, Dr. Frank A. Jones, of Memphis, Tenn.; first vice-president, Dr. Stuart McGuire, of Richmond, Va.; second vice-president, Dr. J. D. Love, of Jacksonville, Fla.; secretary and treasurer, Dr. Seale Harris, of Mobile, Ala. Lexington, Ky., was selected as the place for holding the next annual meeting.

Additions to the Faculty of Baltimore College of Physicians and Surgeons.—Announcement is made of the appointment of three full time instructors and associates in the surgical and medical departments of the College of Physicians and Surgeons, Baltimore, as follows: Dr. William B. Marbury, formerly resident surgeon of the Providence Hospital, Washington, instructor in surgical pathology and associate in operative surgery at Mercy Hospital; Dr. Charles B. Crawford, of New York, associate in clinical medicine; Dr. Baruch M. Edlavitch, formerly pathologist, University Hospital, Iowa State University, instructor and associate in pathology.

Medical Association of the Greater City of New York.—A special meeting of this association, under the direction of the chairman for the Borough of the Bronx, will be held at the Imperial, 360 Fulton street, Brooklyn, on Monday, December 2d, at 8.30 p. m. Dr. John P. McQuillin will read a paper on Abdominal Pain, which will be discussed by Dr. Earl H. Mayne, Dr. Joseph B. Koff, and Dr. Roderick Byington. How the Present Hospital Situation Affects the General Practitioner is the title of a paper to be presented by Dr. Thomas Dixon. The general discussion of the subject will be opened by Dr. John C. MacEvitt and Dr. A. T. Bristow. All members of the medical profession are invited to attend the meeting.

Congress on the Alcohol Problem.—The forty-second annual meeting of the American Society for the Study of Alcohol and Other Narcotics will be held in the Hotel Raleigh, Washington, D. C., December 10th and 11th. This society is composed of physicians, who are interested in the scientific study of alcoholism and drug taking, and the central purpose of this meeting will be to present and discuss the latest and most authoritative studies on alcoholism, inebriety, and drug taking. An extensive programme of excellent papers will be presented. The public are cordially invited. Dr. T. D. Crothers, of Hartford, Conn., secretary of the society, will send programmes upon request and will be glad to furnish information to all who are interested.

New Building for Hospital for Deformities and Joint Diseases.—Plans have been completed for the erection, at 41 and 43 East 123d Street, of a new building for the Hospital for Deformities and Joint Diseases. The plans provide for a six story and basement structure, with a stone and brick exterior, the top floor to contain an open amphitheatre, sterilizing rooms, complete x ray equipment, and photographic and medical laboratories. Two floors will be devoted to gymnasiums, and on other floors will be rooms for electric and plaster treatment. In the basement will be installed a completely equipped factory for the manufacture of shoes and surgical instruments.

Changes at Boston Dispensary.—The department of general surgery of the Boston Dispensary was reorganized at the monthly meeting of the board of managers, held on November 14th. The department, hereafter, will be under the direction of two chief surgeons, Dr. Benjamin Tenney and Dr. John Homans, each to be responsible for six months of the year. Dr. Frederic M. Briggs was appointed consultant surgeon, and Dr. Robert H. Vose, Dr. Theodore C. Beebe, Dr. Henry M. Chase, and Dr. Henry D. Lloyd were made assistants to the surgeons. The genito-urinary department was reorganized on the same plan. Dr. Paul Thorndike and Dr. Arthur L. Chute being appointed surgeons-in-charge.

New York State Factory Investigation Commission.—Public hearings of this commission will be held in the Common Council Chamber, New York city, during the first week in December as follows: December 2d, proposed bills for changes in the organization of the labor department; December 3d, proposed bakery bills; December 4th, proposed bills relating to fire hazard in existing factories; December 5th, home work in the tenements; December 6th, hours of labor for women, child labor, and proposed bills generally. These hearings, which will be held in the forenoon, at 10:30 o'clock, will not be limited to a consideration of the special matters set forth, but the commission will hear those interested on any of the matters that it has under consideration.

Aid Association of the Philadelphia County Medical Society.—At the annual meeting of this association, held on November 11th, officers were elected as follows: President, Dr. Roland G. Curtin; vice-president, Dr. Jacob R. Shellenberger; treasurer, Dr. John B. Turner; secretary, Dr. Lewis R. Adler, Jr. Directors (for three years), Dr. S. D. Risley, Dr. S. W. Morton, and Dr. Charles A. E. Codman; for two years, Dr. I. P. Strittmatter, Dr. William S. Wray, and Dr. William T. Hamilton; for one year, Dr. Oscar H. Allis, Dr. James M. Anders, and Dr. Richard A. Cleemann. The need of a home for destitute and aged physicians was discussed.

J. N. Adam Memorial Hospital Dedicated.—The new tuberculosis hospital, erected at Peryssburg, N. Y., as a memorial to the late J. N. Adam, former Mayor of Buffalo, and called the J. N. Adam Memorial Hospital, was dedicated with suitable ceremonies on November 12th. Mayor Fuhrmann presided and in his address paid a high tribute to the late Mayor Adam, who donated the site for the new building, and also to Dr. John H. Pryor, chairman of the board of trustees, by whose efforts, coupled with those of the other members of the commission, the hospital had been erected and equipped for \$15,000 less than the amount appropriated for the purpose by the city.

Annual Conference of Health Officers.—The annual conference of health officers of New York State will be held in Syracuse on December 4th, 5th, and 6th. Formal sessions will be held in the mornings only. On the morning of the first day of the conference, December 4th, there will be a symposium on the control of syphilis and gonorrhea, in which will participate Dr. J. N. Hurty, of Indianapolis, Dr. P. S. Schenck, of Norfolk, Va., Dr. Guy S. Kiefer, of Detroit, Mich., and Dr. John L. Hefron, of Syracuse. On Thursday morning there will be two sessions, and the subjects discussed will be the control of communicable diseases and how to effect improvement in rural hygiene. The topics for discussion at Friday morning's meeting will be the prevention of infant mortality, epidemic poliomyelitis, the health officer and the tuberculosis law, and the temporary care of the insane. The series of exhibits, which the State Department of Health prepared for the International Congress on Hygiene and Demography, at Washington, D. C., will be placed in the Assembly Hall, and will be open to the public daily. As an added attraction motion pictures will be shown dealing with public health topics.

National Housing Association.—The second national conference on housing will be held in Philadelphia, December 4th, 5th, and 6th, and the meeting gives promise of being even more successful than last year's meeting, when sixty-one cities were represented. An evidence of growth during the year is the interest which health officers have come to take in the housing problem, and it is now recognized that bad housing conditions are not confined to a few large cities, but may be found in small towns and villages, and even in the country. One of the most important discussions at the meeting will be on the relation between health departments and housing. Charles B. Bali, chief sanitary inspector of the Chicago Health Department, will present the subject, and the discussion will be opened by Dr. Charles J. Hastings, medical officer of Toronto, C. Hampson Jones, assistant health officer of Baltimore, Dr. James Roberts, medical health officer of Hamilton, Ontario, and Bernard J. Newman, secretary of the Philadelphia Housing Commission. Closely allied to the work of the health officer is that of the sanitary inspector, whose duty it is to teach the newly arrived immigrant something of the American standard of living, and one session of the conference will be devoted to a discussion of the subject. Constructive problems involved in the building of garden cities and suburbs, city planning, and such practical questions as the best type of workmen's houses, and how to finance small houses are included in the programme.

Associated Physicians of Montclair and Vicinity.—This association meets on the fourth Monday of each month from October to May at the Montclair Club. The following programme for the season 1912-1913 has been arranged: 1912, October 28. Some Studies in Obstetrics, by Dr. James Clifton Edgar, professor of Obstetrics, Cornell University. November 25. Role of Intestinal Toxins in Producing Surgical Conditions, by Dr. Robert T. Morris, of New York, visiting surgeon to the Post-Graduate Hospital. December 23. Early Interpretation and Treatment of the Commoner Psychoses, by Dr. Joseph Collins, physician to the Neurological Institute, New York. 1913, January 27. Dr. John B. Deaver, of Philadelphia, professor of Surgery, University of Pennsylvania. Subject announced later. February 24. Dr. L. E. La Fetra, of New York, attending physician, Bellevue Hospital. Subject announced later. March 24. Value of the X Ray as a Diagnostic Agent, with lantern slide demonstration, by Dr. William H. Diefenbach, professor of Electrotherapeutics and Hydrotherapeutics, New York Medical College and Hospital for Women. April 28. Conditions Simulating Appendicitis, by Dr. Elsworth Eliot, Jr., of New York, surgeon to the Presbyterian Hospital. May 26. Eye Symptoms and Conditions of Importance to the General Practitioner, by Dr. Royal S. Copeland, dean and professor of Ophthalmology, New York Homeopathic Medical College.

Personal.—Dr. John C. Berry, of Worcester, Mass., has been notified by the Japanese embassy, in Washington, that the imperial order of the sacred treasure of the third class has been conferred upon him by the Japanese emperor, in recognition of his services in behalf of Japan, notably his contribution toward the improvement of medical and sanitary organizations and of the system of prisons.

Dr. John F. Smith, of Salem, N. J., has been elected secretary-treasurer of the Salem County Medical Society, to fill the vacancy caused by the death of Dr. Henry Chavanne.

Dr. L. R. Ranck, of Milton, Pa., has been elected vice-president of the Alumni Association of the University of Pennsylvania in Northumberland, Union, Snyder, Montour, and Columbia counties.

Dr. A. Sherman Downs, president of the Saratoga Springs Medical Society, entertained the members of the society recently at a banquet.

Dr. K. H. Van Norman, for three years house surgeon at the Tuberculosis Hospital in Pittsburgh, Pa., has been elected an assistant superintendent of Johns Hopkins Hospital, Baltimore.

Dr. George C. Davis, of Milton, Pa., has been appointed to succeed his father as surgeon for the Pennsylvania Railroad Company at Milton.

Dr. Sidney Yankauer, of New York, was the guest of the Philadelphia Laryngological Society on the evening of November 10th at a dinner at the University Club. At a meeting which followed the dinner Doctor Yankauer read a paper on the Management of the Eustachian Tube in Chronic Aural Suppuration.

Pith of Progressive Literature.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

October 1, 1912.

1. HENKEL: Transperitoneal Cervical Cesarean Section.
2. MAYER: Meat Poisons.
3. SCHWARTZ: Hypocinetic and Dyscinetic Forms of Obstipation.
4. EICHELBERG: Organic Mental and Nervous Diseases after Accident.
5. DREYFUS: Origin, Prophylaxis, and Treatment of Neurorecidives.
6. STROSCHE: Treatment of Syphilis with Neosalvarsan.
7. LEHLE: Prophylaxis of Ophthalmia neonatorum.
8. HIRZ: Therapeutic Experiences with "Uzara."
9. RACHEM: Is Use of Potassium Chloride Tooth Paste Dangerous?
10. SCHLUDENDEL: Röntgen Diagnosis of Eventration diaphragm.
11. KLAUSNER: Characteristic Drug Rash after Pantopon.
12. NEUDORFER: Indirect Intestinal Ruptures in Perforating Gunshot Wounds.
13. RUBIN: Persistent Hemorrhagic Diathesis Cured by Injection of Dehydrated Blood.
14. ABERHALDEN: Addition to "Diagnosis of Pregnancy by Means of Optical Method and Dialysis."
15. BENARIO: Remarks on Frequency and Severity of Neurorecidives after Salvarsan.
16. HERGENHANN: Comparative Röntgen Instruments.
17. OLFF: Tropical Diseases and Causes Illustrated by Cinematograph.

October 8, 1912.

18. CZERNY: Nonoperative Treatment of Tumors.
19. SAENGER: Nervous Diseases in Pregnancy.
20. RICHTER: Bilateral Pneumogram in Diseases of Lungs and Pleuræ.
21. CLAUDIUS: Colorimetric Quantitative Albumin Determination.
22. KONJETZKY: Pathology and Etiology of So Called Teleangiectic Granuloma.
23. BORSCHERS: Total Enucleation of Tonsils.
24. MÜLLER: Surgical Treatment of Tropical Dysentery.
25. TORAND: Origin of Headache and Rational Treatment.
26. RUPPRECHT: Psychology of Youthful Trespassers.
27. KOHLER: Complete Number of Metacarpal Epiphyses, Infantile Myxedema.
28. SARASON: Fighting Tuberculosis by New Hygienic, Economically Practical Housing.
29. BECK: Iodostarin Roche.
30. STERN: Contagiousness of Warts.
31. SCHINDLER: Experiences with Joha.
32. DREYFUS: Origin, Prophylaxis, and Treatment of Neurorecidives. (To be continued.)
33. ESTEIN: Thomas Addison.

October 15, 1912.

14. GOTTLIEB and OGAWA: Resorption of Digitoxin from Digitalis Preparations and Its Relation to the Action and Side Action of Same (To be continued).
15. ALBRECHT: Diffuse Gonorrheal Peritonitis.
16. HELMANN: Action of Antistreptococcic Sera.
17. DONATH: Salvarsan in Treatment of Syphilitic and Metasyphilitic Diseases of Nervous System and Combined Application (To be continued).
18. FAYENT: Salvarsan.
19. HERZT: Medicinal Treatment of Tuberculosis.
20. HEILBRONN: Hypophysis Extract in Labor.
21. HOLMGREN: Blood Taking in Coagulation Experiments According to W. Schultz.
22. GALLI: Technique of Intravenous Injection.
23. LEVY: Technique of Radical Operation of Very Large Hernia after Sauerbruch.
24. SCHUMACHER: Operation of Decompression.
25. WEIL: Thyroid Gland Preparations for Sterility.
26. RUSSEN: Congenital Ulna Defects.
27. EGGLING: Anatomical Findings in a Well Known Case of Eventration diaphragmatica.
28. BEISELE: Casuistry of Benzol Vapor Poisoning.
29. JAKSCH: Functional Service of a Röntgen Apparatus for Deep Illumination.
30. DREYFUS: Origin, Prophylaxis, and Treatment of Neurorecidives (Conclusion).
31. REINHOLD: Luetic Diseases of Aorta.

October 22, 1912.

53. KÜSTER: Extraperitoneal Cesarean Section.
54. RIEDEL: Partial or Total Destruction of Ductus cysticus and choledochus by Stones.
55. PAHNDI: Diagnosis of Gallstones: Respiratory Organs and Cholecystitis.
56. SIMON: Side Actions of Neosalvarsan.
57. BUSSE and MERIAN: Death after Infusion of Neosalvarsan.
58. SZAMETZ: Salvarsan in Chorea minor.
59. KRETSCHMER: Röntgen Proof of Dietetic Influence on Peristalsis of Gut.
60. KOLB: New Blood Pressure Apparatus and Its Application at Bedside.
61. KAUSCH: Warning Concerning Tensile Strength of Catgut.
62. DÉRING: Pelvic Apparatus for Extension in Fractures of Legs.
63. ALTHOFF: Treatment of Peritonsitis.
64. RITSCHL: Simple Mechanical Device for Combating Epistaxis.
65. GOTTLIEB and OGAWA: Resorption of Digitoxin from Digitalis Preparations and Relation to Actions and Side Actions of Same (Conclusion).
66. DONATH: Salvarsan in Treatment of Syphilitic and Metasyphilitic Diseases of the Nervous System and Combined Administration (Conclusion).
67. KOELSCH: Reporting Occupational Diseases.
68. REINHOLD: Luetic Diseases of Aorta.

October 22, 1912.

68. SCHLITENHEIM: Formaldehyde Combinations of Uric Acid and Purin Bases, Their Application in Metabolism, and for Diagnostic Proof of Uric Acid in Blood.
69. MARTINI: Pure Cultures of Agitator of Granuloma venereum.
70. TSCHACHITTIN: Effect of Rays on Cells, Particularly on Cancer Cells and Chemical Imitation of Same.
71. SAATHOFF: Simple Method of Proving Fat in Stools.
72. REVE: Occurrence of Diphteria Cells in Lung.
73. JACOBS: Primary Polycythemia and Its Genesis.
74. GRIENAU: Leucosches Cured after Gynecological Treatment.
75. HIRSCHL: Local Anesthesia in Operation on Pharynx and Esophagus.
76. DRANDS: Death Due to Embolism after Injection of Bismuth Paste into an Empyema Fistula.
77. VULPIUS: Aluminum Orthopedic Casts.
78. LEHLE: Hematoma of Vulva.
79. SCHLÜCHTER: Hemiplegia in Early Stages of Syphilis.
80. FEHSENFELD: Noeske's Treatment of Venous Stasis.
81. STAUDENMAYR: Medicinal Treatment of Cancer.
82. STUMPE: Report on Smallpox Vaccination in Bavaria in 1911.
83. WOLFF-EISNAV: Clinical Significance of Body Protein Solutions in Hyperesthetic Manifestations.
84. BOSSELMANN and HERGENHANN: Comparative Experiments with Röntgen Apparatus.
85. REIDEL: Partial or Total Destruction of Ductus cysticus and choledochus by Stones.

3. **Hypocinetic and Dyscinetic Forms of Obstipation.**—Schwartz found that in the normal individual, preceding the regular daily evacuation, the Röntgen picture showed the contrast diet taken twenty-four hours previously spread over the whole colon. Most noticeable was a roundish, irregularly shaped mass, in size ranging from a fist to a child's head, occupying the rectum, the ampulla recti, rectum, and sigmoid, that is, the portion of the end gut supplied by the pelvic nerve. This mass plays an important part in the desire for passage and is called by the author *globus pelvicus*. Besides this *globus pelvicus* there were scattered over the whole length of the colon loose, fragmentary, contrasting masses, especially in the cecum, ascending and transverse colon. When taking pictures of those chronically constipated, the author found that they could be divided into two groups: 1. Those in whom forty-eight hours after ingestion of food, there was no formation of the *globus pelvicus* and in whom the fecal mass retained an abnormally large continuity. The colon had an abnormal length and an increased number of coils. 2. Those in whom the *globus pelvicus* was formed in forty-eight hours, but the column of fecal matter showed large abnormal segmentation on the one hand, and an increased retrograde displacement on the other. Chronic constipation does not show one single mechanism. Hypocinetic obstipation is characterized, röntgenetically, by absence of physiological separation of the fecal masses, delayed forcing of these into the end gut, sparse formation of the *globus pelvicus*, and fragmentary emptying. A frequent syndrome is the elongation of the colon. Dyscinetic obstipation is one in which the filling of the end gut and the formation of the *globus pelvicus* occur within normal time limits, but in which there is a pathological increase of the separating function or a retrograde impulse in the colon.

4. **Organic Mental and Nervous Diseases after Accident.**—Eichelberg asserts that there is a connection between accident and chronic organic disease of the central nervous system when the disease in question was not present before the accident, when the accident was a severe one, and when there a time relation existed between the beginning of the disease and the time of the accident.

7. **Prophylaxis of Ophthalmia neonatorum.** Lehle enumerates the wonderful discoveries leading to the control of ophthalmia neonatorum; in

1879 Neisser's discovery of the specific germ; in 1881 Crede's epoch making experiments in the preventive treatment of blenorhea by the instillation of two per cent. silver nitrate into the eyes. But its application has not proved without objections. Catarrhal inflammation occurs in a number of cases. In 1890 Krony tried one per cent. acetic silver instead of silver nitrate. Zweifel showed in 6,038 newly born that the latter has 0.23 per cent. morbidity against 0.62 per cent. with the use of silver nitrate. Von Herff experimented with argyrol, but on account of its inconstant silver nitrate content he soon turned to a new preparation, sophol. This is a combination of formaldehyde nucleic acid with silver. It is a yellowish white powder, very easily soluble in water; it is decomposed by light and must therefore be kept in colored bottles. Von Herff reports excellent results. Out of 2,900 babies treated with five per cent. sophol there was only one case of infection and that occurred in a child who had the cord replaced manually at the time of labor. The author tried this new remedy on a large series of cases and arrives at the following conclusions: 1. The silver nitrate treatment is historical as a prophylactic for specific eye infections. 2. Acetic silver is better than silver nitrate, but not as good as sophol. 3. Sophol is a sovereign remedy for ophthalmic blenorhea. The following attributes justify the preceding assertions: 1. Its bactericidal properties reach very close to the ideal zero per cent. 2. Its absolute painlessness and almost complete lack of irritable qualities. 3. Its safe application in the hands of the laity due to its harmlessness and the fact that it can be kept months without decomposition.

8. Therapeutic Experiences with "Uzara."—Hirz states the indications for the use of uzara as follows: 1. Diarrheas of different grades and causes. 2. Stomach pains and intestinal colic. 3. Dysmenorrhea, especially its influence on labor pains. In the author's opinion, great therapeutical advances in the use of uzara are possible, because pains and colic can be stopped without paralysis of the nerves and muscles.

19. Nervous Disease in Pregnancy.—Saenger, speaking from his varied experience, says that the most diverse mental disturbances may develop during pregnancy, from the simple slow depression to the pronounced catatonic type. Great caution should be exercised in giving a prognosis. The fact that a psychic disturbance in a previous pregnancy has had a favorable outcome does not justify the conclusion that a second or third time the same result will obtain. It is certain that many women would have been spared chronic insanity if an abortion had been induced in time. The author expresses the wish that this subject might be taken up by psychiatrists, neurologists, and obstetricians, reports collected, and more attention paid to this subject than has hitherto been the case.

63. Device for Combating Epistaxis.—R'ts hl describes a manipulation for checking epistaxis, first advocated by Nägel. It is based upon the stretching of the veins, nerves, and muscles of the neck. The action is due to the stimulation of the sympathetic nerve and the consequent vasoconstriction of the bloodvessels of the whole head.

Technically, the physician stands in front or behind the seated patient, the fingers are placed at the angle of the jaw and on the lateral aspects of the occiput. A steady upward traction is made, and the head at the same time tipped backward as far as possible. In one or two minutes the author has been able to stop even severe epistaxis.

64. Resorption of Digitoxin, Action, and Side Actions.—Gottlieb and Ogawa sum up their article as follows: 1. Digitoxin, the most active constituent of digitalis, is absorbed in the intestine and not in the stomach. Resorption takes place comparatively slowly, five to six hours being necessary for its completion. Stasis of the portal circulation delays the absorption. This accounts for the differences in absorption time of the different digitalis preparations. Digitoxin is more rapidly absorbed from digipuratum than from folia digitalis titrata. Nausea and vomiting may be due to local irritation in the stomach or to toxic resorptive action. 3. The longer the digitalis preparations remain in the stomach the more irritation they produce. Digipuratum in solution is the most rapidly absorbed, then comes powdered digipuratum in suspension. The infusion remains in the stomach a long time and is the quickest to cause vomiting.

65. Salvarsan in Syphilis and Metasyphilitic Diseases.—Donath experimented with the combined administration of salvarsan, iodine, and mercury and obtained noteworthy results in cerebral, cerebrospinal, and spinal lues, tabes, dementia paralytica, and paralysis.

WIENER KLINISCHE WOCHENSCHRIFT.

October 3, 1912.

1. HERING: Localization in Heart.
2. DANIELOPOLU: Diagnosis of Meningitides by the Taurocholo-sodium Reaction.
3. TORNAL: Circulation.
4. TSEIMAKIS and ZOGRAPIDES: Etiology and Therapy of Epilepsy.
5. BJALOKUR: Fever in Late Syphilis.
6. PURJESC and PERL: Occurrence of Typhoid Bacilli in the Mouths of Typhoid Patients.
7. SCHÜTTE: Gastric and Duodenal Ulcer.
8. BARON and JARSONY: Roentgen Diagnosis of Duodenal Ulcer and Other Duodenal Affections.
9. EISLER and KREUZFUCHS: Diagnostic Significance of Duodenal Stomach Motility.
10. GROSS: Physical Properties of Human Duodenal Secretions.
11. BONDI: Reflex Movements of Head in Cerebral Affections.
12. BARDACZKI: Occult Blood in Stools in Gastric Carcinoma.

October 10, 1912.

13. HERMANN and NEUMANN: Lipoids of Pregnancy and Their Excretion after Completed Pregnancy.
14. STEIN: Biological Differential Diagnosis of Leprosy and Tuberculosis.
15. CHIARI: Diseases of Submaxillary Salivary Gland.
16. BERNSTEIN: Case of Torsion Spasm.
17. BENEDEK: Treatment of Insomnia with Luminal.
18. KUMARIS: Small Gunshot Wounds.

October 24, 1912.

19. KASSOWITZ: Fact and Theory in Relation to Natural Sciences and Medicine.
20. FREUND and KAMINER: Chemistry of Sites of Predilection for Carcinoma.
21. JUCHIERO: Miotaxin Reaction and Pregnancy.
22. MANILOFF: Idiosyncrasy for Bromide and Quinine: Hyper-sensitive Manifestations.
23. POLLAK: Diagnosis of Anthrax Sepsis from Lumbar Puncture.
24. GEORGIULAS: Origin and Significance of Basophil Erythrocytic Granules.
25. HAUDEK: Radiological Diagnosis of Traumatic Diaphragmatic Hernia.

October 31, 1912.

26. HEITLER: Percussion of Heart.
27. BARANY: Relation of Function and Structure of Cerebellum in Man.
28. SZILY: Immune Therapy of Multiple Cutaneous Staphylococci Abscesses in Infants.
29. HOWMANN: Action of Bile Salts on Gonococci.
30. ANSCHERLICK: Hydronephrosis in Children.
31. KUNHELT: New Method of Incorporating Larger Emanation Groups.

1. Localization in the Heart.—Hering says that beside the central nervous system there is to-

day no internal organ in which pathological causes can be located with such certainty as the heart. The older clinical methods, the more recent physical advances, i. e., Röntgen rays, electrocardiograms, the anatomical discovery of the bundle of His, and Tawarash's and Keith-Flacksch's nodes all have contributed to this fact. The exocardiac nervous system of the organ must also be taken into account. The autonomous muscular system of the heart can produce paralysis or stimulation in this system promoting exosystolic influence of vagus stimulation. Atropine and vagus pressure experiment are utilized for ascertaining if the exocardiac nervous system is the seat of the primary disturbance.

3. Diagnosis of Circulation.—Tornai asserts that a palpable diastolic thrill is at times of importance in the diagnosis of mitral stenosis. A diastolic murmur is usually heard only at the apex, but by careful palpation a thrill can be felt at different areas at the same time and its direction determined. In exceptional cases of aortic insufficiency the diastolic thrill is obtained, but a differential diagnosis is easily made by other symptoms of aortic insufficiency, rapid pulse, roughened murmur over the carotids, etc. If in aortic insufficiency a systolic murmur is heard posteriorly at the level of the second or third vertebra, we must think of an accompanying aortic stenosis. The question whether a murmur is due to an organic lesion or simply to a relative aortic insufficiency is decided by the Tornai artificial diminution of blood pressure (tying off the extremities), since in this procedure a functional murmur disappears.

6. Typhoid Bacilli in Mouths of Typhoid Patients.—Purjesc and Perl were able to raise pure cultures of the typhoid bacilli from the tonsils and teeth of active typhoid sufferers in four out of seven cases. Furthermore, during convalescence until the eighth week, cultures from the tonsils were positive in twenty per cent. of the cases and from the teeth in fifty per cent. of the cases.

9. Duodenal Stomach Motility.—Eisler and Kreuzfuchs show that in all cases of primary and secondary duodenal affections, and in catarrhal icterus and diseases of the gallbladder there is present an abnormal stomach motility. In some cases of cholelithiasis the radiographs reveal a high position of the diaphragm and a diminution in the excursions of the right half of it. Of great diagnostic interest were two cases of duodenal stomach motility in pancreatic tumors.

10. Physical Properties of Human Duodenal Secretions.—Gross found that the conditions in the empty gastrointestinal tract are as follows: If the small sphere of the duodenal tube rests in the stomach a clear transparent and watery juice is obtained; in the region of the pylorus the secretion is scanty, viscid, gray in color, with weak acid or neutral reaction. In the duodenum the juice is ochre yellow, very turbid, and of decidedly acid reaction. Further down in the duodenum the juice is mixed with gall, which causes it to become dark brown and thick. In the jejunum it again changes its character. In color it resembles a light yellow wine, is turbid, neutral, or weakly acid in reaction. If food is taken into the mouth while the tube rests in the jejunum a considerable amount of clear duo-

denal juice appears immediately, a kind of "appetite juice."

14. Differential Diagnosis of Lepra and Tuberculosis.—Stein experimented on animals and found that tuberculous guineapigs react to an intraperitoneal injection of lepra bacilli in the same manner as to tubercle bacilli with the production of a copious, clear exudate characterized by lymphocytosis and leucopenia. It is not possible to produce sudden death in healthy animals by an intraperitoneal injection of lepra bacilli and by the exudate from a guineapig hyperesthetic to tuberculosis. An organic mixture of the antiform extract from lepromata does not contain any reactionary substance which injected intraperitoneally can sensitize a healthy guineapig to a subsequent otherwise inactive tuberculin injection.

ZENTRALBLATT FÜR CHIRURGIE.

October 26, 1912.

1. GELINSKY: After Treatment of Fractures of Patella with Total Rupture of Extensor Apparatus.
2. KLEINSCHMIDT: Transplantation of Bone from Tibia to Repair Defects in Skull.

November 2, 1912.

- E. PAYR: Securing the Suture in Pycloolithotomy by Pedicled Flap from Fibrous Capsule.

ZENTRALBLATT FÜR GYNÄKOLOGIE

October 5, 1912.

1. E. A. BJORKENHEIM: Primary Sarcoma of Small Intestine.
2. C. KOCH: Experiences in the Treatment of Postoperative Meteorism by Peristaltin and Physostigmin Injections.

October 12, 1912.

3. H. EYMER: X Ray in Obstetrical Diagnosis.
4. F. FROMME: Treatment of Amenorrhea.
5. O. BONDY: Pathological Significance of Nonhemolytic Streptococci.
6. G. EHRENBURG: Attempted Abortion in Nonpregnant Women.

October 19, 1912.

7. F. AHLFELD: Stimulation of Post Partum Uterus by Manual Compression.
8. G. WALCHER: Treatment of Eclampsia by Removal of Colostrum.
9. L. M. BOSSI: Pathogenesis and Treatment of Ootomacalia.
10. K. HEIL: Unusual Action of Hypophyseal Extract upon Gravid Uterus.

October 26, 1912.

11. F. DAELS: Treatment of Inoperative Malignant Tumors.
12. LICHTENSTEIN: Nonsignificance of von Winckel's Statement Concerning Eclampsia.
13. M. MALINOWSKY: Action of Pituitrin upon Uterine Contractions during Delivery.
14. F. THOMA: Attempted Abortion by Nonpregnant Women.

2. Treatment of Meteorism by Peristaltin and Physostigmin.—Koch considers the subcutaneous injection of peristaltin an unusually good tonic for the intestinal canal after abdominal operations. Physostigmin in doses of 0.5 mgm. has exerted even a better effect. Peristaltin is a glucoside, readily soluble in water, that is obtained from the shell of *Rhamnus purshiana* (Cascara sagrada).

3. X Ray in Obstetrical Diagnosis.—Eymer considers the x ray to be of particular value along two lines: To obtain a true idea of the shape of the pelvis, as well as the obtaining of the exact diameters; second, the position and relation of the fetus. By this method a fourth sure sign of pregnancy may be obtained, the presence on the x ray plate of portions of the fetus.

4. The Treatment of Amenorrhea.—Fromme reports favorable results in amenorrhea following the subcutaneous injection of extract of the hypophyseal gland.

8. The Treatment of Eclampsia by Removal of Colostrum.—Walcher calls attention to the belief that in eclampsia a portion of the toxic sub-

stance comes from the uterus and another part from the mammary gland. He reports eleven cases in which the colostrum was squeezed out by manual compression, with apparently successful results in several instances.

9. **Osteomalacia.**—Bossi reports in much detail a case of osteomalacia occurring in a married woman who had never been pregnant. He holds that the repeated congestions resulting from the sexual life were responsible, inasmuch as the condition improved during the periods when the patient was in the hospital. Of the methods of treatment, that in which adrenalin was used was the only one that gave favorable results.

12. **Von Winckel's Statement Concerning Eclampsia.**—Lichtenstein takes exception to von Winckel's statement and holds that the death of the fetus is able in no way to favor the prognosis of eclampsia in the mother.

13. **The Action of Pituitrin.**—Malinowsky believes that the use of pituitary extract in the earliest stages of the first period or when there is rigidity of the cervix should be a very cautious one, as cases of dangerous stricture have been reported.

CENTRALBLATT FÜR ALLGEMEINE PATHOLOGIE UND PATHOLOGISCHE ANATOMIE

October 13, 1912.

1. M. B. SCHMIDT: Amyloid Albuminous Calculi in Renal Pelvis.
 2. FRANCIS HARBIZT: Tuberculous Sclerosis of Brain Associated with Myxoliposarcoma of Kidney and Adenoma sebaceum of Skin.
- October 31, 1912.
3. L. W. SCHUBILAW: Pathology of Pancreas.
 4. N. W. STUCKLEY: Changes in Aorta of Rabbit Due to Feeding with Different Kinds of Fat.

JAHRBUCH FÜR KINDERHEILKUNDE.

October, 1912.

1. MAX KASSOWITZ: Rhachitis in Newborn.
2. P. ROHMER: New Experiments in Cardiac Death in Diphtheria.
3. MAX MASSINI: Tracheotomy and Diphtheria.
4. G. BRUCHER, W. GAERTGENS, and HANS VOGT: Bacteriology of Diseases of Respiratory Tract in Children.

ZEITSCHRIFT FÜR AUGENHEILKUNDE

October, 1912.

1. HUGO WOLFF: Centric Reflexless Microphthalmoscopy.
2. BIRCH-HIRSCHFELD: Blinding by Sunlight.
3. AUGUSTEIN: Examination of Color Sense.
4. MAX DALMER: Ophthalmia nodosa.

4. **Ophthalmia nodosa.**—Dalmer reports two cases in which this disease was caused by caterpillar hairs. In one the patient was struck in the eye by a twig of a tree, which probably had on it some of these hairs; in the other a black caterpillar was thrown into the face of a child.

BULLETIN DE L'ACADÉMIE DE MÉDECINE

October 13, 1912.

1. A. TRILLAT and GUÉNIOT: Influence of Chemical Composition of Air on Vitality of Microorganisms.

1. **Influence of Chemical Composition of the Air on Vitality of Microorganisms.**—Guéniot presents a report on the work of Trillat, who was able to demonstrate that air containing small amounts of substances set free in putrefactive processes tends distinctly to increase the vitality of a wide variety of pathogenic germs. Thus, air containing ammonia gas to the extent of one part in five million proved favorable to bacterial life, though to a less degree than amines of the fatty series, such as trimethylamine, and especially amylamine, and certain aromatic amines, allied to alkaloids. The same gases, dissolved in water, exert a similar influence, e. g., distilled water con-

taining one part in five million of a putrefactive gas and free of every trace of fixed albuminous matter can be inoculated with bacteria and give rise to abundant cultures. A characteristic feature of these environments favorable to bacterial life is their alkalinity, which is, however, extremely slight. Where the putrefactive gases are present in strong concentration, or act for a prolonged period, their effect is reversed, an antiseptic action being now manifested.

2. **Heliotherapy.**—Poncet and Leriche plead for a more general employment of heliotherapy by the practitioner, and review the results obtained by them in about three hundred cases. They point out the fact that this measure is not only of value when practised in elevated localities, but can render great service in low countries and in cities, provided the period of exposures to the sun's rays is prolonged. In dry, brisk mountain air, the sun's rays act especially well on deep tuberculous affections of bones, particularly where there are sinuses. All local involvements in patients with lung tuberculosis should likewise be treated at an altitude in preference to seaside resorts. On the other hand, glandular involvements, superficial tuberculous affections, scrofula, rhachitis, and osteoarticular deforming affections of childhood or adolescence are, in general, most benefited by heliotherapy at the seaside, though individual susceptibilities may in some instances modify this result. Heliotherapy should be practised gradually, the whole body, or if this is not possible the affected limb or part, being exposed at first only ten minutes. The head should be protected with a parasol or broad brimmed hat. For four or five days only one exposure, not exceeding fifteen minutes, should be given daily; then the period of time should be gradually increased, according to individual tolerance, up to three hours, morning and evening, from May to September. The prognosis varies with the degree of resulting skin pigmentation, though there are exceptions to this rule. In renal tuberculosis heliotherapy appears to be practically useless, but in vesical, prostatic, and epididymotesticular involvement it is a valuable adjunct to other treatment. It is in tuberculosis of the peritoneum, lymphatic glands, bones, and joints that the most striking results are obtained. In the first named affection, obstinate or recurring effusions are often overcome by heliotherapy, whether employed alone or after laparotomy. It should not be practised obviously where there is fever, the general condition is poor, and the effusion is just beginning; but this applies also to laparotomy. Where the operation is performed, the patient should be sent home as soon as possible, sometimes even before the removal of stitches, and required to spend most of the day with the abdomen exposed to the open air and sunlight. Combination of heliotherapy and laparotomy gives much more prompt and lasting results than the latter alone. Dry and early forms are quickly overcome by sunlight without operation. In tuberculous synovial inflammations, even where there are "rice bodies," cure is greatly assisted by sunlight. In joint tuberculosis, in general, recovery if not more rapid, is at least more certain and far superior as to functional results where exposure to sunlight is freely practised than

where immobilization is alone resorted to. Careful and continuous supervision of the case is, however, necessary. Other conditions benefited by heliotherapy include delayed bony union, compound fractures, obstinate osteomyelitis, sluggish ulcers, infected wounds, and various chronic skin affections, including old syphilitic and actinomycotic lesions.

LYON MÉDICAL.

October 20, 1912.

MAURICE: Pathogenesis of Exophthalmos in Basedow's Disease.

Pathogenesis of Exophthalmos in Basedow's Disease.—Maurice considers exophthalmos the criterion of true Basedow's disease. There are cases presenting thyroid enlargement, tachycardia, and nervousness in which the opposite condition, enophthalmos, is found, and while these have been regarded as cases of exophthalmic goitre in process of development, such a supposition is contrary to observed facts, the usual event being thyroid instability followed by cachexia of myxedematous type. Exophthalmos is a manifestation of excitation of the cervical sympathetic and is looked upon by the author as a consequence of adrenal overactivity, which he believes regularly occurs in the later stages of the disease. That thyroid overactivity alone does not induce exophthalmos is suggested by the results of experimental administration of large amounts of thyroid preparations by various observers, who found that while tachycardia was frequently induced, exophthalmos rarely occurred. Similar observations have been made in human subjects. Again, the slight elevation of blood pressure occurring at a certain time in Graves's disease is not accounted for by thyroid overactivity, since, as is well known, the thyroid secretion tends rather to lower the blood pressure. On the other hand, several observers have demonstrated an epinephrinemia in the blood of these cases, which would account for the rise of vascular tension, just as numerous observers hold it responsible for the high blood pressure in chronic nephritis, a condition in which exophthalmos also frequently occurs. The thyroid secretion does not, however, antagonize that of the adrenals; the former rather stimulates the latter and sensitizes the organism to the action of the epinephrine. By the combined activity of these two secretions in Graves's disease there arises a maximal degree of sympathetic excitation and simultaneously a depression of the central nervous system. The attentive clinician can always observe at a certain period in progressive Graves's disease a passage from the simple thyrotoxic to the adrenal phase, the advent of which is characterized by slowing of the pulse, rise of vascular tension, exophthalmos, and a neurasthenic state with anorexia and loss of physical and mental strength.

PRESSE MÉDICALE.

October 23, 1912.

F. LECÈNE: Perforated Gastric and Duodenal Ulcer Cured by Early Operation.

Early Operation in Perforated Gastric and Duodenal Ulcers.—Lecène reports four cases of perforated gastric and one of duodenal ulcer, with acute peritonitis, cured by operation within six to twenty hours after the onset of symptoms, and strongly pleads for the early transference of cases of this type to the surgeon by the medical prac-

titioner. The symptoms of beginning peritoneal reaction the result of perforation are salient and easily recognized—special stress being laid on rigidity—and even though the primary cause of the condition is sometimes obscure, no mistake is made in undertaking laparotomy, upon the early execution of which the patient's chances of recovery generally depend. An exception is, of course, to be made in cases of gonococcal pelvic peritonitis in women. In operating, care should be taken wholly to remove the cause of the peritonitis, i. e., not merely to suture the perforation and cover it with omentum, but, wherever possible, to excise the ulcer and suture the gastric wall in two layers, or else carefully to bury it under a thick seromuscular covering. In all cases operated in early, complementary gastroenterostomy is advisable as a precautionary measure. Where one is certain of perfect closure of the perforation the epigastric incision should be sutured in its entirety and a pelvic drain alone inserted, either through a suprapubic counterincision or, where the appendicular region has been opened, through the latter incision.

REVUE DE MÉDECINE.

September, 1912.

1. ALBERT ROBIN, NOEL FIESSINGER, and MATHIEU-PIERRE WEIL: Early and Late Hemorrhagic Syndromes in Typhoid Fever.
2. M. GARRETT and J. ANGELDA: Septicemia Due to Pneumobacillus of Friedländer; Bronchopneumonia, Joint Inflammations, Toxic Meningeal Reaction, and Meningitis; Bacillus Present in Sputum, Blood, Cerebrospinal Fluid, and Isolated from Blood and Cerebrospinal Fluid.
3. W. JANOWSKI: Practical Value of Clinical Methods of Examining Exudates and Transudates.
4. P. SAVY and C. GARDÈRE: Acute Endocarditis in Typhoid Fever.
5. PAUL THIÉRY: Unusual Manifestations of Serum Anaphylaxis: Neuritic Phenomena.

1. **Hemorrhagic Phenomena in Typhoid Fever.**—Robin, Fiessinger, and Weil describe hemorrhagic manifestations occurring late in the course of typhoid fever, which they believe should be clearly differentiated, both from the more frequent and fatal hemorrhagic tendency sometimes observed early in the disease, and from erythemas of infectious origin developing during convalescence. The late hemorrhagic syndrome is characterized by the occurrence of abdominal and thoracic purpura, epistaxis, buccal and intestinal hemorrhages and hematuria. It may or may not be accompanied by patches of erythema. The temperature remains about 38° C. and the facies betoken a rapidly progressing anemia, whereas in the late infectious erythema, often a grave complication, there are present hypothermia, peritoneal facies, and green diarrhea. The condition lasts five or six days, and recovery is frequent. The cause of the syndrome appears to reside in alterations in the blood, which becomes more fluid owing to a marked loss of organic colloids during the course of the fever, and is manifested in diminished blood density and sedimentation of the red corpuscles. The treatment consists in increasing the viscosity of the blood by the administration of gelatin in saline solution and in activating the secretion of leucocytic thromboses by intravenous or intramuscular injections of colloidal silver.

3. **Clinical Methods of Examining Exudates and Transudates.**—Janowski, after applying various procedures in the study of 248 exudates and transudates, concludes that none of the rapid clinical methods now in use permits of differentiating with certainty these two classes of fluids. The

statement frequently made that a specific gravity below 1.012 is characteristic of peritoneal transudates, below 1.015 of pleural transudates, and above 1.018 of exudates in general, is incorrect. The same is true of the assertion that the presence in a fluid of albumin exceeding four per cent. proves it to be an exudate.

Viscosity determinations, cryoscopy, and examination of cellular deposits are alike incapable of yielding the desired information, while the last named procedure does not, as hitherto maintained, permit of distinguishing between tuberculous and nontuberculous exudates. The least unreliable method is that of Rivalta, which consists in adding drop by drop the fluid under examination to 100 c. c. of water containing two drops of glacial acetic acid or twenty drops of vinegar; exudates yield a characteristic turbidity, which, however, occurs also with a small percentage of transudates. The test gave a clear, cut distinction between forty-one cases of peritoneal exudation of noncancerous and forty-five cases of cancerous origin, being negative in the latter series.

4. Acute Endocarditis in Typhoid Fever.—Savy and Gardère assert that this complication is rare, both in children and adults. The only definite sign of its presence is embolism, and this is itself an infrequent accompaniment. Endocarditis in typhoid is generally due to secondary infection from a focus of suppuration in the skin. Previous rheumatic or tuberculous valvular disease appears to be, as a rule, a necessary predisposing condition.

5. Serum Anaphylaxis with Neuritis.—Thaon reports a case in which a prophylactic injection of ten c. c. of antitetanic serum, following a similar injection given four years before, caused an immediate local urticarial and inflammatory reaction, and later (nine days after the injection) alternating attacks of general urticaria and cardiac weakness, lasting for two days, and accompanied by vomiting, diarrhea, oliguria, albuminuria, and rapid loss of strength. Although the condition seemed critical, quick recovery followed. Two weeks later there developed on the side of the injection paralysis of the serratus magnus and other muscles, with rapid wasting. The phenomena of serum intoxication and anaphylactic shock seemed to coexist in this case.

ROUSSKY VRATCH.

August 13, 1912.

1. G. A. VALASIEVSKI: Radical Operation for Hernia of Umbilicus and Linea alba.
2. P. S. SEMENOVSKI: Microscopical Investigation of Seminal Spots in Their Medicolegal Relation.
3. A. S. SCHUMAKOFF: Hereditary and Physical Evidence of the Degeneration in Insane and in Mentally Sound.
4. L. I. IASTOZHEMSKY: Parallel between Gunshot Wounds of Abdomen in War and Peace.
5. L. U. IASTOZHEMSKY: Fluctuations of Quantity of Nuclein Component During Digestion of Nucleoproteins by Gastric Juice, Depending on Different Conditions.
6. A. I. KATZ: The Reaction of Septicemia to Rubeola Course with Normal Temperature.
7. A. O. MEDVEDENSKI: Further Investigation of Changes in Tuberculin Reaction of von Pirquet.
8. B. E. ORECHKIN: Farinaud's Conjunctivitis.
9. I. K. DREYER: Pernicious Nephritis of Rokitnik.
10. G. M. WELSH: The Case of Hemiparesis, Ontario, Canada.

2. The Detection of Spermatozoa.—Semenovskiy investigated the various methods suggested for staining spermatozoa in recent and old seminal stains, and found that the method suggested by Stokis is the most accurate. The method is as follows: From the suspected spot a thread, three to four mm. in length, is removed and immersed in a

solution of erythrosin in ammonia (one to 200) for two seconds. It is then transferred with a drop of distilled water on a slide, carefully teased with two needles, covered with a cover glass, and examined under the microscope. The heads of the spermatozoa are found to be colored a bright red in a colorless field. The tails are not stained, but may be seen by darkening the field. The author has obtained very satisfactory results with specimens about two years old, although in the older specimens the heads of the spermatozoa are somewhat more difficult to stain and are not so distinct. This, however, is not such a serious drawback, inasmuch as in medicolegal investigations the seminal spots are more or less recent. Barring this and the fact that the tails are not stained, also that the stained specimen cannot be preserved permanently, all minor defects, the method leaves nothing to be desired.

3. Heredity and Degeneracy.—See editorial article, p. 1133.

4. Gunshot Wounds of the Abdomen in War and Peace.—Iankovsky points out the marked difference in the course of gunshot wounds of the abdomen received in war and in peace. Thus, while the former run a favorable course and but rarely require surgical intervention, the latter are almost always septic and frequently fatal. This difference he explains by the fact that during war the wound is inflicted by a rifle shot from a distance, the bullet penetrating intestines which are generally free from food. On the other hand, in civil life, the wounds are made by a revolver at a short distance, and the gastrointestinal tract is full of products of digestion. He also notes the fact that during a battle the injured either die on the field or, when brought to the hospital a few days later, are already free from shock and show a localized peritonitis, thus influencing favorably further progress. The author attaches practical importance to the advice to limit the quantity of fluids during a battle and abstain from drinking water for a short time after being wounded in the abdomen.

5. Nucleins.—Iastozhemsky determined the nuclein component of myosin and myostromin subjected to artificial digestion under different conditions. He found that nuclein component is not constant, and this variability he ascribes either to the reverse action of pepsin or the presence of two fermentations. First, there is hydration of the albumin and then dehydration. The intensity of the process depends on the temperature and the degree of concentration of the albumin.

6. Septic Infection without Fever.—Katz reports an obscure case of uterine infection following a four months' miscarriage. The only indication of infection was a purulent discharge from the uterine cavity. Following curettage with a dull curette a few days later, the urine which contained previously an admixture of blood became purulent. Otherwise, the patient's condition remained satisfactory. The temperature and pulse were normal. About five days later symptoms of uremia developed and the patient died. Bacteriological examination of the blood showed a streptococcus. In view of these findings, the author asks whether puerperal septicemia may run a fatal course without the slightest elevation of temperature.

7. Von Pirquet Reaction.—Michajlovskaja employed the following modification of the von Pirquet tuberculin test: The outer surface of the thigh was cleaned with ether and various dilutions of old tuberculin were deposited downward by means of a capillary pipette: 1. A drop of a solution of one part of five per cent. carbolic acid glycerin and two parts of normal saline, as control; 2, one drop of one per cent. solution of tuberculin; 3, five per cent.; 4, ten per cent.; 5, fifteen per cent.; 6, twenty per cent.; 7, twenty-five per cent.; 8, undiluted tuberculin. The skin over the deposits was slightly scarified, and in one to three minutes the excess was wiped off from above downward. The results in 164 cases showed that the majority of tuberculous patients gave the reaction with the higher dilutions (one to ten), while the non-tuberculous as a rule failed to react. With the pure tuberculin fifty-two per cent. of nontuberculous individuals reacted.

9. Neuralgia of the Rectum.—Dritsaki reports a case of typical primary neuralgia of the rectum in a boy, eighteen years of age. The only treatment that gave permanent relief was warm sitz baths.

10. Hemorrhagic Gastric Catarrh.—Wolpjan reports a case of erosive hemorrhagic catarrh in a man, thirty-five years of age. The patient presented overacidity with the presence of blood and mucus in the gastric contents. In view of the presence of mucus and the absence of pain in the epigastric region, ulcer was excluded. Treatment with lavage, followed by irrigation with silver nitrate solution, brought about a complete cure.

BRITISH MEDICAL JOURNAL.

November 9, 1912.

S. FLEXNER: Recent Advances in Science in Relation to Practical Medicine.

D. B. LEES: Diagnosis and Treatment of Incipient Pulmonary Tuberculosis.

1. Recent Advances in Science.—Flexner here brings together the numerous observations made upon poliomyelitis by himself and others. Stress is laid upon the part played by the nasopharyngeal mucosa as portal of both entry and of exit for the virus. He also emphasizes the fact that the virus seems to follow along the nerve sheaths in most instances, but that later it can be found in the circulation blood by animal inoculation experiments. The mode of spread of the disease has not been definitely determined, and almost all the different, well known ways have been suggested, many with considerable degree of plausibility. He finally mentions the observations thus far made upon the curative powers of hexamethylenamine in some cases of the experimental disease.

2. Incipient Pulmonary Tuberculosis.—Lees goes into considerable detail in describing the diagnosis of the earliest stages of involvement of the lungs, and attaches greatest importance to the discovery of six small areas of dullness, with or without impaired ventilation. These areas lie, three on each side, one in the inner end of the first intercostal space, and frequently at the outer end of the same, he second at the inner end of each suprascapular ossa, and the third at the base of the spine of the capula. That is, the three points on each side mark the apices of the lobes of the lungs. There are fre-

quently many other definitely arranged areas of dullness, corresponding to the terminations of the small bronchi. The finding of any of these areas takes some practice and is possible by the use of very light percussion only with the placing of the patient in a position of comfort and complete muscular relaxation. This position for the examination of the front of the chest is one in which the patient reclines, lying on his back. For the back of the chest the patient should sit bent slightly forward. When one has found the six dull areas these should be accurately measured in terms of finger breadths, as this is accurate and constant for the same observer and does not frighten the patient as would the use of the tape. The exact measurement of each should be carefully recorded. These dull areas, together with any of the general clinical symptoms of the disease, are quite sufficient evidence for the positive diagnosis of incipient tuberculosis, even in the absence of bacilli in the sputum, and in the face of a negative x ray plate. At this very early stage the disease is the most curable. The method for cure should be inexpensive and preferably one which can be carried out at home. Lees has employed antiseptic inhalations for a number of years and has had the most excellent results. He uses the following combination: Creosote, phenol, of each two drachms; tincture of iodine, one drachm; spirit of ether, one drachm; spirit of chloroform, two drachms. Six or eight drops of this solution is put on the felt of a Yeo inhaler at once, and should be renewed every hour during the day and once or twice at night if the patient awakens. The method of the inhalation treatment may be summarized as follows: 1. The inhalation must be continuous, the inhaler being worn day and night without removal except for meals; 2, rest in bed is essential in the beginning of the treatment; 3, proper treatment of digestive disturbances, anorexia, diarrhea, or constipation must be carried out by the use of the appropriate drugs; 4, there must be a sufficiency of easily digested food, and malted milk dissolved in scalded fresh milk is excellent to be taken after each of the four regular meals; 5, careful disinfection of the mouth; 6, absolute interdiction of smoking. In a series of seventy cases, some moderately advanced, Lees has obtained forty-eight complete recoveries, three probably complete, ten benefited but not completely recovered, seven deaths, and two cases not heard from.

LANCET.

November 9, 1912.

1. S. FLEXNER: Problems in Infection and Its Control.
2. D. B. LEES: Diagnosis and Treatment of Incipient Pulmonary Tuberculosis.
3. H. PUESSEN: Treatment of Umbilical Catarrh.
4. E. D. TELFORD: Hemihypertrophy of Body with Nodules and Varicose Veins.
5. E. A. ROSS: Meningitis Due to Bacillus of Proteus Group.
6. J. H. CRAWFORD: Pneumococcal Meningitis.
7. W. L. GORDON: Pancreatitis with Jaundice in Infectious Diseases.
8. W. A. CAMPBELL: Fracture of Carpal Scaphoid with Median Nerve Involvement.

4. Hemihypertrophy.—Telford reports the case of a girl of seven years whose right side was noticeably larger than the left throughout her entire body, except as to face and head, in which there was but slight disproportion. Associated with the unilateral hypertrophy there was a nevus condition of a large area of the skin on the hypertrophied

side. This was sharply limited by the median line and involved the trunk only. The nevus was a typical port wine stain. In addition to this there were a number of small patches of very small varicose venules scattered over the abdomen and front of the thigh. Telford reviews the literature of this rare combination of conditions and finds that the association of local hypertrophy, nevus, and varicose veins is a definite one. The nevus in these cases is congenital, as is also the hypertrophy.

5. Meningitis Due to Proteus.—Ross's patient was only nine months old and presented no unusual symptoms of meningitis, but the fluid which was obtained by lumbar puncture contained pus and yielded a culture of *Bacillus proteus*. That this was the causative agent of the meningitis seems certain from the fact that it was present in pure culture and the patient's serum showed some power of agglutinating the bacilli.

6. Pneumococcal Meningitis.—Cumming gave his patient ten injections of antipneumococcus serum, the first four of 3.5 c. c., the rest of seven c. c. each. The cultures from the spinal fluid remained infected with a pure strain of pneumococci for some time after the last injection, but all of the symptoms rapidly cleared up and it was thought that the organisms were no longer virulent, at least not for the patient. This was confirmed by the ultimate, complete, and permanent recovery.

7. Pancreatitis with Jaundice.—Goldie gives abbreviated case histories of four children, ill with scarlet fever, in whom there developed a transient jaundice associated with swelling, tenderness and local pain in the region of the head of the pancreas. The stools were clay colored during the attack in each case. The tenderness and swelling were thought to be due to an inflammation of the head of the pancreas, and this, in turn, was the cause of the obstructive jaundice.

8. Fracture of the Carpal Scaphoid.—Campbell had three patients, in each of whom there was a fracture of the carpal scaphoid with secondary injury to the median nerve as shown by localized anesthesia. In two of the patients the history of the accident was clear and indicated that the injury had resulted from a severe bending backward of the hand upon the forearm. This is believed to have caused the damage to the median nerve through stretching.

BOSTON MEDICAL AND SURGICAL JOURNAL

November 14, 1912.

1. E. W. TAYLOR: Neurological Aspects of Injuries to Cranium and Spinal Column.
2. JOHN HOMANS: Surgical Treatment of Head Injuries Affecting Brain.
3. JOHN T. BOTTOMLEY: Surgical Treatment of Injuries of Spinal Column Affecting Cord.
4. WILLIAM J. MCGILVER: New Device for Safe and Certain Administration of Salvarsan.
5. HARRY W. GOODELL: Clinical Anatomy of Hands.

1, 2, and 3. Traumatism of the Cranium and Spinal Column.—Taylor gives the following practical conclusions from a study of head injuries. The outcome of a blow on the head is not to be estimated by the extent of manifest brain injury. Fracture of the skull is not in itself of grave import. Immediate prognosis is to be determined largely by the condition of consciousness; if the patient holds his own or improves in this respect, the outcome as regards life is in general favorable;

if the coma deepens, the prognosis must be considered grave. Focal symptoms indicating laceration are not necessarily serious complications; unless the damage to the brain is extensive, such focal signs are apt to improve or wholly disappear. The possibility of late epilepsy and more or less permanent mental symptoms of neurotic states should always be considered. Rest is the first essential of treatment. Surgical intervention should be practised with conservatism. With regard to traumatic injuries of the cord, he says: Hemorrhage external to the cord is unusual and need not be seriously considered in deciding upon operation; concussion of the cord without definite microscopic lesions is a possibility; the damage to the cord is immediately following the injury; delay in operation is advisable; operation is unavailing when signs of complete transverse lesion persist; laminectomy may help toward restoration of the functions of a partially damaged cord.—Homans says with regard to opening the skull that unless there is pressure to be relieved, hemorrhages to be stopped, or fluid to be drained off, there is nothing to be gained by operation. In properly selected cases the following results are to be expected: 1. An edematous, swollen brain is given sufficient room so that it is not compressed; 2, blood clot from ruptured meningeal vessels is removed, and hemorrhage is stopped; 3, where concussion and laceration exist together the brain is not only given more room, but blood and cerebrospinal fluid, now no longer properly disposed of, may be drained away; 4, recovery in all kinds of cases is tremendously hastened, and there is some reason to believe that many of the late neuroses, epilepsy, or other mental defects are done away with.—Bottomley points out that, while grave injuries of the spine are relatively uncommon, the treatment of such injuries has not been confined to a few surgeons, but has been almost of necessity in the hands of many, so that there is probably no man who has had sufficient personal experience to speak *ex cathedra* on the question of proper treatment. This results in great divergence of opinion in regard to operation. He therefore presents the gist of surgical opinion at the present time.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

November 16, 1912.

1. JOHN B. ROBERTS: Recent Advances in Plastic Surgery of Bones.
2. G. J. HAGENS: Obstetrics in General Practice.
3. J. WALTER VAUGHAN: Blood Changes Caused by Hypodermic Administration of Cancer Proteid.
4. G. E. FAHLER: Adhesions and Constrictions of Bowel; Demonstration and Clinical Significance.
5. EDWARD B. ANGELL: Study of Urine in Nervousness.
6. ARTHUR C. BRUSH: Convulsive Seizures Associated with Postmenstrual Gastrointestinal Disorders.
7. JUAN GUTIERREZ: Bubonic Plague in Havana.
8. EDWIN BEER: Treatment of Papillary Tumors of Urinary Bladder with High Frequency Current (Oudin).
9. R. F. O'NEILL: Cancer of Bladder.
10. E. S. LADD: Results in Treatment of Tumors of Urinary Bladder.
11. PRYTON ROUS, JAMES B. MURPHY, and W. H. TYLER: Filterable Agent Cause of Second Chicken Typhus, Osteochondrosarcoma.
12. J. E. POTTINGER: Macrophagocytes in Sputum of Patient with Chronic Hemoptysis.
13. DAVID L. MALT: Fatal Hemorrhage from Small Branch of Vasa Saphena parva.
3. Blood Changes Caused by the Hypodermic Administration of the Cancer Proteid.—See this JOURNAL for June 8th, page 1210.
4. Adhesions and Constrictions of the Bowel, Their Demonstration and Significance.—Fahler

remarks that these constrictions may be spasmodic, or due to new growths, or adhesions, kinks, twists, the pressure effects of tumors, or an excessively long sigmoid flexure. These constrictions may be shown by the x ray, and the amount of interference with normal functions estimated. The effects vary, being influenced by the location and extent of the lesion. These effects may vary from moderate constipation to complete obstruction, and may be spasmodic (intermittent) or continuous in character. Daland, in the discussion of this paper, emphasized the value of the skiagraph in the detection of the presence of this condition and the relations of the parts. In most instances partial or complete constriction of the colon can be demonstrated by the use of the bismuth meal and the x ray apparatus; in the lower bowel a colonic injection of bismuth pap is used. This method of diagnosis entails much work and expense and takes considerable time. A larger experience is required by the röntgenologist, both in taking the skiagraphs and interpreting them. Bassler remarked incidentally that the ascending colon starts below in front on the right side and works around to the back; the transverse colon starts in the right back, runs around toward the front, under the edges of the ribs to the rear on the left side; coming forward the descending colon ends in the sigmoid in front, then goes again to the rear to the exit; the colon is therefore in front at three points. White observed that false interpretation of the plates is easy; the method is expensive and takes much time, but it is superior to any diagnostic method before used, and should be employed in all difficult cases and in those which have not shown relief of symptoms. Pfahler, in closing, acknowledged the great expenditure of time and money in this method. Its use is not necessary in all cases; but in those which are obscure it is invaluable.

5. **Study of the Urine in Nervousness.**—Angell is convinced that the simple urinary test suggested by him has a definite value in the physical examination of patients in all cases of nervousness not due to organic disease. In testing urines with nitric acid he frequently noticed a dark pigment ring in place of the well known white ring, known as Heller's albumin ring. This pigment ring, varying from a dark brown to a bright red color, is formed at the point of contact between the urine and the nitric acid. When the color is pronounced it is very distinct and becomes of definite value as a laboratory aid in diagnosis. This pigment ring is probably due to the oxidation by the nitric acid of some of the aromatic constituents of the urine through disintegration of the albumins. It has been confounded with indicanuria, but is an entirely different reaction. Indican may be present in conjunction with this reaction, but is usually absent. The same is true of the biliary reaction. A similar color ring, even more pronounced, is seen in the urine of patients taking potassium iodide, but this reaction is so characteristic as to be easily differentiated from the color ring under consideration. The writer has also noticed a marked color ring in the urine of patients with exophthalmic goitre, possibly indicating a relationship between the perversion of the thyroid secretion and the dis-

turbance in metabolism. Uric acid has no influence in causing this pigment ring. This reaction is due to disturbed metabolism, particularly the protein, and its presence is not pathognomonic of nervousness. It is always present in febrile urines associated with excessive muscular waste, in so called biliousness, in all cases where there is perverted nitrogen metabolism, and in the urine of those who overindulge in protein foods. A correction of the dietary will cause its disappearance or reduce it to the normal reaction—a faint yellowish color. This pigment ring is an indication of toxemia, due to autoinfection, intestinal putrefaction, or to sub-oxidation of the nitrogen end products of metabolism. Whatever its cause, this pigment ring has always been found in the urine in all nervous cases. A proper diet with increased renal elimination causes the disappearance of the reaction and of the nervousness.

MEDICAL RECORD.

November 16, 1912.

1. J. RIDDLE GOFFE: Operation for Extreme Cases of Proctodentia, with Rectocele and Cystocele, Based on Anatomical, Physiological, and Dynamic Principles.
2. EDWARD E. CORNWALL: Some Practical Points in Interpretation and Management of High Blood Pressure.
3. W. SOHMER BRYANT: Modified Radical Mastoid Operation for Cure of Otitis media purulenta chronica.
4. JOHN S. KIRKENDALL and CLIFFORD P. FITCH: Parinaud's Conjunctivitis.
5. HOMER E. SMITH: X Ray Therapy.
6. L. BERGEN ODGEN: Significance of Some Urinary Constituents.
7. L. MILLER KAHN: Congenital Stricture of Ureter, Producing Pyonephrosis; Nephrectomy.
8. HENRY H. M. LYLE: Poisoning by Scarlet Red.
9. LOUISAS H. SEAVARI: Pregnant Woman, Tuberculosis, and Sarcin.

1. **An Operation for Extreme Cases of Proctodentia, with Rectocele and Cystocele.**—Goffe affirms that the dynamics of the abdominal cavity are not restricted to hydraulics, that we must follow the ramifications of pressure as applied upon any portion of the surface of the cavities guided by the laws of reflection and deflection, of transmission through vital tissue, and all modified by psychological action. In determining the method of operation, two classes of cases are usually named, those in which the patients are in the childbearing period and those in which the menopause has been passed. The writer describes the technique of operation for each of these classes, which restores with accuracy the normal anatomical arrangement. In the first class the trigonum of the bladder is spread out and attached to the anterior face of the uterus and broad ligaments by carrying the base of the bladder up and stitching it at three points, at each cornu and in the median line at the centre of the anterior face of the uterus. The utrovvesical peritoneal fo'd is restored, as well as "the hinges" on which the bladder moves while receiving and discharging the urine. To restore the floor of the pelvis he isolates the levator ani muscles and stitches them together with buried sutures. In the second class he follows the plan already described, and unless there is positive objection on the patient's part the uterus is removed per vaginam, and the broad ligaments are stitched across the pelvis from the infundibulopelvic and round ligaments down to the cardinal ligaments. Where there is an extreme prolapse of the rectum Goffe strips the vaginal mucous membrane from the anterior wall of the rectum, from the line of the peritoneal covering down to the fourchette, then plicating the wall of the rectum

with buried catgut sutures passed up and down in the line of its longitudinal axis, and using two or three lines of sutures, if necessary, to take in all the slack.

4. **Parinaud's Conjunctivitis.**—Kirkendall and Fitch call attention to this rare form of conjunctivitis, which is probably infectious, ushered in with fever and chills, accompanied by an enlargement of the preauricular and sublingual glands, and of animal origin. Although granulations are an early feature of this disease, characteristic yellowish vegetations appear later, which are at first semi-transparent, but later become opaque and attain the size of a large pinhead. Small yellowish granules, suggestive of conjunctival tuberculosis, appear between these granulations in the retrotarsal fold, on the tarsus or the globe. The cornea is without lesions. Although mucous secretions and deposits of fibrin are formed no suppuration occurs. The lids become tumefied and hard to the touch, feeling as though chalazias was present. Suppuration of the glands is occasionally noticed. The disease lasts from six to eight weeks, and usually affects one eye only. Parinaud's disease may occur at any time in this country; the etiology is yet undetermined; the disease responds readily to treatment, complete recovery occurring in from three to six months; the animal origin of the disease, although not proven, must not be entirely ignored.

5. **X Ray Therapy.**—Smith has found that x ray therapy is practically a specific in many chronic and inflammatory diseases of the skin. Ninety-eight per cent. of all malignant and semimalignant growths are cured by it. It is sometimes curative in the deep seated sarcomatous or carcinomatous growths. It is the handmaid of surgery and should be used before and after operation, as it is always palliative and relieves pain. It induces constructive metabolism and restores health in many systemic conditions. Through its use blood pressure is lowered, the pulse rate slowed, and the cellular elements of the blood are modified for good. With it we may induce stimulation, sedation, inhibition, or destruction of cellular activity. There is, however, with it a constant element of danger, which should limit its use to those who are masters of the technique of x ray therapy.

8. **Poisoning by Scarlet Red.**—Lyle reports two cases of extensive burns treated by applications of eight per cent. scarlet red ointment. In the first case, that of a child, the ointment was used on a fresh wound, toxic symptoms following within a few hours. In the second case, that of a woman of fifty years, the ointment was used on a granulating surface, toxic symptoms being delayed until the sixteenth day. The symptoms in both cases were dizziness, gastralgia, intense nausea, and vomiting. Scarlet red should not, in the light of these cases, be used on fresh wounds, and in large granulating wounds only a thin layer of ointment should be applied on the edges.

JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS

September, 1912.

1. D. E. JACKSON: Pulmonary Action of Vanadium. Together with Peripheral Reactions.
2. ARTHUR B. EISENBERG and RICHARD M. PEARCE: Action of Heart in Anaphylactic Shock in Dog.

3. D. E. JACKSON: Experimental Cephalic Coma.
4. A. H. RYAN: Absorption of Drugs from Gastric Mucous Membrane. I. Strychnine Nitrate.
5. D. E. JACKSON: Pulmonary Action of Adrenal Glands.
6. H. H. DALE and P. P. LAIDLAW: Method of Standardizing Pituitary Extracts.

1. **Pulmonary and Peripheral Effects of Vanadium.**—Jackson found that intravenous injections of sodium orthovanadate cause a slow but prolonged rise in the pulmonary blood pressure and a rather persistent contraction of the bronchial musculature, by no means as great as that induced by pilocarpine. The action of the drug on these structures appears to be almost wholly peripheral; it probably stimulates both the muscle tissue itself and the nerve endings. The quantity required to produce marked bronchial or pulmonary arterial effects is greatly in excess of that which could be tolerated medicinally. Studying the supposed antiseptic properties of vanadium, the author found that a one to 1,000 solution of sodium metavanadate had no appreciable inhibiting effect on the growth of *Bacillus coli*, *Bacillus proteus vulgaris*, *Micrococcus albus*, *Bacillus pyocyaneus*, and *Bacillus prodigiosus*, and is therefore much less effective in this respect than mercury bichloride.

2. **The Heart in Anaphylactic Shock.**—Eisenberg and Pearce found that the functional activity of the heart is not primarily affected by the injection of the "toxic" dose of horse serum in sensitized dogs. The rate and range of the contractions remain unchanged even after the general blood pressure has started on its abrupt fall. Subsequent changes in the tracings are due to incomplete filling of right side of the heart owing to accumulation of blood in the large venous trunks. Incidentally, it was shown that the fall in blood pressure following the injection of dog's urine or peptone solution into the normal dog is likewise independent of any action on the heart. The conclusions concerning anaphylaxis in the dog may not be applicable to other animals.

4. **Absorption of Strychnine from Stomach.**—Ryan concludes from experiments in dogs that the rapidity of absorption of strychnine from the gastric mucous membrane, as determined by the Pavloff miniature stomach, is greater than was indicated by previous experiments with other methods. Strychnine nitrate in alcoholic solutions (ten and twenty per cent. alcohol) is not absorbed as readily as in aqueous solution, although the preliminary symptoms of strychnine action occurred in about the same time with both varieties of solution. Ligation of the pylorus and cardiac orifice, as practised in earlier experiments, appears to reduce the absorptive power of the stomach.

5. **Pulmonary Action of Adrenal Glands.**—Jackson lays stress on the property possessed by epinephrine of dilating the bronchioles. Although this drug is usually mentioned as acting specifically on the termination of the sympathetic arising from the lumbar and dorsal regions of the spinal cord, it is generally accepted that no dilator fibres reach the lung except by way of the vagus nerves, and the author believes it necessary to conclude that epinephrine stimulates the vagus bronchodilator endings. His experiments also bear out the opinion that in the intact animal one of the functions of the adrenal glands is to assist by means of their internal secre-

tion in counteracting pathological processes or products which tend to produce an abnormal bronchoconstriction.

6. Standardization of Pituitary Extracts.—Dale and Laidlaw describe a method of physiologically standardizing pituitary extracts by means of the isolated uterus of the virgin guineapig, which, when certain precautions are observed, gives a very uniform series of responses to successive equivalent doses. The method permits of the detection of differences of activity which escape recognition by the blood pressure test.

Proceedings of Societies.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Twenty-fifth Annual Meeting, held at Toledo, Ohio, September 17, 18, and 19, 1912.

The President, Dr. X. O. WERDER, of Pittsburgh, Pennsylvania, in the Chair.

(Concluded from page 989.)

Complete Absence of Milk in the Primipara.—Dr. FRANCIS REDER, of St. Louis, said the causes that might bring about in the healthy woman a primitive agalactia in its extreme degree could be found in a very deficient motherhood, where normally a deficient development in the secreting cells might be expected. It could be found in the motherhood of advanced age, where normal atrophic conditions of the gland had caused extensive cell destruction. A tendency to fatness sometimes completely inhibited the functional activity of the gland. Furthermore, a tendency toward the masculine might seriously affect milk secretion and in rare instances be the cause of agalactia. Physical influences, such as emotions of sudden onset, fright, shock, etc., were prone to bring on, by their depressing reflex action upon the sympathetic nervous system, injurious influences that might inhibit cell activity in the organ. He reported three cases of agalactia in three primiparae. In these the cause was attributed to psychic influences, inasmuch as there was no other discoverable factor to which the condition could be assigned. It could not be disputed that the nervous system exerted some influence upon milk secretion. It remained to be demonstrated whether or not such an influence was direct or indirect. As the method of control for the action of hormones was also through the sympathetic ganglia, the shock which these primiparae suffered during their severe labor must be looked upon as a potent factor in causing the agalactia.

Moral and Ethical Aspects of Feticide.—Dr. E. A. WEISS, of Pittsburgh, said a careful consideration of the moral aspect of feticide brought prominently to our attention several facts. The large number of abortions that were performed was becoming a serious menace to the health and welfare of our people. Such termination of human life was a most serious matter and every possible safeguard should be taken to restrict it. There seemed to be a gradually increasing tendency on the part of the laity as well as the profession to take advantage of

the law and teaching which permitted and sanctioned the induction of abortion. In most medical colleges a student had no positive teaching on the moral aspects of abortion and he was allowed to work out his own ideas with regard to the ethical aspects. There was a gradual loss of respect for religious teachings which had always condemned the taking of the life of an unborn and unbaptized child as a sin and murder. Many, if not all the members of the association, were teachers and leaders in obstetrics and gynecology in their respective communities, and the responsibility of this teaching rested with them. He pleaded for a more humane view and consideration of the rights of the innocent unborn child.

Gastric Resection and Gastroenterostomy.—Dr. GEORGE W. CRILE, of Cleveland, said in his personal experience, and that of his associates, Doctor Bunts and Doctor Lower, as well as the Lakeside Hospital records, they had notes on 420 operations that had been performed for gastric and duodenal lesions. Of these, 208 were performed for cancer; 204 for benign obstructions and ulcers, and eight for traumatic perforations. He could say that all duodenal ulcers were cured; congenital stenoses were cured; acute gastric ulcers treated by gastroenterostomy in the lesser curvature and the cardia were often disappointing, but resection cured. In cancer the cures depended upon the status of the lesion. Resection of gastric ulcer of the saddle type was not only safe, but the results were clinically good. Transfusion of blood in cases of hemorrhage, the mastery of the cobbler stitch in all parts of the operations, the performance of shockless operations on the principle of anoci association had now given an almost complete control over the operative results in gastric surgery.

Early Operations for Fibroid Tumors of the Uterus.—Dr. RUFUS B. HALL, of Cincinnati, said the profession was not united as to the advice to give to patients suffering from fibroid tumors. While the operators were getting nearer and nearer together and advising operations earlier in the disease than formerly, still a large number even yet delayed operations too long. After naming some of the dangers in the way of complications of acute conditions, such as secondary changes in the tumor, heart symptoms, pyosalpinx, complicated by suppurating ovary, ovarian hematoma, with infection of its contents, pregnancy in connection with the fibroid, and torsion of the pedicle of the tumor, and citing instances in each of these conditions, he said that they were by no means all the complications that were likely to occur in any given case. The profession at large was prejudiced against early operations, and through it the patient and the patient's friends, thereby making it more difficult to get the consent of these patients for operations early in the disease. He did not think the profession was right in withholding operation so long in these cases in which the condition was fraught with so much danger from delay. In place of the usual advice that was now given for operators to remove the tumor, where it was evident that the physicians could not relieve it in any other way, he advised that after a fair trial with palliative treatment for two or three months, if the symptoms subsided and

the patient was relieved and apparently a well woman, the case was not one for operation now, but should be carefully watched. On the contrary, if the symptoms continued after this preliminary treatment, and after making certain that they were due to the activity of the tumor, not that the tumor was enlarging rapidly or that secondary changes were taking place in it, but in the sense that it had not become quiescent, nonactive, clinically well, and was pursuing the usual course in these cases, the case was one that should be operated in in the near future.

The Gilliam Operation for Suspensions.—Dr. EDWARD J. ILL, of Newark, New Jersey, reported 783 operations, as performed by his modification of Gilliam's suspension by the round ligament. These cases have been operated on in his own or Dr. Charles L. Ill's clinic. The records were those of more and less experienced hands, seven of the assistants having done from one to seven operations each. Three deaths were recorded, two in the hands of one assistant from sepsis, besides one from pneumonia. He reported seven failures, less than one per cent. Of these seven failures, four were in virgins. Five of these patients were reoperated upon and, as shown by frequent reexamination, were entirely well. His report also showed that nulliparous women were the least benefited by the operation. Among the 783 cases, 265 were uncomplicated retroflexions and versions. He also reported fourteen retroflexions with fibroid tumors, for which a myomectomy and a Gilliam operation proved a cure. It was found in several cases that there was a rudimentary ligament on one side. Cure was nevertheless effected by supporting the uterus by the other ligament. The technique of the operation was exactly the same as that which he reported at the meeting in 1903.

Potential Cancer of the Breast.—Dr. MILES F. PORTER, of Fort Wayne, Indiana, reported five cases, and his object in giving it was threefold, to show that benign tumors and such pathological changes in the breast as resulted from chronic inflammation, abnormal involution (fibrous and glandular hyperplasia with retention cysts), and trauma, were potentially cancerous. Actual cancer, as demonstrated by microscopical examinations, might be present without palpable tumor formation. The only way to differentiate between potential cancer and actual cancer was by microscopical examination. The conclusion would seem inevitable, namely, that all potential cancers required excision, and that all demonstrable cancers required radical removal.

Metorrhagia Due to Atheroma of the Uterine Vessels.—Dr. ARTHUR T. JONES, of Providence, said that metorrhagia was essentially a symptom of some pathological condition, either general or local. One should determine the pathology, then apply treatment. The routine curetting in all cases, regardless of pathology, without the most careful examination of the scrapings, was to be deprecated. Many cases of suspected malignant disease were found upon operation to be cases of sclerosis of the uterine vessels. Patients were usually nearing the climacteric when we might be on the lookout for malignant disease, or their general arterial system

might give evidences of early arterial changes. That we did find definite changes with hardening of the uterine vessels, both grossly and microscopically, was a fact. That this change was, strictly speaking, a sclerosis rather than a true atheroma was shown by microscopical findings. Medication, internally or topically, was of no avail. Hysterectomy was the only rational treatment, and that should be performed as soon as the diagnosis was made and before the uterine vessels had become so brittle that ligating was unsafe.

Why Incidental Prophylactic Removal of the Appendix, when Reasonably Possible, Should be the Rule.—Dr. ALBERT GOLDSPOHN, of Chicago, said the appendix was a vestigial structure without any known function, and was not entitled to be classed as an organ. The amount of lymphoid structure in it suggested, and experimental hemogenous infection proved, that it was preeminently the *locus minoris resistentie* of the entire intestinal tract, while its form and location made it a dangerous trap. It was difficult to say what was a healthy appendix, and it was more uncertain how long it would remain so. Its acute inflammations were often as sudden and disastrous as were strangulated hernie. Why await the one calamity more than the other, especially when it was known that postoperative adhesions frequently brought about an explosion from the appendix that appeared perfectly healthy in the field of a preceding operation? The chronic appendix was now known to be not merely the cause of one of the more prominent dyspepsias and epigastric syndromes, but also to have a sinister but potent part in the pathology of organic diseases of the gall-bladder, stomach, and duodenum. For purposes of the topical treatment of the colon, etc., cecostomy was always available and was more satisfactory, according to many men of experience, than was appendicostomy.

Abdominal Surgery in General.—Dr. X. O. WERDER, of Pittsburgh, in the President's Address, gave a brief retrospect of the status of abdominal surgery and gynecology in the last quarter of a century. The year 1880 he characterized as the beginning of the new era in surgery. Up to this time abdominal surgery was practically limited to ovariectomy, although in a few isolated cases, either through a mistake in diagnosis or in the hands of an unusually bold and enterprising surgeon, other operations had been attempted and at times carried out with success.

Conservative Operations on the Ovaries.—Dr. WILLIAM H. HUMISTON, of Cleveland, reported 112 cases. The cases embraced the period from 1899 to 1909. Of the 112 cases in which conservative operations had been performed, but seventy cases had been heard from; nineteen of these patients had given birth to twenty-one children. Many had moved from the city, undoubtedly some had died, and a certain proportion consulted other surgeons who had relieved them of what was left from former operations. From the 112 patients he had conservatively operated upon, but three had returned for a second operation.

If a similar ratio of percentage of pregnancies occurred in those patients not heard from, it would

increase the proportion to about twenty-eight per cent. In the nineteen per cent. out of the 112 cases there was a showing that was convincing to a judicial mind that conservative operations were worthy of general adoption.

Stenosis of the Pylorus in Infancy.—Dr. JOHN W. KEEFE, of Providence, advocated in cases of pyloric spasm, after a fair trial of food regulation and resorting to other medical measures with no relief, opening the abdomen and relieving the spasm of the pylorus by making a small longitudinal incision through the peritoneal and muscular coats of the pylorus down to the mucosa and uniting the incision in a transverse direction. The medical measures that might be adopted in cases of pyloric stenosis were attention to the character of the food, the time of feeding and the quantity at each feeding, stomach lavage, opium, poultices to epigastrium, saline and nutrient enemata. Prolonged medical treatment increased operative risk as we might lose valuable time. The chief cause of death might be attributed to delay in operating. Partial pylorotomy or pyloroplasty alone, or either aided by gradual dilatation with sounds passed through an opening in the stomach and the pylorus after the hypertrophied muscle had been incised, separated from the mucosa and a portion equal to about one half of the circumference of the pylorus removed, should be the operation of choice. The results had been shown to be excellent, and the parts were restored to a practically normal condition.

Selection of the Anesthetic for Abdominal and Pelvic Surgery.—Dr. ROLAND E. SKEEL, of Cleveland, stated that barring the expense, there was a form of mixed ether, nitrous oxide, oxygen anesthesia which gave the maximum of safety with the minimum of discomfort. The patient was first rendered unconscious with nitrous oxide as in the well known nitrous oxide ether sequence, but instead of discontinuing the nitrous oxide it was continued, and a very small quantity of ether added to the nitrous oxide oxygen mixture. By this method the danger of prolonged asphyxia at the outset was avoided, while the very small amount of ether used was productive of no danger to the bronchi or kidneys, and violent ether sickness was not frequently seen. Muscular rigidity was also avoided, and the patient was saved the excruciating pain which followed pure nitrous oxide and oxygen anesthesia, since she dozed for some time after the anesthetic was discontinued instead of awakening immediately as after nitrous oxide alone. While nitrous oxide and oxygen had many other drawbacks, such as occasional failure to produce anesthesia, complicated apparatus, expense, etc., it had a very distinct place in the surgeon's armamentarium and should be selected more frequently than was generally done at present; particularly could it be substituted for a large number of conditions in which chloroform had long been the anesthetic of choice, but it was not absolutely safe, the pain after abdominal operations was sometimes excruciating, backache following abdominal operations was not less than after the use of ether, severe headache was common, and an occasional patient vomited more persistently than after the administration of either ether or chloroform.

How Does Laparotomy Cure Tuberculous Peritonitis?—Dr. HUGO O. PANTZER, of Indianapolis, stated that whenever possible, the focal organs should be removed. The tubes and appendix were the focal organs in his case. The disease persisted, even after extensive permanent cure of the disease of the small intestine, lungs, and pleura. This procedure was contraindicated in his case because of the grave general condition of the patient at the time of the first operation. Any work beyond the actual immediate need was necessarily postponed. An early secondary operation in similar cases was urgently advisable. It was evident from his case that pulmonary and pleural tuberculosis, complicating tuberculous peritonitis, did not of itself contraindicate laparotomy. It was also clearly shown by the history of his case that individuals disposed to tuberculosis and weakened by lung disease required active supervision and treatment for a long period after laparotomy and an apparent cure.

Election of Officers.—The following officers were elected for the ensuing year: President, Dr. Miles F. Porter, of Fort Wayne, Indiana; first vice-president, Dr. Charles N. Smith, of Toledo, Ohio; second vice-president, Dr. James E. Sadlier, of Poughkeepsie, New York; secretary, Dr. E. Gustave Zinke, of Cincinnati, Ohio, reelected; treasurer, Dr. Herman E. Hayd, of Buffalo, New York.

Providence, R. I., was selected as the place for holding the next annual meeting.

Letters to the Editor.

THE TYPHOID CARRIER.

PHILADELPHIA, November 18, 1912.

To the Editor:

In the NEW YORK MEDICAL JOURNAL for November 16, 1912, is an editorial article on the typhoid carrier. I have been much interested in this important subject for a long time; in fact I have made it a rule to call the attention of my class to the magnitude of the subject. I have strongly advised draining the gallbladder of those individuals as the only way I know to make them safe members of the community. The correction of this condition by the administration of hexamethylenamine I seriously question. That the former practice, in comparison with the latter, assures protection, to my mind there is no doubt, therefore why dillydally with medicines about the certainty of which there is no proof? The experimental work with hexamethylenamine in infections of the biliary passages has only been satisfactory to a degree, while the question of rendering the gallbladder sterile by drainage has long since been definitely proved.

JOHN B. DEEVER, M. D.

[We are quite in accord with Doctor Deever as to the relative efficiency of drainage of the gallbladder; but we are confident that he will agree with us that very few convalescents, to say nothing of the people in perfect health who may harbor the typhoid bacillus many years, will consent to an abdominal operation to protect the public. Again, were such surgeons as Doctor Deever available wherever typhoid fever cases occur, the risk would be slight, but exposed as the patients would be to all grades of operators, another lethal factor would be added to the many which already threaten these cases. As maintained in our editorial article, means that will inflict no hardship upon the patient should be used, and even though hexamethylenamine, as Doctor Deever states, has "only been satisfactory to a degree," it opens a field of study which might lead to measures as efficient as drainage of the gallbladder, but possessing none of its practically prohibitive drawbacks.—EDITOR.]

PREGNANCY AFTER OOPHORECTOMY; INSTANCES WANTED.

NEW YORK, November 18, 1912.

To the Editor:

The undersigned is very greatly interested in the subject of pregnancy after oophorectomy and would appreciate certain information from readers of your journal who have had cases of this kind, and care to favor him with an account of the same. The facts desired involve the question of the relief of sterility following this operation, the character of the labor where pregnancy has occurred, the indications for removal of the ovary, the pathological condition, an account of any other operations done at the same time, the character of the menstrual period subsequent to the operation, the date of birth of subsequent children, and their sex.

A blank form has been prepared which embodies these questions and which will be forwarded in reply to a post card request addressed to the undersigned.

GEORGE W. KOSMAK, M.D.

23 EAST NINETY-THIRD STREET.

THE USE OF COAL TAR IN ECZEMA.

KANSAS CITY, Mo., November 13, 1912.

To the Editor:

I see in the Therapeutical Notes of November 9th in your JOURNAL, an article from the *Deutsche medizinische Wochenschrift*, for June 6, 1912, by Ernst Müller, relating to the use of crude coal tar in chronic eczema and various other skin troubles. In Sweden, many years ago when a boy, I heard of the use of boiled pine tar for the same thing, i. e., pine tar boiled down so when cooled it would have a staying quality. This was put on only once and left to stay until the eruption healed underneath, when it would naturally peel off. This relieves all itching and, when covered with some thin layer of gauze or cheesecloth, is applied only once. It is said to be a great remedy. In my practice I find ichthyol answering the same purpose and it need be applied only once when covered over well. Also balsam of Peru is fine in many skin diseases of less chronic form.

E. ANDERSON, M.D.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

A Practical Medical Dictionary of Words Used in Medicine with Their Derivation and Pronunciation, Including Dental, Veterinary, Chemical, Botanical, Electrical, Life Insurance and Other Special Terms; Anatomical Tables of the Titles in General Use, and Those Sanctioned by the Basle Anatomical Convention; Pharmaceutical Preparations, Official in the United States and British Pharmacopœias and Contained in the National Formulary; Chemical and Therapeutical Information as to Mineral Springs of America and Europe, and Comprehensive Lists of Synonyms. By THOMAS LATHROP STEDMAN, A. M., M.D., Editor of the *Medical Record*. Second, Revised Edition. Illustrated. New York: William Wood & Co., 1912. Pp. xi-1028. (Price, \$4.50 plain; \$5 indexed.)

It must be a source of great satisfaction to Doctor Stedman that a second edition of his medical dictionary has become necessary within a year. The good reception given to the book by critics and physicians alike was well deserved. In our review of the first edition (July 29, 1911), we recommended "this new and excellent dictionary to the medical writer and the practitioner." We can do this again for the new edition, which, in fact, is more than a reprint, and seems to be an entirely new work. The few mistakes and errors which were pointed out have received due consideration and are in many instances corrected. A great deal of new matter has been added so that the dictionary contains now 1,016 instead of 988 pages. The proof reading has been carefully done. We congratulate the author and look forward with interest to the publication of the third edition.

Religion and Civilization. The Conclusions of a Psychiatrist. By WILLIAM HIRSCH, M.D. New York: The Truth Seeker Company, 1912. Pp. vii-610.

In a wholesale arraignment of religion, and more particularly of Christianity, the author presents a somewhat novel view. Other writers have maintained that Christ himself was a paranoiac, but Hirsch declares that evidence to be found in the Bible brands practically all of the prominent biblical characters, from Abraham to Paul, as men suffering from insanity. It is held that in the main the historical accuracy of the Bible cannot be impugned, that collateral evidence from many sources corroborates it; but the central thought of the entire work hinges on the psychological analysis of Biblical characters. On the basis of this analysis the conclusion is drawn that the origin and development of the old Hebrew religion as well as of Christianity can be traced, not to Divine revelations, but to the hallucinations, illusions, and delusions of succeeding generations of paranoiac Jews. Christianity is "a deeply rooted, inherited superstition, which for thousands of years has kept humanity in iron bonds, and at all times has formed the greatest obstacle to the development and progress of civilization."

Nervöse Angstzustände und ihre Behandlung. Von Dr. WILHELM STEKEL, Wien. Mit einem Vorwort von Professor Dr. SIEGMUND FREUD. Zweite, vermehrte und verbesserte Auflage. Berlin und Wien: Urban & Schwarzenberg, 1912. (Through Reiman Company, New York.) Pp. viii-448. (Price, \$4.25.)

A product of the Freudian school, this work deals extensively with the psychoanalysis of anxious states and presents many examples of the exposition of submerged complexes and suppressed sexuality, while the introduction, by Freud himself, testifies to its orthodoxy. The book is divided into three parts dealing respectively with anxiety neuroses, anxiety hysteria, and general considerations. In the last part the technique of psychotherapy is presented. All kinds of neurotic and hysterical symptoms are most ingeniously traced by analysis, and the results recorded testify to the value of Freud's methods, even if one is not convinced as to the accuracy of the theories and interpretations.

Clinical Bacteriology and Hematology for Practitioners. By W. D'ESTE EMERY, M.D., B.Sc., Lond., Director of the Laboratories and Lecturer on Pathology and Bacteriology, King's College Hospital, and Lecturer on General Pathology, London School of Medicine for Women; Formerly Hunterian Professor, Royal College of Surgeons. Fourth Edition. Philadelphia: P. Blakiston's Son & Co., 1912. Pp. 274.

In preparing this book for practitioners who have had little or no practice in bacteriology and hematology, the author met a long felt need. That it has reached its fourth edition indicates how greatly it has been appreciated by the profession. The section on hematology, a subject of such momentous importance to the practitioner nowadays, is particularly well written. The book is beautifully illustrated, and, on the whole, is as creditable to the publishers as it is to the author.

Symptoms and Their Interpretation. By JAMES MACKENZIE, M.D., LL.D., Lecturer on Cardiac Research, London Hospital, Physician to the Mount Vernon Hospital, etc. Second Edition. New York: Paul B. Hoeber, 1912. Pp. xx-304. (Price, \$3.)

This work, emanating from the pen of one who has done so much for the refinements of diagnosis, particularly along cardiovascular lines, embodies a most conscientious effort to interest the physician in practical bedside methods, which, under the dominance of the laboratory school of technicians, so often fail of proper recognition. The author does not decry the value of laboratory diagnosis; but in most instances such methods merely determine functional aberrations, when not seldom the actual provocative factor is remote from the special organ, secretions or excretions of which are being specially studied. For instance, seeming renal disorders may be due to many things, and the finding of albumin, and even casts, does not necessarily imply a permanently damaged kidney, nor do altered stomach contents unequivocally mean disease of the stomach.

The author's plea is, first, for a more careful analysis of the patient's history, then, a painstaking physical examination, finally basing one's judgment of laboratory findings on his knowledge of the patient *in toto* rather than on the special findings in any given case. The most interesting theme, however, in his book and one which illustrates his broad grasp of medicine, deals with the relationship between the autonomic nerve fibres, on the one hand, and the cerebrospinal motor, sensory, and special sense nerves, on the other hand, expressed in terms of cutaneous hyperesthesia, hyperalgesia, special sense phenomena, and exalted muscular tonicity. This was adumbrated by Jacob Hilton in his masterly treatise on Rest and Pain, many years ago. Doctor Mackenzie points out, as is well known, that while the viscera possess no sensory nerves, through their autonomic fibres they are related in the cord with centres from which go forth various nerves, irritation of whose centres by an appropriate stimulus results in symptoms which frequently fail of due appreciation. Further, he questions the view generally held that the parietal peritoneum and pleura are possessed of special sensory nerves. In this we believe he is supported both by experimental evidence, carefully conducted, and by the anatomical and histological work of Ramström. Early in the vertebral scale segmentation is perfect, but as one ascends into more complex family forms, our embryological knowledge teaches us that variations in form, and changes in position of various organs from fetal life to that of full fruition, result in displacement of certain individual organs. This apparently changes segmental relations, but not absolutely so when viewed from the standpoint so well exemplified by Mackenzie's work.

Briefly, he would have us study more minutely sensory changes and muscle tension, particularly when applied to diseased conditions of the abdominal viscera. Not the least interesting is his reference to the oft neglected psychoneurasthenic, who is many times a victim of a visceroprosis, or less often of a low grade of appendicitis, or renal or ureteral calculus. In this connection it would amply repay any one to read, with special care, the last chapter in the book on the Estimation of the View of Symptoms and Their Bearing on Prognosis and Treatment. The entire book deserves careful study, and this work with one of Hertz's on *Visceral Sensations* could be read with profit by both the physician and surgeon.

Meetings of Local Medical Societies.

MONDAY, December 2d.—Clinical Society of New York Throat, Nose, and Lung Hospital; German Medical Society of the City of New York (annual); Brooklyn Hospital Club; Roswell Park Medical Club, Buffalo; Hornell Medical and Surgical Association; Utica Medical Library Association; Niagara Falls Academy of Medicine; Practitioners' Club, Newark, N. J.; Hartford, Conn., Medical Society.

TUESDAY, December 3d.—New York Academy of Medicine (Section in Dermatology); New York Neurological Society; Clinical Society of West Side German Dispensary and School for Clinical Medicine; Long Island Medical Society (annual); Amsterdam City Medical Society; Lockport Academy of Medicine; Syracuse Academy of Medicine; Buffalo Academy of Medicine (Section in Surgery); Ogdensburg Medical Association; Oswego Academy of Medicine; Medical Association of Troy and Vicinity; Clinical Society of the West Side German Dispensary and School for Clinical Medicine; Bridgeport, Conn., Medical Association.

WEDNESDAY, December 4th.—Society of Alumni of Bellevue Hospital; Brooklyn Society for Neurology; Harlem Medical Association; Elmira Academy of Medicine; Bronx Medical Association; Schenectady Academy of Medicine; Long Island Society of Anesthetists.

THURSDAY, December 5th.—New York Academy of Medicine; Brooklyn Surgical Society; Practitioners' Club, Buffalo; Geneva Medical Society; Dansville Medical Association.

FRIDAY, December 6th.—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Gynecological Society, Boston; Manhattan Dermatological Society; Practitioners' Society, New York; Corning Medical Association.

Official News.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the three weeks ending November 23, 1912:

Allen, A. H., Passed Assistant Surgeon. Detached from the *Hannibal*, and ordered to the Atlantic Reserve Fleet. **Angwin, W. A.**, Passed Assistant Surgeon. Detached from the *California* to waiting orders. **Asserson, F. A.**, Surgeon. Detached from the Naval Hospital, Boston, Mass., and ordered to the *Minnesota*. **Baker, B. G.**, Acting Assistant Surgeon. Appointed an acting assistant surgeon in the medical corps of the navy from November 1, 1912; ordered to Naval Recruiting Station, Chicago, Ill. **Bell, W. H.**, Surgeon. Detached from the Department of Sanitation, Canal Zone, Panama, and ordered home to await orders. **Brown, H. L.**, Passed Assistant Surgeon. Detached from the Disciplinary Barracks, Fort Royal, S. C., and ordered to the *Ohio*. **Cuthbertson, Roy**, Passed Assistant Surgeon. Ordered to the receiving ship at New York, N. Y. **Dean, F. W. S.**, Surgeon. Commissioned a surgeon from August 27, 1912; detached from the Navy Yard, New York, N. Y., and ordered to the Atlantic Reserve Fleet. **Ely, C. F.**, Surgeon. Commissioned a surgeon from September 2, 1912. **Foster, T. G.**, Passed Assistant Surgeon. Detached from the *Monadnock* to waiting orders. **Gill, J. M.**, Passed Assistant Surgeon. Detached from the *Panther* and ordered to the *Tennessee*. **Henry, R. B.**, Passed Assistant Surgeon. Ordered to the Naval Hospital, Annapolis, Md. **Herwesch, H. R.**, Passed Assistant Surgeon. Ordered to the Naval Hospital, Canacao, P. I. **Holloway, J. H.**, Passed Assistant Surgeon. Transferred to the retired list, November 14, 1912, in accordance with section 1453, Revised Statutes, and ordered home. **Howard, J. W.**, Passed Assistant Surgeon. Detached from Canacao Station, and ordered to the *Monadnock*. **Hull, H. F.**, Passed Assistant Surgeon. Detached from the *Ohio* to waiting orders. **Jacoby, J. A.**, Assistant Surgeon. Resignation accepted, to take effect November 7, 1912. **Jennes, B. F.**, Passed Assistant Surgeon. Ordered to the *Washington*. **Kennedy, J. T.**, Surgeon. Detached from the receiving ship, New York, N. Y., and ordered to the Naval Hospital, Boston, Mass. **Kerr, W. M.**, Passed Assistant Surgeon. Commissioned a passed assistant surgeon from April 14, 1912; detached from the Annapolis Hospital and ordered to the Navy Yard, Brooklyn, N. Y. **Minter, J. M.**, Passed Assistant Surgeon. Detached from the Naval Station, Guantanamo, to waiting orders. **Nielson, J. L.**, Surgeon. Commissioned a surgeon from July 27, 1912. **Phillips, E. W.**, Assistant Surgeon. Detached from the Naval Proving Grounds, Indian Head, Md., and ordered to the *Louisiana*. **Rennie, W. H.**, Passed Assistant Surgeon. Detached from the *Montana* and ordered to the *Missouri*. **Rossiter, P. S.**, Passed Assistant Surgeon. Detached from the Puget Sound Hospital and ordered to the *California*. **Sheehan, R. F.**, Assistant Surgeon. Detached from the *Minnesota* and ordered to the *Hannibal*. **Shook, F. W.**, Passed Assistant Surgeon. Placed on the retired list of officers of the navy, from November 8, 1912; detached from the Naval Hospital, New York, N. Y., and ordered home. **Smith, H. W.**, Passed Assistant Surgeon. Detached from the *Salem* and ordered to the *Montana*. **Stepp, Jacob**, Surgeon. Detached from the *Missouri* and ordered to the *Montana*. **Sullivan, N. R.**, Assistant Surgeon. Commissioned an assistant surgeon from November 12, 1912; ordered to the Naval Medical School, Washington, D. C., for instruction. **Valz, E. V.**, Passed Assistant Surgeon. Detached from the *Cleveland* and ordered to the *South Dakota*. **Von Wedekind, L. L.**, Surgeon. Detached from the Navy and Marine Recruiting Stations, Chicago, Ill., and ordered home to await orders. **Woodward, J. S.**, Passed Assistant Surgeon. Detached from the Asiatic Station and ordered to the Olongapo Station, P. I. **Woods, E. L.**, Passed Assistant Surgeon. Ordered to the *Rainbow*. **Ziegler, J. G.**, Passed Assistant Surgeon. Commissioned a passed assistant surgeon from April 14, 1912.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending November 23, 1912:

Allen, William H., Lieutenant, Medical Corps. Granted forty-five days' leave of absence. **Baker**, Carroll R., Lieutenant, Medical Reserve Corps. Ordered to Washington, D. C., for examination to determine his fitness for admission to the Medical Corps. **Christensen**, Waldemar A., Lieutenant, Medical Corps. Relieved from duty in the Philippines Division, and ordered to proceed to the United States. **Foley**, Thomas M., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort McIntosh, Texas, and will proceed at the proper time to San Francisco, Cal., and take the transport to sail from that place on or about March 5, 1913, for the Philippine Islands, and upon arrival will report to the commanding general, Philippines Division, assignment to duty. **Goldthwaite**, Ralph H., Captain, Medical Corps. Relieved from duty in the Philippines Division, and will proceed to the United States, and on arrival will report to the adjutant general of the army for further orders. **Hall**, W. E., Lieutenant, Medical Corps. Ordered to Fort McDowell, Cal., for duty during the absence of Lieutenant James F. Johnston, Medical Corps. **Hull**, Howard L., Lieutenant, Medical Corps. Relieved from duty at Fort Howard, Md., and will proceed to Fort Terry, N. Y., for duty. **Jones**, H. W., Captain, Medical Corps. Ordered to Hot Springs, Ark., for observation and treatment. **Johnston**, J. F., Lieutenant, Medical Corps. Granted leave of absence for two months. **Lavature**, Lewis A., Lieutenant, Medical Reserve Corps. Relieved from duty in the Philippines Division. **Lombard**, M. S., Lieutenant, Medical Corps. Relieved from duty with troops on the Mexican border, and will proceed to Fort D. A. Russell, Wyo., for temporary duty. **Morris**, S. J., Captain, Medical Corps. Relieved from duty in the Philippines Division, and will report to the commanding officer of Letterman General Hospital, Presidio of San Francisco, Cal., for duty. **Simpson**, James A., Lieutenant, Medical Reserve Corps. Relieved from duty in the Philippines Division. **Thearle**, W. H., Lieutenant, Medical Corps. Leave of absence extended until December 31, 1912. **Weston**, Henry R., First Lieutenant, Medical Reserve Corps. Relieved from duty at Key West Barracks, Fla., and will proceed at the proper time to San Francisco, Cal., and take the transport to sail from that place on or about March 5, 1913, for the Philippine Islands, and upon arrival will report to the commanding general of the Philippines Division for assignment to duty. **Woodruff**, Charles E., Lieutenant Colonel, Medical Corps. Granted leave of absence for six months, with permission to go beyond the sea, on surgeon's certificate of disability.

The following named officers of the medical corps will report to the examining board at Manila, P. I., for examination to determine their fitness for promotion: First Lieutenants Roy C. Hefebower, George B. Foster, Jr., and William H. Allen.

Births, Marriages, and Deaths.**Married.**

Chambers—Sisson.—In Baltimore, on Wednesday, November 6th, Dr. Thomas R. Chambers and Miss Martha Sisson. **Chapin—Lamson.**—In Worcester, Mass., on Tuesday, November 10th, Dr. Laurence Dudley Chapin, of Springfield, and Miss Ruth Hayes Lamson. **Coerr—De Renne.**—In New York, on Wednesday, November 20th, Dr. Frederick Coerr and Miss Audrey de Renne. **Dean—Rooney.**—In West Auburn, Pa., on Tuesday, November 12th, Dr. A. J. Dean and Miss May E. Rooney. **Dietrich—Reeder.**—In Brooklyn, N. Y., on Tuesday, November 19th, Dr. George E. Dietrich, of Coatesville, Pa., and Miss Irma M. Reeder. **Elliott—Corson.**—In Layton, Mo., on Tuesday, November 15th, Dr. Frank T. Elliott and Miss Margaret Corson. **Furniss—Pine.**—In Troy, N. Y., on Monday, November 18th, Dr. Henry Dawson Furniss, of New York, and Miss Ruth Kellogg Pine. **Harris—Goldstein.**—In New York, on Tuesday, November 19th, Dr. Joseph

Friend Harris and Miss Charlotte Rose Goldstein. **Harsh—Robbins.**—In Mobile, Ala., on Tuesday, November 12th, Dr. Forest Rutherford Harsh and Miss Rosamond Rutherford Robbins. **Hudson—Gay.**—In Gough, Ga., on Sunday, November 17th, Dr. Joseph Haskel Hudson and Miss Adeline Estelle Gay. **Jillson—Foster.**—In Southboro, Mass., on Wednesday, November 20th, Dr. Walter Arthur Jillson and Miss Nellie V. Foster. **McDonald—Daugherty.**—In Cumberland, Md., on Wednesday, November 13th, Dr. W. C. McDonald, of Tampa, Fla., and Miss Bertie A. Daugherty. **Olmstead—Ijams.**—In Baltimore, Md., on Thursday, November 14th, Dr. William De Forest Olmstead and Mrs. Bessie T. Ijams. **Painter—Showalter.**—In Washington, D. C., on Thursday, November 14th, Dr. R. Painter, of Dayton, and Miss Ada Showalter. **Park—Young.**—In Philadelphia, on Thursday, November 14th, Dr. Frederick Smith Park and Miss Catherine Volmer Young. **Parker—Ridgely.**—In Washington, D. C., on Friday, November 22d, Dr. Henry P. Parker and Miss Eleanor C. Ridgely. **Phillips—Whitaker.**—In New York, on Thursday, November 21st, Dr. Arthur Madison Phillips and Miss Linnie Susan Whitaker. **Tredway—Buffington.**—In Baltimore, Md., on Saturday, November 16th, Dr. T. Palmer Tredway, of Erie, Pa., and Miss Caroline Buffington.

Died.

Barnes.—In Glens Falls, N. Y., on Friday, November 8th, Dr. John T. Barnes. **Beam.**—In Moline, Ill., on Friday, November 15th, Dr. W. O. Beam. **Blair.**—In Rochester, Minn., on Sunday, November 10th, Dr. Paul Blair, of Winona. **Brooker.**—In Hoosac Tunnel, Mass., on Friday, November 15th, Dr. Samuel D. Brooker, of Charlemont. **Bruere.**—In New York, on Friday, November 22d, Dr. John E. Bruere, aged seventy-six years. **Bustard.**—In College Point, N. Y., on Monday, November 18th, Dr. William Ross Bustard, aged forty-four years. **Carr.**—In Shickshinny, Pa., on Wednesday, November 13th, Dr. A. P. Carr, aged seventy-six years. **Cleeman.**—In Philadelphia, on Tuesday, November 19th, Dr. Richard Alsop Cleeman, aged seventy-two years. **Douglas.**—In Ilion, N. Y., on Tuesday, November 19th, Dr. Adelbert John Douglas, aged seventy-five years. **Dadiriarian.**—In Hastings, N. Y., on Sunday, November 24th, Dr. Markar Dadiriarian, aged seventy-three years. **Duncan.**—In Monrovia, Cal., on Monday, November 4th, Dr. John T. Duncan, of Toronto, Canada. **Elliott.**—In Kingston, N. Y., on Saturday, November 16th, Dr. Elmore E. Elliott. **Fair.**—In Baltimore, Md., on Friday, November 15th, Dr. Hezekiah W. Fair, aged sixty-three years. **Francis.**—In Worcester, Mass., on Wednesday, November 20th, Dr. George F. Francis, aged seventy-five years. **Gerhard.**—In Reading, Pa., on Friday, November 15th, Dr. Franklin R. Gerhard, aged sixty-nine years. **Gibbons.**—In Carbondale, Pa., on Sunday, November 17th, Dr. Horace Joseph Gibbons, aged thirty-seven years. **Grabowski.**—In Trenton, N. J., on Sunday, November 17th, Dr. Casimir G. Grabowski, aged sixty-five years. **Hervey.**—In New Rochelle, N. Y., on Tuesday, November 18th, Dr. Leon H. Hervey, aged seventy-five years. **Kinne.**—In Syracuse, N. Y., on Wednesday, November 13th, Dr. Arthur B. Kinne, aged sixty-two years. **Ogden.**—In Fairmont, W. Va., on Sunday, November 17th, Dr. Presley B. Ogden, aged seventy-three years. **Rich.**—In Maynard, Mass., on Friday, November 15th, Dr. Frank U. Rich, aged fifty-five years. **Small.**—In Philadelphia, on Saturday, November 16th, Dr. Edward Payson Small, aged seventy-four years. **Stewart.**—In Philadelphia, on Sunday, November 17th, Dr. John Stewart, aged forty years. **Stubbs.**—In Richmond, Va., on Monday, November 18th, Dr. W. S. Stubbs, aged seventy-eight years. **Sundberg.**—In Seattle, Wash., on Tuesday, November 19th, Dr. John C. Sundberg. **Tinsley.**—In Baltimore, Md., on Saturday, November 16th, Dr. Alexander Tinsley, aged seventy-nine years. **Tobey.**—In Boston, on Saturday, November 23d, Dr. Walter H. Tobey, aged sixty-five years. **Von Randohr.**—In New York, on Sunday, November 17th, Dr. Caesar A. von Randohr, aged fifty-seven years. **Wells.**—In Sag Harbor, N. Y., on Thursday, November 14th, Dr. Charles E. Wells, aged sixty-one years. **Winkley.**—In Boston, on Wednesday, November 20th, Dr. J. Wingate Winkley, aged seventy-nine years.

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Original Communications.

TENDENCIES OF MODERN PHYSIOLOGICAL DISCIPLINE IN MEDICAL SCHOOLS.*

Principles and Objects of Physiological Discipline.

By JOHN C. HEMMETER, M. D.,
Baltimore.

The development and growth of physiology in the last twenty-five years has been so great, that even the best trained mind of the technical physiologist finds it difficult to keep abreast of the progress that has been, and is still being made. It is all the more astonishing, therefore, that in medical schools in which the councils of men prevail who have only an exclusive medical training, one still meets with the idea that physiology could be taught by men who are not trained physiologists, but by practitioners of medicine who obtained their knowledge at second hand from textbooks only, and have no personal experience with research work, nor even an intimate control of the truths, doctrines, and theories of modern physiology.

With regard to chemistry, even the orthodox medical mind has long ago abandoned this idea, and in even the poorest medical schools, chemistry is taught by a technically trained chemist, and pathology usually by a trained pathologist. It is for the purpose of clearing up this erroneous opinion that this article was written. It was first discussed with a number of eminent physiologists in this country and abroad and many of the ideas were received from Jacques Loeb in an almost daily intercourse at Woods Hole, Massachusetts, during the summer of 1911, but also from other experienced teachers in physiology who were engaged at the Woods Hole Marine Laboratory. The article by Verworn entitled, *Aufgaben des physiologischen Unterrichts* has inspired some of the main arguments. I am also indebted to Professor J. P. Pavloff, of St. Petersburg, for much inspiration toward this article, gained as well from his writings as from a private correspondence with this great physiologist and brilliant scholar.

Some of the principal thoughts I have quoted from the preface to my *Manual of Physiology* (Philadelphia), the principal one of which is contained in the remark on page 10 of the preface. There are systems of economics of

intellect and in physiological pedagogy and physiological discipline they demand no cast-iron rigid scheme, but elastic fundamental concepts—lifelike, plastic aspects, not a mass of disconnected single knowledge. Only that which is assimilated, of and by itself continues to live and work in the intellect.

In the following I shall endeavor also to give the reason why the secret of success in the future teaching of physiology is to be found to a large extent in general and comparative physiology.

Physiology is, at the present day, not a finished science with subject matter established and immovable in every particular in the same sense as in her sister science, descriptive anatomy. In this respect the anatomist is far more happily placed. So far as the descriptive anatomy of man is concerned, at least, the structure of the science is, in a manner, finished. The subject matter for academic instruction is outlined within certain circumscribed boundaries. Hence the lectures on anatomy delivered in the various universities agree in the main. Not so in physiology. True, there is also a vast area of facts in physiology that can be considered established, and which must self evidently form the basis for all physiological instruction. But then facts are interrelated in a very loose and merely superficial manner, and frequently stand dissociated and alone. The science of physiology is still very much in a state of development.

On the other hand no biological discipline makes as many demands on its votary. The number of auxiliary sciences is so great, the methods of investigation are so complicated, the problems so difficult, the subject matter so delicate, that it can easily be understood why investigators confine themselves to one or but few of its many special branches. It is no longer possible for an investigator to engage with searching thoroughness in all the departments of physiology as was the case in the days of Johannes Müller, before physiological investigation and method assumed the present proportions. To-day physiologists become conversant, one in the physiology of digestion and the metabolism change of living matter, or of electrophysiology, another in that of the central nervous system; one confines himself almost exclusively to the chemical composition of certain forms of animal matter, another to the mechanical principles underlying circulation; one to experiments on change of matter, another to the physiology of the organs of perception; some, again, to the physiology of the enzymes. This oneness in investigation, which cannot be avoided with the natural limitations

*Address delivered at opening of the course in physiology at the University of Maryland, October 1, 1912.

of human life, and necessary in a measure if research work is not to drop to a dead level, brings with it a certain differentiation in physiological instruction according as the topics are considered highly important or insignificant with the time limitations of the academic course.

Thus it happens that some one attending physiological lectures at two extremely diverging universities, would almost receive the impression that he is taking courses in two different sciences and, all the more so, if the methods of instruction are at variance (Verworn).

It now behoves us to explain the importance of physiology in the training of a physician. Physiology is the science of life or of the biological phenomena in organisms or, as has been said, of the chemical transactions in or functions of the organism and its parts. In this vast field of general physiology, the special physiology of the human body is of prime importance to the future physician. The fundamental importance of this branch of physiology in the study of medicine has never been questioned. The physiology of man, together with human anatomy, constitutes the indispensable basis on which the structure of medical science and skill has been reared since the days of Galen and this will ever be so. Without physiology there will be no practice of medicine. Physiology is to picture clearly the biological activities in the normal body, the part the several organs in the human body play in the activity of life under normal conditions, so that at any given moment an account can be rendered of what is actually going on in the human body. The more plastic and accurate the picture, the more clearly possible this visualization of the activities in the body and its parts under normal conditions, the more profitable it will be to the physician at the bedside, for sickness is nothing but life under difficult conditions.

But how can the abnormal be recognized and understood when the normal is not sufficiently known? How could a physician restore to health, that is, correct the course of abnormal digestion, if he did not know these biological functions in a sound body? The more thoroughly grounded in physiology, the better a physician. The reverse may also be stated as true, that the brilliant physiologists in the history of the science have been such as were also physicians. But the training in clinical medicine alone does not fit one for the teaching of physiology as well as the training in the latter fits one for the pursuit of clinical medicine (see Hemmeter, *The Technical and Scientific Qualifications of a Teacher of Physiology*, in *University Hospital Bulletin*, Baltimore, May, 1912).

It is not inordinate to point to the dangers into which lack of physiological knowledge can draw the science and practice of medicine, and into which it has been led by various pilots in the present day. It is unnecessary to say that physicians do make mistakes at the bedside for which they must pay the penalty, mistakes that could easily have been avoided with a fair knowledge of physiological processes, but it would be well to glance at two great blights that are exceedingly annoying to the medical profession at the present time.

Much has been said recently about quackery and

of the struggle of physicians against it. Few are perhaps correctly informed on the enormous spread of quackery and that, too, in an age that points with pride to its general culture. In what alarming a light this reveals the true status of the education and discriminating ability of the general public! The consideration of this question ought to be taken seriously to heart; unpleasant contact with it is inevitable in the practice of medicine. The whole matter would be comparatively harmless if it were confined to barbers and teachers and patent medicine men, or people of like professional training, as it was in olden days. The doings of men of that stamp could be witnessed with indifference; for those who surrender consciously to their treatment would only have themselves to blame and, although generally too late, they would eventually fall into some physician's hands.

But the situation has become far more ominous to-day. Persons decorated with the title of doctor of medicine are not ashamed to practise quackery much after the manner of the charlatans and wonder doctors of the sixteenth and seventeenth centuries, who meandered from pillar to post in their carts and in fanciful garb, with tinkling bells, lauded their remedies before the multitudes of those alarmed at their ailments. Whenever a man on whom a medical faculty has bestowed the title of doctor practises medicine under such guise, the public cannot escape being shamefully deceived. Such conditions are admissible only where the foundations of medical science are lacking. A man who is reasonably acquainted with the biological activities in the body, and who has gained but one clear glimpse into the physiological happenings in the organism, could never lower himself to the fallacious practice of quackery unless he did so against his better judgment and from base motives.

Another danger to which the physician is exposed in consequence of inadequate ideas about the nature of biological phenomena and the physiological processes in the organism, lies in the total misconception of the physiological significance and the therapeutic value of many modern specifics. On this score practice has made many blunders in recent times. When the untutored patient demands of his physician as large a bottle as possible of intensively colored bitter medicine for every trifling ailment, this is excusable on the ground that the quaint ideas on the healing of the sick of bygone centuries yield reluctantly to better insight in the public mind. Hence, the physician is often obliged to prescribe for no other reason than to be doing something. But when, instead of treating diseases along the line of insight into their causes, the processes of the organism, and in harmony with physiological demands, the physician simply seizes a chemical of doubtful value and but recently thrust on the market with a big "send off" by some chemical concern, he becomes guilty, rigorously speaking, of malpractice committed from a viewpoint of convenience: for what does he or any one else know of the physiological effects of the preparation in question?

The danger would, however, not be very great, if the state of modern trade in scientific pharmacology were not in the most deplorable condition imaginable. Instead of originating solely in medical re-

search and science, as formerly, modern scientific pharmacology is overshadowed by the product of manufacturers of chemicals. A large number of the scientific representatives of pharmacology devotes itself, not to minute investigations on the physiological effects of remedial substances, but principally to the purely chemical questions on the constitution and chemical structure of substances contained in the animal body, or to experiments on metabolism. The pharmacologists are frequently only physiological chemists. In the meantime the chemical factories are producing multitudinous quantities of "new specific."

Experiments after the same general scheme are conducted on the effect of the most varied chemical combinations, and as is often the case, in the most slipshod and superficial manner. It is usually the same procedure in each case. A chemical is injected into a rabbit and then blood pressure and respiration are graphically noted. If a change occurs in these external manifestations, the substance can pass as a remedy. Then the dosing of human beings is tested in amounts that can do no very serious damage, the article is manufactured in large quantities, is dubbed with a beautiful name, and in a short time floods the market with the highest recommendations only to disappear entirely within a few years. In the meantime hundreds of new remedies have been discovered in the same way, with therapeutic effects equally eminent.

The short time which the enormous production of pharmacological products allows for the physiological testing of the separate articles, naturally precludes establishing what their effects are in the animal body and locating their points of attack. The bare investigation into their influence on heart action, on blood pressure and respiration throws no light on these questions. Every physiologist will scoff at this manner of examining a remedial substance, for the heart action, blood pressure, and breathing are purely external resultants of a large number of quite different and individual factors. Even after it is known that a substance influences blood pressure, next to nothing is known of its specific effect on, and its point of attack in the body. The same thing obtains concerning the influence on numerous other purely external physiological phenomena.

It is evident, therefore, how matters stand on the great abundance of "specifics of to-day" that rise like meteors in the pharmacological heavens. It is advisable, therefore, to be sparing in the use of drugs and to adhere closely to the few thoroughly tried and approved preparations whose physiological effects are already known with some degree of precision.

From the foregoing it is evident how urgent to the physician is the need of a clear, comprehensive view of the physiological occurrences in the human body. The deeper the insight into these matters, the more nearly correctly will the physician be able to pass judgment on diseases and their causes, the more purposefully will he choose his course of treatment, and the more successful will be his practice.

It is a great mistake, common in the practice of medicine, to place treatment by drugs in the fore-

ground of therapeutics. The physiological factors in the art of healing have for a long time retreated too far behind the use of remedies. A practical physician, who has a vivid picture of the biological activities in the human body and of their more subtle causes, will not neglect the natural, purely physiological factors for the pharmacological.

Man is the most interesting and eminent subject of all science, for there will never be any subject that more immediately and more closely concerns man than man himself. This last must swell the heart of every medical student with pride in his profession, since man is the exclusive object of his whole activity. The physician ought to be the best judge of human nature. The physiology of man, therefore, represents for him the most important part of general physiology, not only in its general human, but also in its specific scientific aspect.

But the physiology of man is extremely comprehensive, and unfortunately here, as everywhere, "art is long and time is fleeting." With due regard for the many demands and the short time allowed to physiology in the study of medicine, a selection of the most important topics must be made from the vast area of human physiology. The most important object of this teaching appears to be, not to present a great mass of isolated facts collected from every chapter of human physiology, but rather to avoid disconnected subject matter, the memorizing of which can be mechanically acquired from books, but rather, to emphasize this point again, to give a plastic picture, a profound understanding of all the activities in the human body, a unified complex of fundamental concepts around which, as it were, the special facts as they present themselves are gradually to crystallize by themselves, i. e., of their own accord. Only that which is spontaneously assimilated, lives and toils and labors on in the mind. Isolated facts without organic connection, artificially and laboriously acquired, constitute dead knowledge to remain worthless and soon to be lost by the wayside. Fundamental objective visualizing, live concepts, not a profusion of disconnected isolated facts, is what is needed in economical mental housekeeping.

From this point of view special stress is to be laid on a part of universal physiology that has very slowly, but in the course of time, increasingly tended to crystallize out from the specialized researches in physiology as a precious gem, that is, *general physiology*.

The general physiological concepts which contain all the properties and laws common to all living bodies, furnish, in a certain sense, the key to all the doors behind which the numerous special facts concerning normal life lie hid. Without this master key only the outside doorplate comes into view, but the nature of the facts that slumber behind remains unknown, and the separate facts cannot be called to life to be united into organic complexes. In the absence of summary knowledge of the facts of general physiology, the special physiology of man gains no profound understanding; without it the most beautiful attainments in this field remain lifeless. The physician, however, who has enjoyed a thorough training in general physiology, sees deeper down into the or-

ganism, before his mind's eye he visualizes the processes in the diseased cells, he beholds the causes of their changed conditions, and he will be better able to remove these causes. The less the healing art has general physiological visualizations at command, the lower it sinks into barren and tiresome schematization.

Among the chapters of general physiology of special importance to the physician, beside the knowledge of general biological phenomena, are what lie at the foundation of these, the cellular processes, above all experiences on the general hypotheses of life, and with special emphasis the laws of irritability. These chapters are of preeminent interest to the physician, since diseases represent nothing but the consequences and the external expression of changed conditions of life, or in other words, the deviations from normal biological phenomena in the cellular constituents of the body, induced by irritations. Hence it is of extraordinary importance for the physician to be acquainted with the biological phenomena in the cells under normal conditions, on the one hand, on the other hand, to know what deviations from the normal life are superinduced in them by irritants according to their quality, intensity, and direction.

The cellular pathology of Dr. Rudolph Virchow, on which all medical conceptions rest, and which must ultimately form the starting point, and basis even, for all effects in this direction of the modern pathology of tumors, assumes cellular physiology as a premise and can only grow extensively as the knowledge of the normal cell processes and the lawfulness of the effects of the various irritations expands.

In consequence of a sufficient number of general physiological visualizations, the special facts of the physiology of man will appear in quite a different light. The life proceedings in the human body will be regarded from a higher level, with broader view, closer connections, and relations will be discovered everywhere, where, otherwise, only isolated disconnected facts presented themselves. This is absolutely necessary with the vast amount and extensive scope of subject matter. The several departments of physiology have assumed such proportions that some of them have moved out of touch with one another and have developed into individual sciences. Thus the science of embryology and morphology, which ought to form an integral part of physiology as it formerly did, has been divorced completely from modern physiology at a serious loss to both physiology and embryology, for from both vanished, at the same time with this separation, also the mutual understanding of their several problems and sympathy for their way of thinking.

Embryology is no longer lectured on in physiological courses. There is at least one justification here for the separation into a special branch. Embryology has its own special problems, that have proved so immensely manifold in the last decades and have called into existence an amount of scientific work so copious as to make even a survey well nigh impossible.

Quite different is the case of physiological chemistry, which is another department of human physiology, and which has also striven to gain a certain

independence. Physiological chemistry has made special effort to branch off as an independent science under the influence of Hoppe-Seyler. The independence of physiological chemistry from physiology cannot be justified. Physiological chemistry has the same general aim as physiology, that is, the investigation of biological phenomena. This aim physiology pursues with methods varied according to the demands of every special question. In its investigations physiology must apply physical and chemical, surgical and microscopical methods, according to the exigencies of the case. The fact that, with so many demands, each investigator selects some special field which he elaborates according to his special methods, is both tangible and justifiable.

The representative phases of the science vary considerably in the different universities, but physiology on the whole is rescued from narrowing monotony. But to institute a separate science on the ground of special methods, such as physiological chemistry, is entirely erroneous. A science is founded on a problem, not on a method; in the latter case inherent justification is wanting. If this proviso be lost sight of, then physiological physics, physiological surgery, and physiological microscopy could segregate themselves as independent sciences with the same justification as physiological chemistry. This would lead to hair splitting dismemberment of physiology into specialties that would soon have no common ground of interpretation, and would overlook the one and only aim and purpose in physiological investigations, the study of life.

Physiological chemistry has already confined itself in the main to but few special problems. The two foremost propositions in physiological chemistry are investigations on the composition of albuminoids and experiments on the changes of matter in dogs and rabbits; the former, together with the study of hydrocarbons, have been and will be, the work of pure chemistry, the latter must be reincorporated into the programme of physiology where it belongs (Verwor).

Specializing into even more specialized departments has already been carried to such a degree of nicety as to lead to embarrassing conditions. Physiology is, and must remain an undivided science. The application of the methods of chemistry is a part of physiology as is the application of any other method, and academic instruction in physiology ought, correspondingly, to be one and undivided, and not be separated into courses on physiology and on physiological chemistry, each conducted independently by distinct lectures. Such a division of physiological instruction would lead to utter mangling for the student of the more special chapters of physiology, for there is no chapter in the whole of physiology in which chemistry does not play an important part, or which could be discussed without entering upon chemical questions. The student would be unable to get a useful survey of the subject as a whole.

Pursuing division on principle would also seriously embarrass investigation. If each instructor is to adhere closely to his own department it will give rise to neglect or abandonment of the other departments. The difficulties attending physiological investigations preclude the possibility for every

physiologist to engage in individual research work on chemical problems, and likewise for him, whose dominant interests are chemical, questions of physics and microscopy are precluded. Each specialist is obliged to work with the best methods at his command. The lecture course on physiology offers the only clearing house where the physiologist can preserve a unified survey of the subject as a whole if he is forced to take notice of the problems, methods, and results outside his own province. Without this opportunity and this injunction there would still be physiological chemists, physicists, etc., but ultimately no physiologists; thereafter the general survey and with this a liberal and unconstrained grasp of the problem would be utterly lost.

The preparatory study of pure chemistry should be in the hands of chemists, that of physics conducted by physicists. Instruction in physiology as a whole will then contain elements in chemistry, physics, anatomy, histology, zoology, and botany. The one aim, however, to be pursued in all physiological instruction should be to give a comprehensive unified picture of what is going on in the human body. In this sense the several chapters of physiology will be taken up in a certain sequence, issuing without constraint from the very nature of the subject.

The discipline is best begun with the fundamental principles of general physiology. At first these manifestations of energy, which are connected with transubstantiation in the body will be considered, such as heat, motion, evolution of electricity, the processes in the nervous system, and the functions of the organs of sense. This will be followed by a discussion of the entire change of matter in the human body, pursuing the fate of the alimentary substances to their excretion as waste matters; the properties of food, secretion, digestion, absorption, breathing, the composition of the blood and of the lymph, circulation, the changes of tissue, formation and excretion of the urine. It will thus be seen that the functions of one member articulate with those of another, and how they keep the clock-work of the human body going in unison.

The several special departments of the physiology of man vary in educational value for the physician. With the time limitations imposed upon physiological instruction, a retrenchment of the department of minor import will be necessary. In this respect the physiological instruction of the future will have to take on shape different from that of the latter half of the past century. Thus, it would not be admissible to allow as much time to electrophysiology as formerly. The phenomena, in view of the development of electrochemistry, have lost much of their theoretic interest for the biologist, and have become almost worthless to the physician who is concerned with such a picture of the biological processes in the body as can be of practical service to him. With all the inherent theoretic interest in the physiology of the muscles, it will be practical to devote less time to them than formerly, when it often embraced the main part of the lecture course of a whole semester. This was formerly justifiable in a way because the general physiology of the muscles and neurology then constituted that part of physiology in which the physician became last ac-

quainted with a general idea of physiology. Now that the conceptions, doctrines, and theories of general physiology have been segregated from the various departments of special research, and have developed into a comprehensive complex; now that physiology forms a separate department of physiology in general (collective physiology) and is treated as such in teaching, a minute treatise on the general physiology of the muscles is no longer offered in an academic course of medicine. The time thus gained is to be employed in other departments of physiology such as a treatise on the change of matter, and the physiology of the nervous system.

The amount of instruction in physiology of muscle and nerve has been indicated in my *Manual of Practical Physiology*. Looked upon from the extreme utilitarian standpoint it still constitutes a valuable preliminary training for the neurological clinic.

An exceedingly difficult question on the choice of subject matter in physiological instruction still remains to be answered: Shall physiology consider psychological questions and to what extent? Johannes Müller defended the thesis: *A physiologist nothing but a physiologist*. There is a great deal to be said on this question and it cannot be disposed of in a few words. It might be well for everyone engaged on biological problems to consider casually the question of the relation of material to psychic life, the question of the relation of body to soul, as it is called in current dualistic expression; for this question confronts us at every turn in biology. It plays into all possible contingencies and causes obscurity and confusion. Every biologist ought to come to terms on this question, and this can be done only by entering upon a critique of the understanding and especially upon the problem, what understanding is, and what its limitations are? No naturalist can get around this, the supreme question in science, unless he is willing to surrender needlessly to blind specialism.

But whatever the answers to these queries, complete elimination of psychological elements from physiology and from physiological instruction is practically impossible. The chapters on the central nervous system and on the organs of perception cannot yet be discussed without psychological concepts, such as sensations, conceptions, consciousness, etc., otherwise than to render their presentation unintelligible. Besides, the later lectures on psychiatry will engage psychological considerations abundantly. Hence it is impossible to avoid entering upon psychological questions in physiological instruction, even if it were desirable to do so, and hence it will be advisable to take a firm stand and gain some clearness right in the start.

In consideration of the great complexity of the subject of physiology, and the difficult methods of approach in gaining insight and knowledge, it is necessary and all the more so in the lectures that instruction be as objective as possible. This is to be accomplished in two ways.

On the one hand the content will be presented in a simple plastic, living style. The utmost attainable clearness and simplicity are emphatically aimed at. Burdening the memory with numbers, tables, and formulas that are difficult to master and do not stick, will be avoided as much as possible. True,

numbers and tables will not be withheld, but shall be offered only to illustrate certain facts. The student is to extract facts and ideas and to have at his command visualized pictures, not tables and numbers that can be obtained from any reference book when needed. An error into which physiological instruction easily falls is—too detailed entering upon the presentation of the more complicated methods and the arrangement of apparatus and experiments in special lines of research work. Surely, for better understanding, the student ought to be informed as to the ways and means of arriving at certain physiological experiences. But this end is fully reached if the principle of the method or of the apparatus is sketched in the most primitive outline. Exact knowledge of every minute detail, on the contrary, complicates understanding, burdens the memory, and serves to no after purpose. These items belong to physiological research work, but not to physiological instruction. In either case it must not be forgotten that the live subject in hand is to stand in the foreground. Method is only means to an end. (Hemmeter, *Manual of Practical Physiology*.)

On the other hand, it is a function of physiological instruction to give a thorough knowledge of the more common and simpler methods which physicians must make constant use of. An acquaintance with certain chemical, optical, microscopic, electric, and surgical methods is indispensable for special medical purposes.

Other important factors toward attaining visualization of the subject matter of the lecture, are demonstrations and experiments. The most beautiful and clear presentation cannot be a substitute for that which has been "eyewitnessed," provided it has been understood. The lecture should be aided and supported as much as possible by demonstration on its subjects; but too intricate and unsurveyable experimental appliances and arrangements should be avoided, since these, according to experience, do not help understanding and often only perplex and subvert it. Clearness, perspicuity, comprehensibility, these must be the shibboleth of physiological instruction. Where the experimental contrivance or the apparatus is too complicated or inconspicuous, it will be far better to supplant it with a single schematic sketch on the blackboard or by a correspondingly simple figure on a chart. This device, and above all the drawing of objects on the board during the lecture, ought to find liberal application; for, on the one hand, the instructor can omit what is subordinate, or what would impede understanding, and, on the other hand, the audience sees the object gradually developing before it, so that, in following the drawing, the demonstration becomes intelligible, whereas, if confronted with the finished drawing, the latter would be quite unintelligible. It is my own practice to draw on the blackboard whenever it is feasible.

Finally, another important question in conducting physiological lecture courses is, whether and to what extent shall theories and hypotheses find application? There are many who consider it a transgression if "improved hypotheses" are spread abroad in teaching. In defense it may be said that there is no such thing as physiological instruction

without theories and hypotheses. I have shown at the outset that physiology, on account of the many difficulties to be overcome in investigating biological hypotheses in order to unite facts under general points of view, to bring about some connection between them, must, by experiments that originate in hypothetical reflections, arrive at new facts. For the same reason that physiological investigation makes use of working hypotheses, physiological instruction demands consideration of such hypotheses, if this is not to come down to a worthless enumeration of disconnected, barren, isolated facts from which no visualized lasting pictures of the processes in the body can be gained.

Frequently it is only through consideration of theoretical and hypothetical conceptions in physiology that it becomes intelligible how attention was directed to some important problem in physiological investigation and why certain experiments were instituted, all of which would otherwise seem unprovoked and inconsistent. Theory and working hypotheses form the mental bond that combines the several facts to complexes of coherent consistency. But physiological instruction is under obligation to sift clearly between fact and hypothesis. The student is therefore not to be surprised at such expressions as "this is yet unknown," "this question is still in total obscurity," "the following idea, with some degree of probability has been temporarily advanced," etc.

The physiological laboratory work is an indispensable complement to the lecture course, and that for various reasons. The best theoretical instruction, the most lucid and most perspicuously comprehensive demonstration will not accomplish what an individual preparation, what an experimental contrivance, personally instituted from start to finish, what an operation individually performed can do for the agent. Not by being shown how, but by completely doing, do we learn actual mastery. In consideration of the time, only a limited range of experiments and demonstrations can be produced in the lecture, and that only after careful and conscientious preparation. The student does not see the preparation, he never learns of the many details requisite, he is not aware of the great amount of circumspect forethought that the simplest physiological experiment entails. The instructor, who is constantly manipulating on the other hand, often takes no account of the many little requirements that he meets mechanically, and easily neglects to call attention to more important points. There is no answer to the questions that may arise during the lecture. For all this the physiological laboratory offers a compensation. Here the student conducts all those experiments witnessed in the lecture room and some that could not be produced in the short time of forty-five minutes.

Of course, some physiological knowledge is necessary for all this, hence the laboratory ought not to be open to the student until the second year of physiological instruction. But there is another reason for laying great stress on practical exercises, and that is, their technical side. According to experience many of the younger physicians have had but little opportunity up to the final examination to acquire a certain amount of dexter-

ity, care, and cleanliness in the handling of apparatus, instruments, chemical reagents, living objects, etc. But these are all things that engage the physician constantly in his practice. Without their unflinching and absolute mastery he would have, not only to renounce many methods of investigation and treatment, but he would commit one of the worst blunders for a physician striving after a practice, he would forfeit the confidence of his patients by his awkwardness and indecision. Decision, adroitness, dexterity, and cleanliness in bearing, as well as in his manipulations, are the most important external qualifications of a physician.

Working in the anatomical laboratory, which offers a good opportunity for practice in such things, is, however, only onesided. There is, moreover, a difference between performing an operation on a living organism, and doing the same on a bloodless corpse. The young physician will have ample opportunity to experience this. Things look quite different when the blood is coursing through the minutest parts, and in the end the physician will have dealings mainly with living human beings. The physiological laboratory offers a many sided possibility for the exercise of manual dexterity in every possible way. It is for this reason that so many detailed operations on animals are described in my *Manual of Practical Physiology*, which Professor H. J. Hamburger and Doctor Laqueur speak of in such favorable terms in their review of this work (*Biochemisches Zentralblatt*, 1912).

Here there will not only be vivisection, but electrical contrivances, preparations for the microscope, graphic representations of breathing, of blood pressure, of muscle movements, chemical reactions on animal fluids, weighing, measuring, and much more. It is of great value to the student to carry out every detail himself to a nicety, as the simplest manipulation can be of great service.

But beside this practice in dexterity and adroitness in the handling of both live and dead objects, the physiological laboratory ought especially to offer opportunity for manipulating all things that find constant application in practice. The student is to make albumin, urea, sugar tests, etc., to investigate the properties of normal urine, to examine the fluids of the body under the microscope, to execute subcutaneous and intravenous injections, to tie arteries, to stimulate with electricity, ascertain the intensity and volume of electric currents, etc.

For all these reasons it would seem that the practical laboratory work in physiology is quite indispensable and its pursuance in the second year before the final examinations is highly recommended. In order to make the laboratory work possible, with its great burden on the short time devoted to the study of medicine, its time allowance has been fixed at two periods of three hours each weekly.

If lecture courses and laboratory work are to be considered absolute essentials in the physiological training of a physician, then it must be made possible for those who are not satisfied simply with the required course, and for those who for various reasons could not follow some part or other of the physiological lectures, to be set straight on certain chapters. The physiological "seminary" or the con-

ference and special lectures and courses on minor or major departments of physiology serve this purpose. But opportunity must also be offered to satisfy and promote the somewhat farther reaching interest in physiological questions of some students. This need is met in the individual work performed in the physiological laboratory where instructors and assistants are ready to give the necessary stimulus and aid. Naturally only such will engage in this independent work as have finished with the required instruction and training in physiology. Beside this, the "seminary" should be open even to the younger students who are still attending the regular courses on physiology and who desire some little incentive by being heard on physiological questions. This "seminary" is not to be a reviewing hour in which to prepare for examination, and for which certain tasks are scheduled and gone through with; it is rather to be an informal chat on some physiological problem of more general interest, on modern points of view, on physiological questions of the day, on important news in physiological literature, on various interpretations, opinions, issues in physiological problems, on the more interesting and more important parts of the general lectures and courses, in short, on anything that may claim attention physiologically. The sole object is to arouse interest in physiological problems and to introduce men to physiological ways of thinking.

In this unconstrained form, lacking all didactic varnish, a number of physiological visualizations, teachings, and facts will unconsciously be absorbed and assimilated, with which the formal lectures would probably not have familiarized, and all this without the impression of having been at work. An incentive is perhaps the best that research work and teaching in the science can offer. Truths are only relative and change with time. But interest begets development and development is progress.

If I were asked to express the secret of effective physiological laboratory work in one word I should say—*punctiliousness*.

739 UNIVERSITY PARKWAY.

SPINAL ATAXIA IN THE AGED.

BY CHARLES W. BURR, M. D.,
Philadelphia,

Professor of Mental Diseases, University of Pennsylvania.

Though we occasionally read of cases of tabes commencing very late in life, most frequently the symptoms begin to appear in the decade between the thirty-fifth and the forty-fifth year. The average age at death in thirty-three successive patients at the Philadelphia General Hospital—the same thing is shown in larger statistical tables (see the Causes of Death in Locomotor Ataxia, *Journal of Nervous and Mental Disease*, March, 1912)—was fifty years. This would seem to be a roundabout way of proving the rarity of the disease in the aged, but it has its value. One of the patients in the series, however, who died at seventy-one years, alleged that his illness had not begun till he was sixty-seven years old. At first I doubted the correctness of the diagnosis, but I was convinced finally that the

case was genuine and I am not, therefore, prepared to assert that true tabes (posterior sclerosis) never begins in old age, though I am sure that far more frequently spinal ataxia beginning after sixty years is due to diffuse arterial disease within the spinal cord, the lesion being more intense in the posterior part of the cord, but without the presence of a true primary, posterior sclerosis.

Ataxia from any cause is not frequently seen in the aged, because those in whom it has developed in the period of maturity die before old age begins, and it is very rare for it to begin in old age. In examining an elderly patient who is ataxic, if we do not know the history and judge simply from the general appearance and the ataxia, we may jump too quickly to a diagnosis of true tabes. If all the classical symptoms are present, and the history of the manner of the onset is that of tabes, there is no escape from the diagnosis, but as a rule the mode of onset of the symptoms in old people is found to be unlike that of tabes, and some or many of the important subsidiary symptoms are absent. In the few cases of spinal ataxia in the aged that I have seen, barring the one mentioned in the article on the causes of death in locomotor ataxia, none has given a history of preceding pains in the legs, the onset of the ataxia has been very rapid in every one, once reaching a marked degree in a week, and there has been in all from the start some, not always marked, paralytic weakness in the legs, coming on synchronously with the ataxia.

In the pseudoparaplegia of the aged caused by actual sclerosis in the arteries of the legs, there is often a dull, aching pain in the affected extremities, and occasionally sharp pain, but there is never ataxia. In senile spinal ataxia I have never seen an instance of crises of any kind, nor any trophic joint changes. In one patient the ataxia was, a few days after the onset, as marked in the arms as in the legs; in a few other cases the arms escaped altogether. I have not seen true Argyll Robertson pupil nor spinal miosis. One patient had a transitory palsy of the bladder. In several of the cases the ataxia improved greatly under rest, massage, and proper attention to the vascular system and alimentary canal. I do not mean to say the patients were cured; they were not, but they were greatly improved for the time being. They all relapsed and finally died with the symptoms of a diffuse, widespread lesion of the spinal cord, a myelitis.

The points of resemblance to true tabes are the ataxia itself, which is manifestly not cerebellar, but spinal, and the absence of the knee jerks. The things which differentiate it from true tabes are the rapidity of the onset, the absence of pain, the early appearance of more or less palsy, the temporary improvement in the ataxia under treatment, and the final stage, that of a myelitis.

The matter is of some little importance because when we diagnosticate tabes in old people, no matter whether it is of long standing or recent in onset, we are all very pessimistic as to the value of treatment, whereas these other patients suffering from a thickening of the bloodvessel walls within the spinal cord can be definitely aided by therapeutics.

1018 SPRUCE STREET.

OCULAR MANIFESTATIONS OF ANGIOSCLEROSIS.*

By D. F. HARBRIDGE, M. D.,
Philadelphia.

The etiological, pathological, and clinical manifestations of angiosclerosis have, of recent years, attracted considerable attention. To the oculist angiosclerosis is of particular interest, the eye being the window through which we are able not only to examine with exact precision during life the local manifestation, but to interpret its expression of a general condition, for many pictures of the vascular system in the fundus oculi represent little leaks, which later may become greater breaks elsewhere in the human economy.

Truly grave cardiovascular changes may be present, but lack subjective, symptomatic, evidence, thus escaping observation until occasion requires the individual to consult an oculist, possibly, as he presumes, for some refractive error. Then the picture so patent of these changes reveals itself.

It does not necessarily always follow, however, that because we have vascular disease of one system of vessels, that all others in the human economy are similarly involved, but when it is present, it is to be taken as a danger signal with which every careful practitioner should be fully conversant. It is to be feared that sometimes physicians and patients do not attach sufficient importance to the diagnostic value of the oculist's information regarding incipient vascular changes.

Treacher Collins describes arteriosclerosis "as a general disease with a predilection for certain localities." Localized to the eye it has a wide influence on many conditions. Whether this condition is apparently, or of purely relative increasing frequency in our more modern strenuous and irregular habits of life it is difficult to determine, owing to a refinement of technique and more acute observation. We are rather accustomed to think of arteriosclerosis as a senile manifestation, but, as a matter of fact, it is of not infrequent occurrence in young or middle life. In the study of forty patients by Allman fifteen were under the age of thirty years.

Vascular changes to a greater or less degree may be anticipated in practically every human being over sixty years old. Its onset may be even earlier, influenced largely by environment. It is mild at first, slowly progressive, involving more or less uniformly all parts of the vascular system, and almost wholly lacking in subjective symptoms, thus evading observation. On the other hand, the presenile type is much more liable to be symptomatic, localized with more frank involvement of certain organs, and is to be classed as more definitely pathological.

Many organic manifestations of arteriosclerosis are not to be taken as primary, but rather secondary to a general involvement, they constituting only a portion of the whole clinical picture. The symptom complex resulting in vessel, kidney, and heart involvement familiar to us all, it is often difficult to determine where the primary lesion occurred.

Clinicians divide arteriosclerosis into three stages: The incipient stage, difficult to recognize, and yet of eminent importance in the prognosis of a given case;

*Read before the Milwaukee Medical Society, January, 1911.

an intermediate period, a time in which organic involvement is distinctly recognizable; and a terminal stage, in which there is decided embarrassment of organic function.

In the matter of etiology, there still exists a wide diversity of opinion regarding the exact association of intemperance in food and drink, mental strain, syphilis, gout, rheumatism, laborious work, and heredity. However, it is to be noted that syphilitic infection has certain distinguishing features.

Owing to the obscurity of the onset in the incipient stage, it is difficult to determine whether the underlying cause is of metabolic, chemical, or physical properties. Stengel, from his own clinical study, is rather inclined to believe that there is in the early stages, a decreased blood tension with possibly a paroxysmal elevation, and that the process is initiated by an underlying toxic alteration in the media and intima, causing rather a relaxation and then a spasm of the peripheral vessels.

The late Doctor Stanton did a great deal to stimulate interest by insisting upon a preliminary stage of continued high blood pressure. Doctor Stanton's sphygmomanometer, which perhaps is as practical an apparatus as any on the market, is the one by which all my cases have been studied, up to the time of the inventor's decease. It was my good fortune to enjoy the advantage of much of his knowledge regarding vessel tension. He always insisted upon the importance of observing both the systolic and diastolic tension, the former ranging from 100 to 140 mm., the latter from eighty to ninety mm. in healthy persons of average age. In younger subjects it is somewhat lower, and in those advancing in years somewhat higher, but a systolic pressure above 160 and a diastolic above 130 mm. is to be considered as bordering upon pathological.

The rôle played by arterial tension in the production of arteriosclerosis he qualified by various types: First, those in which persistently high tension is a result of spasm, due to prolonged nervous stress combined with certain abuses in diet, etc. This type represents the first stage and is the most amenable to a favorable prognosis; second, those in which tension is high, because in addition to spasm, there is a gradually developing, or already developed fibroid change in the vessels, a type representative of the intermediate stage; third, cases in which after prolonged periods of high tension, persistent low tension more or less suddenly develops in the arteries, which are relaxed and distended. This is the terminal stage in the clinical picture.

Here pointed out the interesting fact, that while nitroglycerin reduces the hypertension due to spasm, it is valueless where there is fibroid change.

The pathology of the arteriosclerotic process is one of very great interest, and has been extensively studied by many eminent investigators, Marchand, Professor Aschoff, McKenzie, of Toronto, Dixon, of Cambridge, Adami and Klotz, of McGill University, and many others. We will quote, however, on this phase of our subject more or less freely from Professor Adami's interpretation of Doctor Klotz's observations, which he presented in the Annual Address to the Pathological Society, Philadelphia, April, 1909.

The processes of sclerotic change have been ar-

ranged in three main orders of disturbance: First, the most common, ordinary nodose arteriosclerosis, showing itself in moderate cases, as a yellowish white thickening or sclerosis, more particularly at, or around the origin of the side arteries, notably affecting the origin of the intercostals. This form more particularly passes into the condition of atheroma and of calcification of the intimal plaques.

Second, the Möenckeberg type, recorded by this investigator in Virchow's *Archiv*, clxxi, page 141. In this type is observed hardened and at times pipestem radial arteries, but in the larger vessels, e. g., the aorta, instead of there being a nodose thickening of the intima, the vessel wall appears thinned, with areas of giving way, and slight saccululation. The volume of the tube is increased not only in breadth but also in length. It is not a sclerosis, but a degeneration, involving more particularly the media of the large vessels, while in the smaller arteries there is a marked sclerosis, and an intima fibrosis. This is inclined to be regarded as the uncomplicated senile type, pure examples of which are relatively uncommon. The commonest condition in elderly persons is a combination of these two first types.

Third, the syphilitic type. The nodes particularly in the larger vessels are found in groups, which are of the succulent, semitransparent, or hyaline appearance, having very little tendency to atheroma or calcareous change, but exhibiting a scarring with a central depression and some puckering.

All these various types are harmonized under a common order of events, a weakening of the media being the primary disturbance, and if this is above a certain grade, there is a pronounced giving way, without intimal compensation; if below this grade, a strain hypertrophy of the intima is manifested, leading to the production of intimal thickening.

In the syphilitic type the giving way of the media is more extreme, and so we encounter more frequently advanced aneurysmal formation, contrasted with the shallower sacculations of the Moenckeberg type, and in this, also occurring as a rule earlier in life, there is a more exuberant regenerative power exhibited by the intima.

These events may ensue when, on the one hand, the artery has undergone weakening and the blood pressure is normal, and when, on the other hand, the artery has no preliminary degeneration of its media and the blood pressure is above normal. Therefore, it is not necessary to have a blood pressure which is permanently above normal. An acute rise for a short period, frequently repeated, will bring about the result.

The importance of arteriosclerotic changes in relation to eye manifestations hinges on two anatomical conditions. The eye, as we have observed, is an end organ containing two very important structures, namely, nervous and vascular. First, the nervous structure is developmentally an epiblastic forward outgrowth of the brain, the spinal cord being a posterior outgrowth. As the optic nerve passes forward and spreads out, forming the retina, there is an absence of the neurilemma which likely explains the greater susceptibility of the fibres to degenerative processes. There may be, however, a greater or less temporary loss of function without

absolute destruction, as in retrobulbar neuritis, or the temporary pressure of the sclerosed or obstructed vessel in its course through the optic canal or entrance at the lamina. Second, the vascular system represents terminal vessels (as found in the kidney); we refer obviously to the retinal vessels. The anatomical arrangements of these vessels is of considerable interest, particularly in the study of obstructive diseases. The ophthalmic artery comes off from the internal carotid at right angles, the branch forming the retinal artery leaving the ophthalmic artery also approximately at right angles, this artery making a sharp bend as it enters the substance of the nerve, eight to fifteen mm. back of the globe, and again making a final bend upon spreading out on the head of the optic nerve. The artery, which is very small, 190 microns in diameter, contains all the structures of an ordinary vessel, the media and adventitia, however, being very thin and lending itself readily to compression.

This anatomical arrangement of these two structures explains why disease is so destructive; there being no compensatory method of repair, regeneration is very limited.

For clinical purposes we may conveniently arrange vascular disturbance manifesting itself in the eye, as affecting external and internal parts, each in turn being visible or invisible, but all impairing more or less seriously the function of the eye, and acting as a strong index to the welfare of the general economy. We must not, however, regard any form of local vascular lesion as the direct effect of renal or other disease, but as the result of an altered state of the blood, or vessel wall, or probably both. Those disturbances affecting external parts may be illustrated by citing specific cases.

CASE I (quoted from memory). H., male, age fifty-five years, city fireman, presented himself at the clinic in the eye department of St. Mary's Hospital, in 1899, complaining that his eyes seemed swollen and too large for the orbits. A moderately puffy edematous, movable, bulbar conjunctiva was observed, and a snap diagnosis of renal involvement made. The fundus examination revealed a moderate arteriosclerosis; no hemorrhages or exudates were discovered; vision good; the urine was loaded with albumin. Death ensued within one year.

This case represents a chemosis of the bulbar conjunctiva due to a transudation from sclerosed ciliary vessels.

CASE II. B. S., female, age thirty years, in January, 1906, consulted the writer at the eye department of the Chester Hospital regarding a marked redness of the left eyeball, which occurred suddenly overnight. It was the fourth occurrence following some febrile condition two years previous. Examination showed the vision to be normal, the lower half of the bulbar conjunctiva being occupied by hemorrhage. The retina was slightly hazy, the vessels were moderately sclerosed, and the nerve head was hyperemic. Systolic blood pressure, 170 mm. diastolic, 100 mm. The urine contained a trace of albumin and three or four hyaline casts.

This case is representative of a type of subconjunctival hemorrhage, which is frequently a forerunner of a fatal termination, due to kidney involvement. The patient, however, was warned, and has regulated her life accordingly, and up to the time of her last visit, December, 1910, has enjoyed comparative good health with one recurring hemorrhage six weeks previous to her last visit.

The following case represents a type in which

the manifest condition is extraocular, the primary lesion being conjunctural.

CASE III. M. F., aged fifty years, saloon keeper, consulted the writer at the eye department of the Chester Hospital, in July, 1908, complaining of diplopia of one week's duration. The patient was just recovering from a severe attack of acute articular rheumatism, which was one of several previous attacks. He was an inordinate user of wine and malt liquors; denied specific infection. Examination showed vision to be normal, with a paresis of the right external rectus. The fundus vessels presented marked evidence of arteriosclerosis, the veins, particularly the inferior temporals, were greatly engorged and indented at the artery crossings, the distal extremities being greater than the proximal. The nerve heads were dirty gray. Urine contained albumin with a specific gravity of 1.012. A diagnosis was made of paresis of the right external rectus, due to a small hemorrhage in the nucleus of the sixth nerve, very probably the result of secondary cerebral involvement of a primary general arteriosclerosis.

The paresis disappeared in three months' time under appropriate treatment. Like conditions have been recorded in which the superior oblique muscle has been similarly involved.

We now come to that division of our subject which perhaps after all is of the most vital importance, the early diagnosis of angiosclerotic changes in their incipient stage. The writer refers to the circulatory system of the fundus oculi, of which those experienced with the use of the ophthalmoscope can read the picture with such exact precision; "the handwriting on the wall," as it were.

We have noted earlier in this paper that angiosclerosis is not alone the product of old age. Many persons considerably beyond the age at which we naturally expect to find these changes have practically healthy vessels; on the other hand, it is not entirely uncommon to find these changes in comparatively young persons.

The earliest evidence strongly suggestive of vascular change is the presence of corkscrew retinal artery twigs, particularly in the macular region; also a dull red nerve head, flattening of the veins at artery crossings, sluggish pupillary reaction, early failure of accommodation, partial or complete senile circle in the cornea, persistent headache in spite of careful refraction, particularly at the beginning of presbyopia, and the history of more or less frequent attacks of gastric or bronchial disturbances, which make the patient really sicker than the condition would seem to warrant.

Obviously to be pathognomonic, there must be certain definite conditions indicative of the very earliest positive changes. These conditions having been concisely set forth in Mr Marcus Gunn's comprehensive communication in the *Transactions of the Ophthalmological Society of the United Kingdom*, xviii, 1898, should therefore commend themselves to us as of paramount importance in the early recognition of vascular disturbance. In the early recognition of the primary evidence of arteriosclerosis, one cannot always determine precisely in what organ in the human economy definite pathological lesions are to occur, but as our subject is confined to the organ of sight, our discussion will accordingly be construed as affecting that organ only. The classical arrangement of the evidence of incipient arteriosclerosis as observed by Gunn,

Hirschberg, Friedwald, de Schweinitz, and others may be summarized as follows:

First, change in the course and size of the retinal arteries manifested by an undue tortuosity associated with other evidence of disease, alteration in the calibre of the retinal arteries, which may be a general contraction of one or more branches, or an alternating contraction and broadening in the same artery, or an artery may be practically normal in size, then more or less suddenly become greatly reduced in size, and continue as such out toward the periphery.

Second, change in the course and size of the veins with signs of pressure. The conditions are very similar to those just described in the arteries, with the addition of pressure signs, manifested by the obstructed venous flow, a point upon which Gunn places the utmost importance. Ordinarily at healthy vessel crossings there is no depression, but in arteriosclerosis the artery is more or less rigid, the walls being thickened, and upon crossing the vein compresses or indents the same, the distal end of the vein being as large as or usually larger than the proximal end; at times it is ampullated. This condition of the vessels is frequently referred to as Gunn's vessels.

Third, change in the vascular reflex, such as definite alteration in the vessel walls, showing a whitish strip of infiltration in the perivascular lymph sheaths; more marked brilliancy of the central light streak, due to intimal changes frequently described as "silver wire arteries"; last, a paleness and loss of vessel transparency.

Fourth, retinal changes, indicated by a grayish haze about the nerve head and along the course of the vessels.

Fifth, hemorrhages, usually manifested in the more advanced cases. There may be faint linear areas near and parallel to the vessels, or scattered round dots, or more extensive blotches. Often there are scattered yellowish white spots, many partially or wholly bordered by pigment.

While the foregoing is representative of a definite, well defined picture, found in early, either local, or general manifestations of arteriosclerosis, it is only occasionally that patients are referred for examinations for prognostic purposes, which are not usually discovered unless perchance they come for some other intercurrent condition. To illustrate:

CASE IV. M. B., male, aged sixty years, consulted the writer, December, 1910, for treatment for a subacute conjunctivitis. Vision, with correction, =6/6. There was a complete circulus senilis, both lenses swollen and hazy. Fundus examination showed overcapillary nerve heads, surrounded by hazy or foggy retina, and a number of scattered spots of retinal degeneration. All the vessels were reduced in size, the arterial twigs very tortuous, the larger vessels not so tortuous, but pale and very uneven in calibre, moderate indentation at crossing, the perivascular spaces fairly well prominent. Urine 1,012, small amount of albumin, blood pressure low, 75 mm., high 115 mm. No heart murmurs; pulse eighty and weak.

CASE V. A. K., female, aged thirty-three years, first seen in August, 1909, presenting all the signs of acute glaucoma of the right eye (she was using atropine prescribed by her family physician). There was present in the left eye moderate evidence of arteriosclerosis, corkscrew retinal twigs, and a reddish gray nerve head. The perforating vessels on the sclera were very tortuous. Ten-

sion normal. Urine negative. Blood pressure, low, 85 mm., high, 160 mm.

The patient refusing an immediate operation, eserine was employed unsuccessfully. A few days later cyclodialysis was performed without any permanent amelioration of symptoms. A few days later iridectomy was resorted to, and shortly after the operation the patient suffered an unusually severe ocular pain. Examination showed that an interocular hemorrhage had occurred, necessitating enucleation.

Case IV represents the senile type of arteriosclerosis, undoubtedly of frequent enough occurrence, but observed as a rule only in association with some other condition. Case V is not of particularly rare type, but represents a fairly unusual series of events, in which unquestionably arteriosclerosis of a presenile type was a factor.

Having referred to the more or less characteristic features of the incipient changes of arteriosclerosis it may be of interest to note what definite pathological lesions may result in the fundus oculi. If the condition progresses and there is a kidney involvement, certain definite ocular lesions may occur, known as albuminuric retinitis. So familiar is this picture to those of us who use the ophthalmoscope that it scarcely seems necessary to venture a description. It may, however, be of significance to refer to the diagnostic value of these findings. Authoritative statistics vary widely regarding the frequency with which retinal lesions occur in all cases of chronic Bright's disease; it is estimated at from nine to thirty-three per cent.—this latter figure given by Galewski, while Norris placed it at twenty-five per cent. Regarding the prognostic value of such observations in estimating the possibility of a fatal termination, there is not quite so wide a discrepancy. To illustrate, Belt collected 419 cases, both private and clinic patients; seventy-five per cent. died within one year, ninety per cent. of the remaining within two years. Of 155 private patients, sixty-two per cent. died within one year, eighty-five per cent. in two years, and fourteen per cent. lived more than two years. Bull collected 103 cases, of which sixty-nine ended fatally within two years. Not any of Haab's patients applying at the clinic lived over two years, while with his private patients fifty-nine per cent. of males and fifty-three per cent. of females died at the end of two years. This he accounts for by their being able to enjoy a better environment. Miley traced forty-five cases, and found four months to be the average duration of life from the time eye changes were first observed. In my own experience the two extremes may be represented, one by a clinic patient dying in ten weeks, and a private patient, first observed in April, 1906, being still alive and enjoying fair comfort, but with vision greatly damaged.

Other more or less destructive lesions of the arteriosclerotic process observed in the eye may be arranged under the heading of obstructive diseases, such as embolism, thrombosis, spasm of the retinal vessels, and those secondary conditions resulting from the pressure of a sclerosed vessel upon some portion of the delicate conducting nervous tissue.

Any obstruction to the retinal circulation, if long continued, means destruction of sight, partial or

entire, depending upon whether it is the main trunk or a branch vessel involved, or whether the obstruction is temporary or permanent. The reason for this widespread destruction must be manifest, as we have referred to the fact that the retinal vessels are terminal vessels entirely wanting in anastomosis, so therefore a collateral blood supply cannot be reestablished to afford nourishment to the affected part.

Embolism or thrombosis in the vessels may occur in the young as well as the old. In the former there may be no signs of sclerotic changes and usually no albumin, but it accompanies or follows some acute infection. In the old there may be a history of syphilis, septic poison, rheumatism, or gout. The prognosis as to vision is poor in either case; as regards life, it is to be considered poor in the old.

Vascular disease may be endothelial, causing a narrowing of the lumen of the vessel, or it may be due to a thickening of the connective tissue wall. The former may be caused by a circulating toxine, and the latter by increased arterial tension, or both. In the young, inflammatory changes may predominate, with a round cell infiltration and thickening of the connective tissue, with proliferation of the intima resulting in a retinitis proliferans.

Perhaps the most frequent location of vascular obstruction (that is when the entire tree is involved) is just behind the lamina cribrosa. Knapp, in 1869, pointed out that thrombosis may give rise to retinal hemorrhage. Galezowski, the same year, referred to the condition as being more frequently observed unilaterally. Michel, in 1878, gave the first complete clinical and anatomical description, so well known to us, the sudden blindness, marked dilatation, and tortuosity of the veins, and relatively narrow arteries, splottchlike hemorrhages, and the more or less swollen nerve head.

There has been in the past, and still continues to be, considerable speculation as to exactly the pathological nature of the causal lesion in diseases obstructive to the vascular flow. A serious obstacle in determining specifically the nature of these changes is, as Doctor Zentmayer points out, "the length of time which elapses between the occurrence and the opportunity of securing a necropsy. Velhagen, of Chemnitz, in the *Klinische Monatschrift für Augenheilkunde*, No. 2, page 440, 1905, reports a case in which the patient died two months after the occurrence of obstruction. A microscopic examination showed an embolism of the central artery of the retina at its entrance into the intravaginal space. Shoemaker, of Philadelphia, reported in the *Transactions of the American Ophthalmological Society*, ii, 3, 1908, a case of what he believed to be embolism of the macular branch, which was examined microscopically by Hosmer eighteen days after its occurrence.

Von Graefe, in 1859, first discovered the clinical picture which we know or rather believe to be embolism of the central artery of the retina or its branches. Mauthner expressed doubt as to embolism, in explaining all cases, and believes many to be susceptible of a different interpretation. Nettleship, Loring, and Noyes accepted Mauthner's views, while Leber and Manz believed that thrombosis may be the causal factor, and this is accepted by

Haab. This has led many German observers to refute the embolic theory. Marple and also Coats believe these views of the Germans to be too radical. However, at the present time the writer is of the opinion that it is pretty generally believed that arterial obstruction may be due either to local processes or embolism. If we recall the branching, the course, frequent bends, and the smallness of the lumen of the artery, as has already been referred to, it is a little difficult to believe in the probability of an embolism frequently gaining entrance, yet we must freely admit the possibility of such an occurrence. My own deduction is, that there are a certain number of genuine embolic cases, which, however, are rather the exception, other cases being due to a proliferating endarteritis likely originated by a circulating toxine; still others being due to an intrusion nodosity with temporary lower blood pressure, or a spasm of the vessel wall causing blocking, and in time complete closing. In most cases of obstruction there is a premonitory symptom of periodic dimness or loss of vision often covering a considerable space of time, which to my mind rather militates against the embolic theory.

The classical arrangement of a clinical picture of obstructive disease being well known, or at least easily obtainable, it may be of greater interest to repeat briefly the case history of three patients coming under my observation, one quite unique and two particularly interesting. All have been recorded before the section in ophthalmology of the College of Physicians, Philadelphia.

CASE VI (published in *Ophthalmology*, July, 1905, as a preliminary communication of a case of transient visible spasm of the retinal vessels). The patient was a male, aged fifty-nine years, with a syphilitic and rheumatic history, who suffered temporary loss of sight, lasting four or five minutes, and recurring every thirty to sixty minutes, covering a period of eleven days. During these attacks the writer and his friends were afforded frequent opportunity to observe the phenomenon of complete emptying and collapse of all the retinal vessels, beginning with the inferior temporal artery, loss of sight, remaining for four or five minutes and then gradually all vessels refilling, beginning with the inferior arteries, and followed by restoration of sight, the veins becoming enormously distended. During an attack the vessels appeared as ribbons, the retina moderately hazy, but no cherry red spot or other macular changes were noted.

Further notes concerning this case were published five years later in the *Annals of Ophthalmology*, July, 1910. During this interval and up to the present time there has been no recurrence. The phenomena observed were accounted for by assuming that it belonged to that type of arteriosclerosis due to syphilis, in which there is present a granulomatous inflammatory degeneration affecting the muscle tissue of the media, the elastic fibres escaping, resulting in a small succulent, semitransparent, hyaline appearing elevation, which by virtue of the weakened media is replaced by strain hypertrophy of the intima and adventitia resulting in an intrusion nodosity of the intima. Thus, any moderate reflex vasomotor disturbance inducing a slight vessel wall contraction, and causing an intrusion of the nodosity into the lumen of the vessel, resulted in a more or less temporary blocking of the blood current. Treatment consisted of potassium iodide and mercury bichloride and thorough purging with magnesium sulphate.

CASE VII. Transient monocular hemianoptic blindness, first seen October 5, 1905, M., aged sixty-three years; pulse 60, losing a beat four or five times a minute. Systolic murmur in the apex. Blood pressure, low seventy to eighty mm., high 140 mm. For six months previous to patient's first visit he experienced periodic total obscuration of vision in the temple half of the field of the right eye. These attacks occurred in series of two or three each, lasting half to one minute, the series of attacks recurring two to four times weekly and covering a period of fourteen months, the last occurring on June 7, 1906; during the interval up to the present there has been no recurrence. Ophthalmoscopically, there was present a moderate degree of arteriosclerosis, but at no time was actual collapse of the vessels observed.

Treatment consisted of potassium iodide, saline purge, nitroglycerin, and for the attacks nitrite of amyl pearls. This latter drug he always carried with him, and if he was able to use it promptly, it always cut the attacks short. The causal factors were assumed to be similar to those of Case VI excepting that the sclerosis was the true senile type, for, according to Klotz, there is a physiological atrophy of the media after fifty years of age, which even with normal blood pressure may present intimal thickening, a strain hypertrophy showing as a yellowish white thickening (which may or may not receive a calcareous deposit), this condition showing a predilection for the origin of small branch arteries, for example, the intercostals, branches of the coronaries, etc. With these conditions present in certain of the branch retinal vessels, and a temporary lowered blood pressure such as this patient undoubtedly had, we may easily appreciate a temporary blockage of the blood current.

CASE VIII. Female, aged thirty-one years; rapidly increasing loss of sight with permanent blindness ensuing, due to obstruction of the retinal circulation, with the premonitory symptom of misty vision. Death from uremia followed ten months later. Time will hardly permit our going into the details of this exceedingly interesting case. Suffice it to say, however, that the circulatory phenomena were frequently examined by the writer and his friends during various stages of partial or complete collapse of the vessels; there were broken columns of blood current passing in the reverse direction, edema of the retina, a large cherry red spot at the macula, and at times the vessels operated practically normally.

Treatment consisted of potassium iodide, mercurial ointment, nitroglycerin, nitrite of amyl, sweats, saline purge, and deep massage, but all were of no avail. Regarding the nitrite of amyl and massage, it may be remarked that following the use of either of these measures, an examination of the fundus showed filled and practically normal appearing vessels. The theory regarding the pathology of this case is, that it belongs to that type of sclerosis in which there is a fibrosis of the intima, a cellular proliferation of the intimal endothelium, leading to an obliterative endarteritis, the primary cause being some form of circulating toxine. There are certain other vascular changes causing visual disturbance, such for example as those forms of retrobulbar neuritis in which Gunn has pointed out the most likely explanation to be a sclerosis of the fine branches of the retinal artery given off in the substance of the nerve.

Other degenerative changes of the optic nerve may be noted, as, for example, in the case recorded by Doctor Zentmayer at the 1906 meeting of the American Medical Association, in which there was a premonitory symptom of recurring temporary blindness

in the inferior field, finally becoming permanent. This condition was attributed to pressure exerted by sclerosed ophthalmic or internal carotid artery, forcing the optic nerve against the fibrous canal, thus inducing atrophy beginning above. Time, however, will not permit of our going into the details of this phase of our subject.

256 SOUTH FIFTEENTH STREET.

THE NEWER TEACHINGS OF THE DISEASES OF THE ALIMENTARY CANAL.*

BY MARK I. KNAPP, M. D., LL. B., LL. M.,
New York.

III.

THE EXAMINATION OF THE PATIENT.

The examination of the patient involves three distinct processes: 1. The taking of the history of the patient; 2. the physical examination; and, 3. the examination of the test meal.

In taking the history of the patient, the physician must not place too much reliance upon the patient's utterances, which may be confusing and misleading. Some patients exaggerate, others minimize their suffering, while others do not even know how to express themselves and, occasionally, some will deliberately lie. One thing the physician will do well always to keep in mind, that is, that every one seeking his advice is suffering. Very often patients do come and all they can tell us is, that they suffer, that they are sick, without being able to give us even the slightest description of their ills. Again, there are patients, upon whom only one, or but a few symptoms impressed themselves, and they underrate any other symptoms which they do not consider as important and, therefore, do not mention. Some will complain of nothing except that they suffer headaches; others mention only their constipation; others take notice merely of the vomiting, etc.

The physician should never be satisfied with such meagre description, but should inquire further and help the patient along. The physician should note all the symptoms as given by the patient, but, if that proves insufficient, he should continue in a systematic way, beginning with the head. Is there headache, and, if so, where? Is the headache supraorbital, frontal, temporal, unilateral, bilateral, occipital, or at the top of the head? Does it feel sore, painful, burning, bursting, hammering, tight? When does the headache come, what time of the day does it come? Does it come in the morning on waking, does the patient wake up with headache; does it come before meals or after meals, or is it independent of any meals? Is the headache constant? Does headache come with hunger or, is there vomiting accompanying the headache? Is there dizziness or vertigo? What is the taste? Is it good, bad, sour, sweet, bitter, hot, salty, pasty, soapy, metallic, musty? Some patients describe their taste as being yellow, and some as brown. In some patients the bad taste is pronounced only in the morning. Does the patient feel dry and

*See also articles by Dr. M. I. Knapp which appeared in the JOURNAL for July 27th, August 10th, and September 24th.

thirsty? What is the appetite; good, bad, faint, evanescent, ravenous? How does the patient feel along the esophagus? In searching for the symptoms of the esophagus, it is best that the examiner indicate with his hand, by running it along his sternum, up and down, and inquire of the patient, if he feel any soreness, pain, or distress there, or between his shoulderblades. Does he feel a lump, or choking in the region below the larynx? Has he ever raised any blood and, if so, how did it look? Was it dark, was it bright red, was it brown? Did he raise and vomit anything which resembled coffee grounds? How does he feel in the pit of the stomach, the physician indicating the spot with his hands? Is there any pain, or soreness, or rawness? Is there any sense of fullness, any sense of weight, any bloating? If there is pain, when is the pain? Is the pain before meals or after? Does eating aggravate the pain or allay it? Is the pain localized at any particular spot in the stomach, or is it general? If the pain comes after meals, how soon after meals does it come? Does the pain come during the night? Is there belching, nausea, does the patient vomit, or does he feel like vomiting and cannot vomit? If there is vomiting, is the vomiting spontaneous, or does the patient induce it? How much does the patient vomit? Is it only a teaspoonful or two, or is there real vomiting? The patient will often speak of vomiting, when there is only regurgitation and, therefore, we must ask as to the quantity vomited and in this way ascertain that the patient never vomited, but regurgitated. How does the vomited matter taste, how does it look? What is its odor, what is its color? Does retching accompany it, or is it shooting out? Is there any pain anywhere in the abdomen? If there is pain, is it local or general? When does such pain manifest itself; morning, afternoon, or during the night? Is the pain constant or intermittent? Is there any swelling noticed by the patient, or any fullness? Is there any sensation of weight, pressure, or emptiness? Must the patient loosen his clothing after meals? Is there constipation or diarrhea? Is there any sensation of insufficient defecation, as if the patient had not emptied everything? Is the patient called to stool very often needlessly? Are there flashes of heat and cold? Does he sleep well or is he waked? Does he dream? Does he get up refreshed or tired?

All the questions here enumerated have their definite relation to the gastrointestinal canal. I wish to call the attention of the physician to the need of crossexamining the patient. Not always can we be satisfied with the patient's answer. For instance, a patient, a woman of about sixty years of age, came to see me at the clinic with the diagnosis of neurasthenia and sleeplessness, written on her card by some one who had examined her before, on a previous visit. Disregarding the legend on the card, I asked her what was the matter with her. She answered, "I am nervous and cannot sleep." "What else?" I asked. "I am nervous," she answered. "What else?" "I cannot sleep." "Anything else?" "Yes, I am nervous." And so it went on, I repeating the question, and she giving me the same answer over and over again. Seeing

that I could not get any further this way, I asked her what she did after she woke up, and could she not sleep at all? She answered, that she woke up and then fell asleep and then woke up again, and so she awoke and fell asleep several times during the night. I asked her what she did after she woke up; but she could not answer this question. I then asked her whether she urinated after she woke up, which she answered in the affirmative. I then followed out this line and asked her whether she urinated every time after she awoke and she answered, "yes," that she could not tell how many times she awoke, but that she awoke quite a few times during the night and would urinate every time. Here was the solution of the problem. Her urine was hyperacid, due, as I found after, to organacidia enterica. When this condition was abated, her sleeplessness and nervousness disappeared. She did not suffer from sleeplessness, she suffered from hyperacidity of the urine which irritated her bladder and waked her.

Some patients come with the diagnosis of rheumatism, made either by themselves or by some physician, which diagnosis is apparently strengthened by the fact that some joints swell up somewhat and are painful. I had cases where the swelling was in the finger joints, and others where the swelling was situated in the ankle. The patients were successfully treated after finding out their digestive disturbance and treating it properly. Had I relied merely on the diagnosis of rheumatism and given the usual antirheumatic treatment, the rapid, good results would never have been attained. Patients complain of pain in the left side which is increased on inspiration. One at once thinks of pleurisy. But, on further investigation we find that this symptom is due to great distention of the stomach. These few illustrations serve to point out the necessity of a searching investigation and that we should never rely entirely on the patient's history alone. As a rule, the patients are honest in giving their symptoms, but not always do these lead us in the right direction; we must examine for ourselves.

THE PHYSICAL EXAMINATION OF THE PATIENT.

It should be the routine of every physician to examine the abdomen of every patient; never should anything be taken for granted or guessed at; ocular and manual examination should be practised in every instance. Patients will, very often, complain of trivial symptoms, perhaps even shrink back from the suggestion of a physical examination, and on examination we find the gravest conditions. A few illustrations will help us. A young woman came to see me with her mother. She had suffered for over three years and had been given various medicines without, at any time, having been examined by her physician. The physical examination, to which the mother somewhat objected, showed a tumor in the region of the head of the pancreas. The tumor was found at the operation; the patient died some six weeks after the operation. Perhaps she would have been saved had the diagnosis been made before. I had a similar experience in another case of a young woman with a somewhat waxy color of her skin. Also here a tumor of the pancreas

was found; also this patient had suffered for over two years and had not been examined before. In another case of a woman of about forty-three years, I was given the history of diarrheas. The physical examination of the abdomen showed a tumor well down in the left inguinal region, which proved to be cancer of the sigmoidorectal flexure. Patients give the vaguest histories, and the physical examination would reveal a gastroptosis, a nephroptosis, an enlargement of the liver, etc. A physical examination should be insisted on. Occasionally a patient will refuse such physical examination. I do not remember that a man ever refused the examination, but I do remember several cases of refusal in women. In former years I would not treat a patient who refused such an examination; I do not do it now; I paid dearly for that lesson. If a lady refuses to be examined, do not insist upon it. Simply explain to her the advisability of such an examination, but hasten to add, that, naturally, you are going to do your best under the circumstances. The result of such tactics invariably is, that the patient will herself ask for an examination at the second or third visit, after having spoken of it with her family or friends.

The proper posture for examination is the recumbent one. The patient lies on his back, either on a low couch, or better yet, on one of the usual examining tables, which is sufficiently elevated to permit of easy palpation. The patient's abdomen having been bared, we begin with the inspection. The object of the inspection is not only its suggestiveness or to appease the patient, but our desire to try to see everything.

Inspection. Among the several methods of physical examination, inspection takes first rank. The acuteness of vision one acquires with practice and persevering training cannot be equaled by any other method. I rely most on inspection. Inspection is the exactest method of physical examination. Inspection must be practised to the point of mathematical precision. So fine and acute can our vision become, that mere plastic exudations, which form adhesions between the several organs may be seen with absolute precision; I mean the shadows which they produce can be seen. Such of my diagnoses have repeatedly been confirmed by operation. By inspection alone all diseases which produce anatomical changes can be diagnosed, and all organs can be outlined with a precision which cannot be equalled by any method known, not excepting even the x ray. Nor does the relative state of adiposity of the patient make any difference; it makes no difference whether the patient is fat or thin.

During the inspection our mind must be fully concentrated upon what we are to do. Our object is to see the shadows upon the skin, which the outlines of the organs produce, and, if there are any pathological conditions, to see the shadows of these. Any and every pathological condition, which has already produced anatomical changes, can be seen outlined upon the skin. We can see solid, liquid, and gaseous swellings of very small size. Let one start out with the conviction that such inspection can be acquired by anyone and he will acquire it in a very short time. No doubt, the first

attempts will result in failure; it could not be expected otherwise. But let no one be discouraged.

The first thing we must look for is symmetry. The median line forms the boundary and we compare the picture on the right side with what we see on the left side. Any discrepancy we find between the two must be explained; there is a reason for such a discrepancy. For the successful inspection we must have the following three factors: 1, The patient must be in a certain position; 2, there must be respiration, the patient must breathe; and, 3, we must have proper light. For the inspection of the abdominal organs, the patient should be on his back, and the examiner should stand a certain distance away and to the side of the patient. The respiration of the patient should be natural, and, it is best not to call the attention of the patient to his respiration; he will do it well, if we do not ask for it. The proper light is diffused daylight, or artificial light if it is not too glaring. Direct sunlight cannot be used.

In looking for the abdominal organs we bring our eyes to the level of the patient's abdomen and observe certain lines which we see moving underneath the skin and which, so to say, scratch the under surface of the skin. These lines move in the vertical axis of the body of the patient. We soon learn to see and recognize these lines. These moving lines correspond to the moving borders of the several organs, as the organs move with the respiration. We look where the edge of the liver ought to be, and watch for that line as we have to look where the greater curvature of the stomach ought to be, in order to see the line which represents the greater curvature. For the beginner it would, perhaps, be best to train inspection on the lower margin of the liver. This can be easily ascertained by percussion, especially when the liver is enlarged. When this margin has been found, then, without making any marks upon the skin, the beginner should try to view it in the way presently to be described. The patient having been put in proper position, the examiner now brings his eyes to the level of the patient's abdomen and looks toward the region of the liver. He will see (after sufficient practice) a faint line moving up and down under the skin with the respiration. This line runs parallel with the free border of the ribs. Let him practise until he sees it, after which he will learn to see the other organs with ease.

If the stomach is in the normal position, only the greater curvature can be seen, but, in gastroptosis also the lesser curvature. Normally, the region of the stomach is full and slightly convex. In gastroptosis this region is depressed, because of the absence of the stomach; in gastroptosis there is a depression in the epigastric region and below it is the convexity produced by the stomach. The trained eye will at once recognize the presence of tension by the rigidity of the affected region. If peristalsis is seen, it means that there is an obstruction. Gas in the stomach can be easily recognized by the visible pulsations of the gastric region, that region being prominent. From this must be distinguished pulsations due to heart lesion. Circumscribed gas collections in the intestine, if situated over an artery, will also pulsate. Small tumors un-

derneath the abdominal wall can be seen as readily as large tumors.

In order to confirm the result of the inspection an ink line is drawn, over the line which we see moving beneath the skin. We now put the index and middle fingers, closely apposed, on the abdomen so that the ink line which we drew lies between the fingers which we are to use as pleximeters. We now percuss over each finger. If the line drawn is correct, the percussion sound will be different over each finger. It is best to use auscultatory percussion, that is, we auscultate and percuss at the same time. The lighter the percussion, the better can the difference in sound be appreciated. The physician should take care to percuss only in the way indicated here, that is, he should keep the two fingers apposed closely and, while he so holds the fingers, he should percuss over them. In order to verify the lines drawn from inspection by percussion, the beginners as a rule do not percuss in the way indicated here. Assuming the beginner has outlined the greater curvature of the stomach, and, in order to test the correctness, he percusses first over the greater curvature and then percusses at some distance away from the stomach; this method is wrong. Some coils of the intestine may give the same sound as the stomach, and some not. For that matter, different loops of the intestine may give different sounds, according to their state of relative fulness and the nature of their contents. Some coils may be filled, others not; some coils may have gas, others solids, and others again contain fluid matter. Accordingly, the sound elicited by percussion will differ. What we are after is to find out, whether the line drawn from inspection marks a difference in the sound; the question solely is, is there a different sound perceptible directly on either side of the line? If that is the case, then the line drawn shows that different structures are on either side of the line. The first and chief question is, does the line drawn mark off two different sounds? If it does, we are sure that we have seen the margin of some moving body; practice will teach the rest.

The greater curvature of the stomach is seen on the left side of the median line, above or even at the umbilical line. A line is seen moving with respiration, toward the umbilicus at inspiration, and toward the diaphragm at expiration. Care should be taken not to confound the transverse colon with the stomach. We can differentiate the one from the other by inflating the colon with the ordinary double bulb. When the greater curvature cannot be seen in the region just mentioned, we may safely assume the existence of gastroptosis.

The liver produces a distinct bulging of the intercostal spaces and the skin over it. This prominence becomes more distinct on inspiration, but somewhat recedes on expiration. It is this organ which is so well seen in the fat person. Instead of the ordinary percussion we may practise soundless, perhaps better called, vibratory percussion. In this method the finger used as a pleximeter, if struck very gently, will perceive different vibrations over bodies of different density. This method is very delicate and gives excellent results.

The seeing of peristalsis has its special signifi-

cance; it means obstruction somewhere. Normally peristalsis is not seen. If the stomach region shows peristalsis, it means, most likely, an obstruction at the pylorus, which may or may not be of an organic nature. If the obstruction is of an organic nature, if it is a tumor, there will be found food retention in the stomach attended by fermentation and perhaps also by gastrectasy. But the obstruction need not be at the pylorus, it may be beyond, in the duodenum. Visible peristalsis of the intestine also means obstruction, which may be within or without the wall of the intestine. Kussmaul's peristaltic unrest is due to retained food which the stomach tries to force through an obstruction. This peristaltic unrest may become apparent immediately on uncovering the abdomen or, if not yet visible, may be induced by either sharply striking the abdomen, or giving effervescent draughts.

Aside from inspection other methods to ascertain the position of the stomach are: Inflation, the cold water test, gastrodiaaphany, sound palpation, splashing sound, and a few others.

616 MADISON AVENUE.

GONORRHEAL ARTHRITIS.*

BY GEORGE A. HOLLIDAY, M. D.,
Pittsburgh.

Assistant Professor of Genito-urinary Surgery, University of
Pittsburgh, Medical Department.

Gonorrhea is usually a local disease involving the genito-urinary organs only, but in some few cases the presence of the gonococci or their toxins in the blood and their deposition in fibrous and serous structures are productive of serious complications. Gonorrheal arthritis is a specific infection of one or more joints, occurring during the course of an acute or chronic gonorrhea, the joint pathology being a local manifestation of systemic infection.

Gonorrheal arthritis may occur as early as the fifth day of an acute infection, usually during the second week of the disease, and may develop at any time during the course of the acute or chronic stages. In men it occurs after involvement of the posterior urethra or its annexa. For some reason it is not as commonly observed in women. It has been known to complicate specific ophthalmia. The seminal vesicles are doubtless often the infected area from which absorption into the general circulation occurs, but infection of the vesicles is not always apparent.

The diagnosis of gonorrheal rheumatism is not always easy. Its differentiation from other joint diseases is essential, particularly where a specific therapy, as the administration of vaccine or bacterial derivatives, is to be undertaken. The history or evidence of a recent or chronic infection with the gonococcus must be considered. The demonstration of the gonococcus in the secretions of the urethra, prostate, seminal vesicles, etc., must be attempted in all suspicious cases. Gonorrheal arthritis is likely to recur with successive attacks of gonorrhea, and is frequently coincident with a specific ophthalmia, inflamed bursæ, and synovial sheaths of tendons. The rheumatic diathesis does not predispose to arthritis

*Read at the meeting of the College of Physicians, Pittsburgh, April 25, 1912.

during a specific urethral infection. The disease is habitually limited to a small number of joints. Multiple arthritis is the exception in tuberculosis, and in rheumatism the rule. The temperature is irregular, remittent, and less marked than in rheumatism. There is not the rapid delitescence, the sudden subsidence in one and involvement of another joint. There is the tendency to hydrarthrosis and suppuration. The joint is usually quite comfortable when at rest. The urine is not modified. The endocardium is rarely involved. Antirheumatic remedies are not of service. When use of the gonorrheal complement fixation test is available, its positive and negative evidence must be given consideration. The discovery of the gonococcus in the intraarticular or circumarticular fluids of the joint obtained by aspiration will confirm definitely our diagnosis.

The treatment by rest, fixation of the joint, hot or cold applications, absorbent ointments, counter-irritation, constriction hyperemia, and internal medication is disappointing. Bacterins or vaccines have not effected the relief anticipated. The Rogers and Torrey serum has failed where a mixed infection was present and chronic gonorrheal joints have not been improved. Gonorrhea is not always a simple infection with the gonococcus of Neisser. For this reason vaccines containing the more commonly found bacteria have been combined with the gonococcus. Mixed or multiple infection is probably more often the rule than we have heretofore realized. The modified bacterial derivatives, or phylacogens,¹ are based, as a treatment, upon the assumption that the predominating organism is not wholly responsible for the pathogenic process.

Any method of treatment that promises prompt relief in such an affection is to be welcomed. A trial of gonorrhea phylacogen has been made, and its results are submitted. In several cases, the urethral and its complicating conditions were disregarded and relapse occurred. The local infection was then appropriately treated and to date there has been no further relapse. Failure to cure the local infection is the cause of recurrence.

As might be anticipated, the subcutaneous injection of ten c. c. or larger amounts, is with some patients an operation to be dreaded. It is painful at the time of injection, and the soreness lasts for a day or two. In some a marked systemic reaction results a few hours after the injection of even two or three c. c. doses.

In one instance after three c. c. the patient had repeated rigors for hours and a temperature elevation to 104.5° F. The skin was numb, and intestinal ramps were severe. It is, therefore, wise to commence treatment with a small dose, say one or two c. c., and to increase gradually, as the tolerance of the patient indicates. The first severe reaction usually follows the doses of from seven to ten c. c. Gradually a tolerance is developed, reactions become less marked, and finally subside. Whether the systemic reaction is from the protein, bacterial toxins, or chemical preservative content of the phylacogen, is a question for determination.

CASE I. Gonorrhea in February, 1911. An acute infection with free discharge and ardor urinae. Two weeks

later both knees were swollen and patient was confined to bed. Vaccine was administered without material result. Patient was first seen in October, 1911. He had been out of bed for about three months, only able to hobble around. Had lost over thirty pounds in weight. Both knees were somewhat swollen. Both ankles were then involved, the left markedly swollen. Left heel very sensitive. Backache at the sacroiliac syndromosis severe. Urine cloudy. Prostate swollen and soft and left seminal vesicle swollen and very sensitive to palpation. Gonococci demonstrated in urine and expressed secretions. Hot rectal douching was prescribed.

October 12th: Gonorrheal phylacogen, two c. c. October 13th: Five c. c., repeated chills and fever. October 15th: Left heel much relieved. Left seminal vesicle acutely inflamed (doubtless a result of the rectal examination). Given five c. c. Same reaction. October 18th: Given five c. c. Same reaction. October 24th: Walked with more ease. Knee and ankles more freely movable. Given ten c. c. October 26th: Walked up street the night before with perfect comfort. October 28th: Given ten c. c.; seminal vesicles stripped and prostate massaged. This local treatment was carried out at all succeeding visits. October 30th: Given ten c. c. Comfortable except for soreness in the left heel. November 2d: Ten c. c. November 4th: Ten c. c. Felt perfectly well. No pain. Walked naturally. November 8th: Ten c. c. November 10th: Ten c. c. November 14th: Gonococci still present in expressed prostatic and vesicular secretions. November 17th: Left knee and heel painful. Given ten c. c. Local treatment until March. To date no return of rheumatism. Patient had recently dissipated and no harm resulted therefrom. Patient was last seen on April 18th, free from rheumatism. Pus still present in prostatic and vesicular secretions.

CASE II. Four months ago patient contracted gonorrhea. Two weeks later both ankles became swollen and painful. Patient hobbled about with the assistance of a cane. Pus and gonococci in prostatic secretion. Given five c. c. gonorrheal phylacogen. Marked chilling and fever. October 18th: Five c. c. Felt feverish. October 21st: Less pain in ankles. Knees and ankles very weak. Given ten c. c. November 8th: Sent to hospital. Given ten c. c. No chill. Temperature 100.6° F. November 10th: Ten c. c. Sharp chill, and temperature 102° F. November 12th: Walked with more ease. Given ten c. c. November 15th: No pain except slight soreness in left heel. Given ten c. c. Only slight reaction. November 10th: Given five c. c. Left hospital. November 21st: Prostate massaged. Gonorrheal phylacogen discontinued and local treatment carried out on alternate days until December 5th. Patient gained five pounds in weight. Left heel sensitive. Knee and ankles stiff and sore after resting. Given ten c. c. December 7th: Given ten c. c. December 9th: Ten c. c. December 11th: Ten c. c. December 14th: Ten c. c. December 15th: Eight c. c. December 18th: Eight c. c.; treatment discontinued. Ankles were weak. February 6th: Patient in good condition, walking with perfect comfort. No relapse to date.

CASE III. November 5, 1911: Patient had gonorrhea of five months' duration. Two weeks after its appearance both ankles became swollen and painful, and patient was unable to be about. At date of examination both ankles and arches of the feet were swollen, edematous, and painful. October 5th: Two c. c. of gonococcal phylacogen given. October 7th: Three c. c. Slight chilliness. October 10th: Five c. c. Prostate swollen, both seminal vesicles distended, and gonococci present in expressed secretions. No reaction from injection. Local treatment instituted. October 15th: Five c. c. October 13th: Five c. c. Chills. October 16th: Seven c. c. Ankles much improved. Swelling reduced and can walk more comfortably. October 18th: Ten c. c. Slight chilliness. October 21st: Ten c. c. Was chilly, sick, and weak the following day. October 23d: Swelling and edema gone. Ten c. c. given. October 25th: Ten c. c. An examination by an orthopedist showed marked relaxation about the arches of both feet. Patient complained of tiring and pain. Strapping with adhesive to support the arch gave comfort. Several injections of ten c. c. were later administered, and treatment of the local infection was continued.

A continued rest accomplished complete restoration of function. Patient returned to his work which necessi-

¹From Greek, *φυλάκων* and *γεννάω*, meaning literally, produce guardians.

tated standing all day and to date has had no recurrence.

CASE IV. Gonorrhea of several months' duration. Right knee became involved, and when patient was seen its circumference was five inches greater than the left knee, edematous, and very painful. Gonococcic vaccine was administered without improvement. Recorded temperature (for eight days) prior to administration of gonorrhea phylacogen was 99° F. Following the first injection of five c. c. it reached 99.6° F. After second injection the second day later it reached 100°. Injections of ten c. c. gonococcic phylacogen were administered on alternate days for six injections, the highest temperature being 101.6° after the sixth treatment. Reactions then subsided and daily doses were given of ten c. c. for eight days. Pain was materially relieved after the third injection. At the end of the treatment the knee was reduced to its normal size, its function was perfect, and there has been no relapse to date (three months since).

8047 JENKINS ARCADE.

THE RESIDUAL EAR.

BY DAVID G. YATES, M. D.,

New York,

Senior Assistant Surgeon, New York Eye and Ear Infirmary.

By the term "residual" the otologist designates a middle ear which has been the seat of a suppurative process, which process has ceased and left the tympanic structures in a permanently damaged condition. For the purposes of this article residual ears will be divided into two classes: 1. Those in which perforation of the drum exists, and, 2, those having intact membrana tympani. The former class claims particular attention on account of the dangers and discomforts to which they give rise, and the fact that, soon or late, if not treated, they become functionally useless.

It is sometimes difficult to draw the line between a chronic running ear and a residual ear. A period of close observation may be necessary to determine whether or not there is complete absence of discharge. The secretion may be so slight as to escape notice, some of it may be draining through the Eustachian tube, the remainder evaporating in the external canal, and leaving only a small amount of residue which the patient mistakes for cerumen. This state of affairs may go on for years, until an acute infection, or a lowering of the bodily resistance, stirs the old process into activity. A concrete illustration of this type of ear is shown in the following:

CASE. A woman, forty-five years old, called me in to relieve a severe earache. She gave no aural history, except of slight deafness, and that for years she had removed, with a hairpin, at intervals of weeks or months, small masses of what she called hardened wax. Examination showed that the pain was of the neuralgic, rather than the inflammatory type, and radiated over the whole side of the head. Inspection of the drum revealed a small perforation, no discharge, and very little inflammation—not enough to account for the amount of pain. Within thirty-six hours, mental dullness, difficult speech, and the other symptoms of brain abscess appeared, and on operation a collection of fetid pus was found in the temporo-sphenoidal lobe.

PATHOLOGY.

Under ordinary circumstances an abscess of the middle ear evacuates itself, either through a spontaneous opening or an incision made for the purpose, and heals with little or no resulting injury to the structures involved. The perforation closes, the thickened and inflamed tissues resume their normal

condition, and function is restored. In a considerable number of cases, however, suppuration is prolonged, and subsides gradually, leaving a permanent opening in the drum membrane, and various thickenings, adhesions, or inflammatory deposits, involving the drum, ossicles, ligaments, and muscles. Together with this, there is often a slight mucous discharge, which is apt to give rise to complications which will presently be enumerated.

The pathological changes found upon careful examination are extremely varied. It is safe to say that no two cases are exactly alike. The drum may be entirely absent. Shrapnell's membrane only may be present, holding the ossicles imbedded in a mass of connective tissue, and crowded inward and upward toward the oval window. When a considerable portion of the drum remains, it is likely to be traversed by bands of connective tissue or bound down in places to the internal wall of the tympanum. Deposits of lime salts are often noted. In early cases when the tympanic mucous membrane can be seen, areas of congestion and hypertrophy may be observed. In other cases there is a fistulous tract leading to the attic or to the mastoid antrum. When the region of the oval window is exposed the head of the stapes can occasionally be seen buried in a mass of scar tissue. Later on, the ossicles may be still more firmly immobilized by the deposit of lime salts or bony tissue. The attic may be filled with cholesteatoma. "In certain cases," says Dench, "the superficial epithelium of the canal migrates into the tympanic cavity and replaces the pavement epithelium of the mucous membrane. These epidermal cells are developed with unusual rapidity and as quickly thrown off. As the result, the tympanic cavity is filled with a mass of epithelial cells which steadily increases in size and exerts great pressure upon the surrounding bony walls. The mastoid cells at a later period are invaded. The partitions between the pneumatic spaces are broken down, converting this series of small cavities into one large cavity." Cholesteatoma has the consistence and appearance of cream cheese. Its presence may be suspected from the peculiar disgusting odor which it gives off.

Perforations. The mere existence of a perforation constitutes a menace to the patient, even when present in an otherwise normal ear. Such ears rarely escape reinfection, and when acute symptoms arise the course of the disease is apt to deviate considerably from the usual type. Among the minor complications incident to a patent drum is the development of furuncles in the external canal. There is always a slight mucous exudation from the middle ear, part of which finds its way into the auditory canal, interfering with the normal secretion of cerumen and encouraging the growth of bacteria and yeast fungi (*aspergillus*). These collect in masses mixed with desquamated epithelial cells, irritate the skin of the canal, and either in themselves or by the efforts of the patient to remove them, or to allay the intolerable itching to which they give rise, lead to local infection with pus germs (most frequently staphylococci) and we have a series of furuncles. The bacterial flora of a canal debouching upon a patent drum is much more luxuriant than that of a normal meatus.

During the bathing season we see a considerable number of these cases in which the traumatism incident to diving or surf bathing has set up an acute inflammation of the middle ear, often progressing to mastoiditis. Many unexplained drowning accidents, I feel sure, are due to vertigo from the entrance of cold water into unprotected tympani. We are all familiar with the nystagmus and vertigo set up by syringing the ear in the presence of a perforated drum. Patients having such drums should be warned of the risk they take when bathing.

The receptive auditory apparatus is deeply situated in the skull, and well protected against atmospheric and temperature changes. The air which normally enters the tympanum is warmed and moistened in its passage through the nostrils and is admitted in small amounts. When a perforation of the drum exists, the air enters freely, and its desiccating action is soon apparent. Hypertrophic changes occur, with the inevitable development of fibrous tissue. The ossicular chain loses its mobility, bands of connective tissue are formed, deposits of the same fill up the region of the oval and round windows, and fixation of the stapes is eventually accomplished. Later still the labyrinthine capsule is involved, and a high degree of deafness gradually supervenes.

SYMPTOMS.

From the foregoing observations it will readily be seen that the symptoms may vary widely. The patient may seek advice merely on account of varying degrees of impaired hearing, tinnitus, or vertigo. When the trouble is limited to one ear, however, he is apt to neglect treatment until function is badly impaired. More usually it is an acute complication that impels him to seek our help—a furuncle, middle ear abscess, or mastoiditis. Not infrequently relief is sought from severe itching of the meatus, due to the presence of aspergillus. This is found in white or yellowish masses clinging closely to the skin. In a few instances facial paralysis was the symptom which first called the patient's attention to his condition. Neuralgic pains may be caused by the pressure of accumulations of epithelium, wax, etc., in the canal or middle ear. Dizziness and vertigo may arise from pressure on the footplate of the stapes.

TREATMENT.

From what has been said it is evident that a consideration of the treatment of the residual ear, together with its complications, would lead us into almost every department of otology. Only certain phases of the subject can here be taken up, and this rather from the viewpoint of symptomatology than pathology. Of first importance is:

Preventive treatment. I think most otologists will agree that a large proportion of chronic running ears and residual ears are due to a mastoiditis complicating the original middle ear abscess. These are the cases which "get well" without operation. Many of us are prone to temporize, even when the classical symptoms for opening the mastoid are in evidence, with the hope that the patient may be spared an operation. A certain number of patients do get well, or pass from observation as their acute symptoms disappear,—apparently on the way to recovery,—enough to tempt us to pursue an expectant

course at the solicitation of the patient and against our better judgment. But we do something less than justice to our patients and to ourselves if we fail to place before them the remote as well as the immediate consequences of delay. When, in an acute case, after a free incision of the drum, postauricular tenderness persists for two or three days and there is a rise in temperature, however slight, to delay operation is merely to lose time, to jeopardize hearing, and perhaps life.

Treatment of the perforation. As soon as a middle ear suppuration has ceased, it should be the surgeon's care to see that the opening in the drum closes. Most openings do this spontaneously. Others do not, even when the mastoid cells and attic are free from involvement. When the aperture is small I have seen it close up promptly after passing through it a probe or applicator dipped in a strong solution of silver nitrate. When the perforation is large or has existed for some time, and the silver applications are not efficacious, a good plan is to apply a small disc of gutta percha tissue over the opening.¹ This improves the hearing, affords a splint for the edge of the perforation, gives support to the growing epithelium, and restores as nearly as possible the conditions of moisture, temperature, and sterility which exist normally in the tympanum.

So much for acute cases. When a patient comes under observation for the first time, and we find a long standing perforation with no apparent discharge, we have to ask ourselves, in order to determine on an intelligent plan of treatment, why the drum has remained patent. Some of the various causes which have to be recognized and obviated are the following:

There may exist necrotic bone in the middle ear, ossicles, or mastoid cells. The presence of bone necrosis does not necessarily imply a chronic discharge of pus. I have seen a slow necrosis of the mastoid cells in which there were not more than half a dozen drops of pus discharge from the middle ear during the entire six months the patient was under observation before operation, and then only after paracentesis. We see the same thing in old injuries of the long bones. Once a year, perhaps, a few drops of pus will have to be evacuated, and then the process will remain quiescent for another period. Our first thought, then, on beholding a long standing perforation, will be as to the possibility of necrosis. In such a case the perforation must be looked upon as a safety valve. In one patient whom I have had under observation for a number of years the opening is covered over by an exceedingly thin, transparent membrane, which ruptures spontaneously when she has her annual, acute, suppurative process. In this case there is doubtless a small area of necrosis, but as the only symptom complained of is a moderately severe tinnitus, the patient is satisfied with palliative treatment.

In other cases, the edges of the perforation have become thickened by the deposit of cicatricial tissue.

¹Technique of covering perforations with rubber: Soak ear with warm boric acid solution; dry canal and drum with applicators wound with sterile cotton. Cut piece of rubber tissue one third larger than perforation, curve it to drum with small forceps, move into position with cotton wound applicator. Dust lightly with powdered boric acid. See D. G. Yates, Treatment of Perforations of the Tympanic Membrane, *Medical Record*, November 11, 1907.

which must be removed either by caustics (silver nitrate, trichloroacetic acid), or the knife before any growth can reasonably be anticipated; or the edges are covered by a layer of epidermal cells growing from the outer surface of the drum. Epidermization of the edges is the chief reason, according to Politzer, for nonclosure of apertures in the membrane.

Intranasal disease of any kind which interferes with the patency of the Eustachian tube, militates against the healing of tympanic perforations. In children especially adenoid growths, or diseased tonsils, must be borne in mind. The size of the perforation has a direct bearing on the question of closure. As a rule, it may be said that the prospect of healing is in inverse proportion to the size of the perforation. The drum, however, occasionally exhibits surprising powers of regeneration. I recall one case, a child of five years, in whom, during a violent middle ear suppuration, the whole drum, together with the larger ossicles and annulus tympanicus, sloughed away. The exfoliated annulus was found lying loose in the external canal. Yet a secondary membrane soon appeared, and the patient, now a well grown girl, has nearly normal hearing.² Politzer has observed complete regeneration after all the membrane except a narrow rim had been destroyed. Age and ill health from any cause exercise an unfavorable influence upon healing.

The location of the perforation is of some diagnostic value in determining the cause of nonclosure. An aperture in the anterior inferior quadrant suggests trouble in the Eustachian tube or nasopharynx; a marginal perforation is believed to indicate necrosis of the adjacent bony structures; an opening in Schrapnell's membrane is indicative of attic disease, etc.

Treatment of adhesive processes. Patients suffering from tinnitus or marked deafness, or both, may sometimes be relieved of these symptoms by endotympanic operations. These consist in dividing bands or removing deposits of fibrous tissue which interfere with the mobility of the ossicular chain. When the handle of the malleus is adherent to the promontory, it may be detached by means of a right angled knife; or when the ossicles are immobilized by an attachment of the drum to the internal tympanic wall, they may be liberated by the same means, and any radiating bands of fibrous tissue divided at the same time. Immediate results from such procedures are often very satisfactory, but the adhesions tend to reform even when inflation is subsequently carried out. For this reason the many endotympanic operations which were advocated so enthusiastically fifteen or twenty years ago have been largely abandoned. In a certain number of cases, however, when we can satisfy ourselves that the labyrinth is comparatively sound, it is permissible to remove the larger ossicles and the remnants of the drum, with a fair prospect of improving function and lessening or removing the tinnitus.

Treatment of acute complications. Residual ears

²The case of this girl's sister may be cited by contrast, as showing how much worse off a patient is with the tympanic walls exposed to the air. This girl in childhood also lost the larger ossicles and drum. In her case the latter did not grow in again, although suppuration ceased, and she has grown deaf year by year.

are peculiarly liable to reinfection. Recurrent suppurations are not only likely to be severe when confined to the middle ear or attic, but are prone to light up a latent process in the mastoid cells. Such suppurations are to be dealt with vigilantly, and "with abundant caution"—to borrow a legal phrase. Prompt and free incision of the bulging portions of the drum is indicated. If mastoiditis develops, no time should be lost in opening the mastoid process, because in this type of case experience teaches that endocranial complications are peculiarly liable to develop. It will frequently be found that the cellular structure of the mastoid process has been replaced by bone of ivory hardness. Pus confined in the antrum or attic, denied exit through the cortex, erodes the inner table of the skull, and epidural abscess results. Space will not permit consideration of the treatment of all these possible complications, but it may be remarked that as a general rule, in residual, as in chronic suppurative cases presenting acute mastoid symptoms, it is better to perform a radical (Schwartz-Stacke) rather than a simple mastoid operation. In such patients the hearing power is apt to be poor, and no harm to function results from this procedure; while the patient is immeasurably safer with the tympanum and antrum cleaned out.

The second class of residual ears mentioned in the beginning of this paper, viz., those having intact membrana tympani, will not be considered here. Many of them, while showing the scars of former inflammations, give rise to no symptoms. In others the symptoms are similar to those of non-suppurative otitis media, and are relieved by inflation, massage, etc. The chief object of the foregoing paragraphs is to urge the importance of prompt operation in cases of mastoiditis, to point out the danger of allowing patients to pass from observation before their drums are entirely healed, and to indicate what may be done to close perforations.

79 WEST 104TH STREET.

INTESTINAL OBSTRUCTION AND VOLVULUS COMPLICATING PREGNANCY.

A Plea for Radical Procedure. Report of a Case, and Its Significance.

By M. A. FLOWER, M. D.,
New York,

House Obstetrician, Metropolitan Hospital.

A pertinent question is often brought up as to when and at what time is one justified in emptying the gravid uterus. There is a multiplicity of indications such as rachitic and generally contracted pelves, coxalgia, diseases of the various viscera, internal conjugate below seven mm., and last but not least the indication *par excellence*, that of saving the mother's life. It is with this latter phase or rather indication that this paper is concerned.

Radical procedure should be the keynote and action should not be delayed beyond a reasonable time, after a plausible diagnosis has been reached and it is found that the mother's life is at stake.

Even when failing in a logical conclusion or accurate diagnosis, the trend of both thought and action should at all times be in the direction of giving the benefit of the doubt in favor of saving the mother's life.

A case came under my immediate supervision recently that I hope will bear me out, for it gives food for thought along lines of radical procedure in emptying the gravid uterus whether at term or otherwise.

CASE. Mrs. F. S., aged twenty-eight years, white, primipara. Pregnant seven and one half months. Was brought to the hospital from home by ambulance. The ambulance surgeon could elicit little if any information from the patient other than a history of constant and persistent, cramplike, and at times lacerating pains in the region of the fundus and directly in the epigastrium. (Patient stated that an appendectomy had been performed four years ago. Cicatrix had been noted.)

A hurried examination, as is usually the case in all rush or emergency calls, could bring out no other symptoms. On admission to the ward a thorough physical examination externally and per vaginam and through the rectum was made by the writer and his superiors and the following findings were noted.

Examination per vaginam. The external os soft and flabby; internal os rigid; entire cervix dilated one inch, or less than two finger tips; vertex could be plainly outlined in the left occipitoanterior position. Vaginal ballotement was obtained; withal nothing noteworthy other than the cervical dilatation was found. (The latter is not an uncommon finding in women who attend to their own household duties.)

Examination externally. Fundus about three inches above the umbilicus. Linea gravidarum (new) noted. Linea nigra in the median line with a tendency to deviate to the left side. Symmetrical globular enlargement of the abdomen. Abdominal wall tense and the umbilicus almost obliterated. Fetal heart sounds could be plainly heard, just below and to the left of the umbilicus, having a range from 135 to 145 heart beats a minute. Physical examination of thorax gave negative results for the heart and lungs. The usual mammary gland signs were present. Lower extremities showed no varicosities or edema. Palpation over the fundus and the appendicular region gave the patient extreme pain and slight tenderness. Other than this pain nothing of importance was elicited from the physical examination.

The subjective and objective symptoms on admission were as follows: In addition to those mentioned in the report of the ambulance surgeon and verified in the ward, a persistent and incessant vomiting developed, the vomitus being somewhat bile tinged having no fecal or other bad odor. Further inquiries from the patient's relatives and family physician gave the following history: Patient took suddenly ill on the Sunday preceding with symptoms as herein described. In addition constipation of a persistent character, lasting up to date of entry to hospital, or four days. In the interim before being brought to the hospital her physician administered opiates. He advised immediate removal to a hospital, having decided that the case was beyond his aid. Due to the fact that the cervix was dilated plus the intermittent pains, the consensus of all concerned was that the patient was having premature labor pains.

An enema of the following was given high up into the bowels: Magnesium sulphate three ounces, croton oil four minims, soapsuds and water of each equal parts, to make one quart. The results were negative. Enema was repeated two hours later with excellent results, a thorough cleaning out or what appeared to be such. This, however, did not relieve the pain, which now became more constant and in a short time localized in the region of the fundus.

The only logical deduction from this peculiar pain, its location, and its constancy was that these were not labor pains and that in all probability some constriction in the small intestines in the region of the ileum had occurred and that the gravid uterus was pressing against this volvulus, preventing its untwisting. Here was an excellent

and, I might add, an immediate indication for emptying the uterus. The patient having arrived in a moribund condition at the hospital any radical measures would have hastened the end. She died twelve hours after arrival. Should her physician have had a similar thought to the writer's, five days prior to giving up his case as hopeless, his patient, who had an excellent physique and was now practically worn out from exhaustion, might have been saved.

Post mortem examination, made by Professor John H. Larkin, director of the Strecker Memorial Laboratory and pathologist to the City Hospital, revealed exactly what was too late deduced: An old constricting adhesive fibrous band encircling the small intestine about twelve inches from the ileum, and under which fourteen inches of dark colored intestine had passed, this in turn being wedged in by the gravid fundus. Pulling away the fundus in a measure relieved the constriction and gave, if not full play to the vermicular movements of the intestines, ample circulation to the partially constricted gut. As a contributory cause of death autointoxication set in.

The significance of this case lies in teaching us to think along surgical lines in all similar cases. And that post mortem examinations should not only be encouraged, but striven for; for, after all, true pathological conditions as well as surgical are thus discovered and verified.

THE RELATIONS BETWEEN DOCTOR AND PATIENT.

BY H. RABINOWITSCH, M.D.,
New York.

The medical profession is no doubt, in spite of some ignorant mockers and scoffers, one of the noblest professions. Imagine the disastrous situation of a person, who unfortunately becomes seriously sick all of a sudden or who feels that health and strength are leaving him little by little, getting worse every day and left to his fate, not knowing whether there are any hopes for him, whether or not it is the beginning of a tragic end of his existence on earth. Can you imagine a situation more sad, more inconsolable?

It is the medical man who tells him what is the matter and the nature of his sickness, which alone is enough to quiet his thoughts and give him hopes to recover, realizing that he is under the care of one who knows all about him. This quieting, encouraging, and hope are sometimes very important factors in the course of the disease, giving more strength and more power of resistance, and may have a definite beneficial influence on the prognosis.

But this is not all the physician does. He relieves the patient's sufferings, removing pain, and so he makes him feel better, more or less comfortable in the moment of his greatest distress; above all, he fights the evil itself, directly or indirectly, by treating or combating the sometimes grave symptoms, which might become fatal, and so gains time, which is often, especially in some self limited diseases, the main thing we need. The medical man does his duty fully; he does it in cases which produce in most people aversion, for instance, in some skin or venereal diseases; he does it with self sacrifice, often endangering his own life or the lives of those who are the dearest to him—the lives of the members of his family, as in

many contagious and infectious diseases. Is there any profession nobler and more philanthropic than the medical?

The people at large, at least in times past, highly appreciated the doctor's work and showed him their appreciation, regarding the family physician as their most intimate friend, whom they trusted and with whom they shared their joys and sorrows; he was their confidential man and advisor, and there was not an event in the family, good or bad, that was kept secret from him; he was told of everything that happened in the house, and knew everything that went on in the remotest corners of their heart and soul, and nothing was done without having consulted first the family doctor; he was highly esteemed and beloved by his patients as their friend and benefactor, while he was trying his best for them.

Such were the relations of doctor and patient in the "good old times." Who had the benefit of these relations? There is no doubt that both sides were greatly benefited. Mutual confidence, devotion, and attachment bring about a common interest in one another, the maintenance of which is equally dear and useful to both sides.

Are the relations of doctor and patient now the same as they used to be? Is the physician's work now as well appreciated as it was in those "good old times?" To our sorrow we must answer this question in the negative, in regard to our own country, where a man (no matter who, with good or without any education) is only *worth* as many dollars as he possesses. On the contrary, the frequent attacks on the doctor and the absolutely baseless accusations we now very often meet with in word and writing, seem to be a sign of more or less animosity or even open hostility between them, while in Europe it has changed very little, if at all. Who is to be blamed? Who is to be made responsible for this undesired change in our country? Partly it is, certainly, the capitalization of the country and consequently the disregard in general of those professional men who are not *worth* much in cash; but it is not the fault of the doctor, and most certainly not of the general practitioner. Our doctors, especially the general practitioners, who are frequently exposed to assaults and attacks by some writers, are doing their duty as well as their European brethren. It is nonsensical and shameful to accuse a physician of purposely prolonging a sickness in order to get more money out of the case, since it is in his own interest to get the best results as quickly as he can, in order to maintain his reputation, not to do harm and so to deliver over his patients to his colleagues or competitors. Only people with very limited intellect can lend an ear to foolish stories of that kind. Such accusations and others similar to them, which we have lately often met with in the press, originate in the imagination of people who consider every dollar they pay to the physician for services as robbed from them and the doctor as a robber, or, in their usual expression, a "sucker." This is simply because the people, no matter who, poor or wealthy, are not accustomed any more to pay for medical services, which they always get free of charge, in the dispensaries and hospitals. When a dispensary patient is told that he has to come

again as soon as he finishes the medicine, he appreciates it, and will not neglect to do so; but as soon as a private practitioner dares to say it, he is considered by the patient as a "sucker," trying to prolong the sickness. The reason is simple and clear; they are used to having medical services as charity. And, indeed, very often, when a patient comes to see me, or I am called to see one, I think how foolish he is; cannot he have the same free of charge in any dispensary or hospital, where, although able to pay, nevertheless he will be welcome because the gentlemen over there, the managers, as as well as the so called "professors," are glad to have as many callers as possible in order to be able to show an annual report with a big record to the donors and contributors to that institution, and convince them of the supposedly great "charitable" work that has been done with their money during the year? It has been shown by a writer in the NEW YORK MEDICAL JOURNAL that the overwhelming majority of free patients in the several institutions are well-to-do people; that means, the charity funds are deprived of thousands of dollars for the use of people who are not entitled to charity; according to my own dispensary experience the proportion of the really poor ranges from one to two per cent.; in other words, only about two out of a hundred patients.

Now, may I ask, by what legal or moral right do these institutions collect contributions alleged to be for the poor; arrange entertainments for charity purposes, and distribute them among people who are not in need of them? Besides, making them used to charity, they undermine their self respect and also the material condition of the physicians, depriving them of their bread and butter. The dispensary and hospital abuse is one of the evils that exist in our country and does not exist, at least on so big a scale, in the European countries (except in connection with a medical college), and is one of the reasons for the different relations of doctor and patient in our country and in Europe.

The outcry against the dispensary and hospital evil does not present anything new; it had been called already many times to the attention of the representatives of these institutions, who have promised their aid to abolish it. But instead of doing so, they have opened evening clinics for venereal diseases, in order that the people who contracted them, mostly single men, who are working all day (hence able to pay) may be able to use charity funds!

We often read in the daily press, such and such a hospital is in need, and asks for donations to erect new buildings to be able to accommodate all the poor applicants. I know a number of cases where really poor patients had been refused admittance as every space was occupied; but by whom? Is it not the greatest injustice to give away the benefits of charity to people who are not entitled to it, and refuse these benefits to those patients for whom they are designed? When you give the benefits of charity to people who have no right to it—is not this an *abuse of charity funds*? When, in consequence, you refuse admittance to a really poor patient—are not you *depriving him of that which was designed for him only*? Here is a case, an emergency case: K—ff, a poor man, had to be operated upon at once

for inguinal hernia; they took him in a carriage to a hospital, but he was refused admittance for lack of space, and while they were driving him from one hospital to another he died in the carriage. Who is responsible for the death of this poor man? I leave it for the readers to answer this question; the only thing I want to add is, that if they will continue to act this way, no matter how many buildings they erect, *the really poor will always remain the losers* and the medical practitioners will be brought by them to a state of mendicancy.

Many physicians, especially those who have had the opportunity, or the cash, to get connected, as chiefs, with some hospital or dispensary and so to become "professors" (I don't mean here the really learned professors, for whom I have the greatest esteem), are so kind as to advise their colleagues to go to Africa, Turkey, China, and Heaven knows where else, asserting that the profession here is overcrowded. It is true that there are here in proportion more physicians than in Europe; but, on the other hand, there is here a greater demand, the people are using more doctor's services. In the eastern European countries there are the so called *Feldsher's* (a licensed body to practise medicine) who do at least half of the medical practice. The ignorant men, especially the peasants, who form the majority of the population, very rarely use medical services. They prefer rather to go to some enchanter or enchantress for advice than to a doctor and while, even in the western European countries, for instance, only a very wealthy family will seek the services of a physician in a normal confinement case, in our country almost every woman is confined by a physician. The trouble is that in this branch of medical art, too, we have here "philanthropical" obstetrical institutions which spend the charity funds on *everybody*, in need or *not in need*, sending even to their homes, free of charge, doctors and nurses (by the way, the doctors, certainly, are not paid by the institutions, but the nurses—well, they must make a nice living!), and so depriving the practitioner of his already scanty income. I was once called to see a woman in the puerperium; she told me she was confined by a Broome Street doctor (branch of the Lying-in Hospital), but he did not come to see her as often as she thought necessary, and she said: "I want you to examine me and tell me how I am. When that doctor will come to-morrow I shall give it to him the hell; what devil for do I need him if he does not attend me every day? I could afford to have a private doctor, even if it would have cost me ten or fifteen dollars!" This case speaks for itself and does not need any comment; it is not an exception, it is one of the majority of the "charity" cases.

And the doctor patiently sits, his hands folded, listening to all his malicious blamers and accusers; looking on how his name, dignity, and reputation are trampled in the dirt under the feet of every one who feels like doing so, and how his work and skill are abused, and not only he does not do a thing to remedy it, but is aiding it by giving away his time and work in the dispensaries, etc., for nothing to people who are in better material circumstances than he is. You could remedy it very easily, if you wanted to: stop collaborating in those institutions,

or at least stop doing so for nothing; be paid for your time and well paid (at least as the dispensary nurse is) with the *special privilege of using your judgment to whom to give free medical service and to whom to refuse it*. I know you will be liberal in your judgment, it is in the nature of your profession, nevertheless you will do away with the greatest part of that evil and there will remain only *as many institutions as are really necessary for the people for whom they are designed—the really poor*; it is in your interest, as well as *in the interest of the poor patient, who will get then fully the benefit of good care and more proper aid* the charity funds provide for him. Do it and make the others, the specialists, do the same. They need you, they depend upon you, they want you to refer to them your patients. Do it now, do not waste time in discussions and debates—act; you owe it to your noble profession, to yourself, and to your family; explain openly the reasons of your just action, *the benefit of it for the poor*. You will have then the sympathy of every right thinking man, public opinion in general will be on your side, and you will succeed. Remember, you must help yourself; you cannot expect anything from the authorities of that institution, whose interest is just the opposite of yours, and while you want to do *real charity*, they care only for *big annual reports* to show, and thus have the reputation of great philanthropists; not even from your own officials, who treat you in a stepmotherly fashion and dismiss physicians for alleged lack of funds, but have money enough to engage an army of nurses with enormously high salaries (NEW YORK MEDICAL JOURNAL).

Another thing that has a very disadvantageous influence on the relations between doctor and patient, and is a great deal responsible for the deplorable change, is the way the doctor gets his practice in our country. Medical practice here, at least the greatest part of it, consists of "contract practice" with different societies, clubs, lodges, congregations, and similar organizations. Well, there would not be anything bad in it, if on a just and respectable basis. So there are in Germany, for instance, too, so called *Kassen-Aerzte* for the poor, but for the *poor only*, who are treated by them for a moderate fee, paid by a benevolent society; the members of the family are only entitled to this benefit as long as its chief is unemployed or has proved to be very poor. But this is not the case with our organizations. In our country almost everybody is a member of some organization, which engages a physician by election to treat *all* the members, among them even very rich people, for the compensation of one dollar a year each, and all the members of their families (sometimes quite numerous), if they want to use his services (or in their usual expression: if they want to "belong" to him with family) for two dollars a year; if they do not "belong" to him with family they do not need to pay, so that practically only the big families belong to him, while the smaller ones consider it unnecessary to pay even two dollars a year, since they can have medical service in the dispensaries free of charge. And these few families alone are enough to keep a man busy all day, for instead of coming to see the doctor in his office, they call him to their

house for every little nothing, thinking, they *pay* for it and are entitled to it; and he *has* to go, no matter where they live, all over in Greater New York, day and night, if the order came before 10 p.m., and very often, after spending an hour or two in driving, he does not find his patient at home!

But this is not all; the main and worst thing is the moral side of the situation, which makes the doctor a real slave to every member of the organization, if he wants to stay. He must do everything, even when not bound by his contract. Thus, for instance, according to the agreement, usually, he is to be paid extra by the patients for surgical work, for special calls (when ordered after office hours); but as soon as he tries to maintain this right, he makes enemies and can be sure of not being re-elected when his term expires. He is liable to make enemies and lose the society by reporting, for instance, to the board of health a case of an infectious disease, when the mistress of the house does not wish to have it reported; also, when a candidate, recommended by an influential member, does not pass his medical examination; when refusing a benefit certificate to a member who has reported himself sick, but who, in the doctor's opinion, was able to work, etc., etc.

The following may illustrate the situation of the lodge doctor: It is not very rare, that he is arraigned to appear at their meeting for a hearing in consequence of a complaint by some of the members against him for not attending in time, or for asking money for a call. The president in the chair, some ignorant man, who is the judge in these cases, makes a serious face and asks the doctor what he has to say in his defense. The doctor says, that every member, when he orders him, wants him to come *at once* and it is a matter of impossibility to be everywhere at the same time, especially when one, for instance, lives in East New York, or Brownsville, or Bath Beach, and the other lives somewhere in the Bronx, and that the money he asked was for a call after 10 p. m., and consequently he was within his rights. The president judge admits it is so, but he says to the doctor, "You must not be so strict with the time" (but this same president wants to be and is paid extra for overtime work, after 6 p. m., in the shop where he is working) "and in order to avoid dissatisfaction, you will give the brethren a 'treat' and the matter will be settled."

It is not something new, surprising, for the doctor to give them "treats"; he does it every time he gets the few dollars, his quarterly fee, for the past three months; he does it, and sometimes to the extent of a real banquet, before the election of officers, in order to be re-elected; he does it after the elections, if re-elected, as a proof of his gratitude and recognition of their kindness to him. And after the meeting the doctor goes with them to some saloon according to the president's verdict. And the brethren like it very much to be "treated" by the doctor, they consider his as their own money; they do not consider so the money they pay to the secretary for his work, or to the printer for the printing, and they do not expect any banquets from them, but they do so with the doctor—nevertheless his reelection remains in doubt.

In order to avoid in the future unpleasantness of that kind, which is beneath the dignity of a man

who has a little self esteem, he has to obey the orders of every member and practically to be his slave; which is more respectable? I leave it for the reader to answer.

Under such circumstances can you expect the relations between doctor and patient to be the same as in the "good old times?" Can you expect the people to respect the physician and the medical profession in general? The relations between doctor and patient assume more or less a hostile character; the patient does not appreciate the work the doctor is doing for him as soon as the latter wants to be paid for it, thinking he is only after his money, while the doctor considers the patient ungrateful, one who is trying to abuse his good work and skill, and

Wo Hader und Misstrauen walten,
Kann kein Bild sich gestalten.

(GOETHE.)

The evil of the contract practice can be remedied, in my opinion, only by refusing to accept it *under the present system*, which is neither just nor respectable; but this is only possible after having done away first with the hospital and dispensary evils.

In the preceding lines I have tried to give a full and exact description of the situation of the majority of the general practitioners, and its direct influence on the relations between doctor and patient. It looks sad, but nevertheless it is true. It is a pity to see our noble profession brought to so low a state, and the physician, its representative, being indifferent to these conditions. Free yourself once for ever, start at last the campaign and start right now, the sooner the better, for the sake of your own honor, the honor of your noble profession, and for the sake of your family, and do not stop until your just fight is crowned by success. You will have the sympathy and aid of every right thinking man, of the medical press, and of all those of the lay press who are honest and sincere and really represent the cause of the poor class, who will be greatly benefited by your victory, as I have shown. The poor will get in full the benefits the charity funds provide for them; the people at large will learn to appreciate justly the doctor's work; both, doctor and patient, will be content, more intimate and confidential, and the relations between them will be as they used to be in—the "good old times."

1651 WASHINGTON AVENUE, BRONX.

THE EDUCATION AND TRAINING OF FEEBLEMINDED CHILDREN IN THE PUBLIC SCHOOLS.

BY ANDREW W. EDSON,
New York.

Associate City Superintendent of Schools.

In spite of the fact that many cities have undertaken the task and are making great progress in the education and training in the public schools of children of undeveloped mentality, the fact remains that in most cities but little if any serious attempt is made to grapple with the problem. The reasons advanced are many. The school authorities plead as an excuse that they have all they can well attend to in caring for normal children; that there is an

apparent lack of funds, lack of school accommodations, lack of public interest in the matter, and even that there is a scarcity of children in need of this special training. The medical fraternity is inclined to look askance at the proposition, on the ground that a feeble-minded child presents a hopeless case, incapable of any intellectual improvement, and therefore should be committed permanently to some institution. Some even go so far as to maintain that the greater the amount of education gained by a feeble-minded child the more dangerous he is to society. This indifference and neglect are inexcusable.

The feeble-minded children who should be in attendance at public schools are those children somewhat below par in mental acumen, possibly merely of slow development, yet susceptible of intellectual growth. Idiots and imbeciles are institutional cases, not public school charges. A careful examination by a specialist may determine if a child proposed for a special class is hopeless and should therefore be committed to an institution. A very large number of cases, however, must necessarily be those on the borderline between imbecility and merely slow development, cases that even trained experts find it difficult to diagnose with certainty. These are the children who by the right kind of training may improve intellectually in a very marked degree, or who by neglect will soon sink into a hopeless and helpless condition. If educable, even to a limited extent, their place is in a special class in the public schools.

Modern education emphasizes one principle clearly: Every child is entitled to all the education which he is capable of receiving. This principle applies to all children, not only to the great majority, but to the mentally and physically handicapped, *irrespective of cost*. The very fact of existence gives the child the right to a training that will lead him to be happy, self respecting, and self supporting. One very noticeable feature, in the training of children is the fact that they are happy, or likely to be, when usefully employed. And while children of low mentality may never become leaders, may need oversight and guidance throughout their lives, yet if they have learned to use their hands to advantage, the elements of a trade possibly, they may be self supporting, or at least less of a burden upon their families and upon the State by reason of the training received. This alone is enough to warrant the expenditure.

The right of a child carries with it the duty of the State to provide this training. A handicapped child is a great burden upon any family, and unless properly trained is likely to be a menace to society. As an economic measure, therefore, the expense of an education should be borne by the State, even if the per capita cost is heavy.

The particular reasons why a child slightly subnormal should be educated in the public schools, in school buildings with normal children, though not in classrooms with them, are: 1. This arrangement is an economical one. Taxpayers and members of boards of education are obliged to consider the expense entailed in any educational problem, especially in one that is a decided departure from traditional usage. A suitable room in some school building can be secured easily and equipped at small

expense. In some cases it may be necessary to consolidate classes in order to provide a room, even to put some of the younger pupils on part time, but it should be done. Part time is not a serious evil for pupils of the first year grade. 2. The matter of travel to and from school is a serious consideration for feeble-minded children. Public school buildings are usually situated near homes and are easy of access. 3. The opportunity to go to and from school with normal children, to associate with them on the playgrounds and in some of the general exercises of the school must be of the highest value to children of undeveloped mentality. Such association for a portion of the day must have a tonic influence upon them, a decidedly better effect than would the realization through complete isolation that they are set apart as dullards. 4. The leading argument perhaps is based upon the fact that these feeble-minded children are of all grades of dullness, some of them but a little off from normal, cases of slow development it may be, and possibly behind grade in only one or two subjects. By having the classes of subnormals in ordinary school buildings, the children may be allowed to go to regular grade classes at certain periods each day and in certain subjects in which they show the most interest and greatest aptitude. In this way many a child may soon be transferred permanently from the special class to the regular grade class gradually and naturally.

A strong argument for the assignment of these exceptional children to special classes is the relief to the teacher and children of regular classes; a great burden is thereby lifted.

An inquiry lately made of the superintendents in one hundred of the leading cities in the United States reveals the fact that in only forty cities are special classes organized for the education and training of feeble-minded children, and in most of these a mere beginning has been made. In view of the efforts and progress made, the success attained, and the light that has been shed on this problem, I submit the following suggestions:

1. In every city there should be a recognition of existing conditions. Subnormal children—variously known as backward, dull, feeble-minded, or of slow development—are with us. They can be found if the school authorities and medical fraternity will but open their eyes and look about them.

2. There should be established in each city a psychological clinic, possibly in connection with the city hospital, under the control and direction of the board of education, for the purpose of examining and classifying all children deemed by the teachers and school physicians as somewhat peculiar, below normal, exceptionally dull. At this clinic the degree of mental deficiency should be determined by scientific methods; full and accurate records of school work, home conditions, and hereditary data should be obtained and filed; and a proper assignment of each case should be made, some to school, to particular phases of school work, and others should be remanded to State institutions as custodial cases.

3. Suitable classrooms in regular school buildings should be secured for these children, and suitable equipment provided. The room should be large, sunny, and easily accessible from the street and to

the playgrounds and toilet rooms. The special equipment should be fifteen movable and adjustable seats and desks, four shop benches and equipment, physical training apparatus, a piano, running water, and porcelain sink.

4. The classes should be small, not more than twelve or fifteen in a class, in order that these children may receive individual attention. This number affords a variety of talent for the teacher's efforts and allows individual or group instruction as is deemed best.

5. Specially qualified teachers who have a natural aptitude for the work, should be selected—teachers who have infinite patience, tact, resourcefulness, intense human sympathy, an appreciation of effort, and unbounded faith in the young people intrusted to them—teachers who are students of the latest literature on the subject, which is abundant, and who make frequent visits to schools where instruction to exceptional children is given.

While many of the teachers now engaging in the work have taken special courses at summer schools, and by observation, study, and experience are growing to be quite skillful, the fact remains that but few are suitably prepared. If kindergartners need a two years' course of special training for their work, surely the teachers of subnormal children, where expert knowledge of a high order is required, need a course of training of equal length. Any six weeks' course is a mere beginning. And where special preparation is demanded, additional compensation should follow, at least \$100 per annum.

6. The management should be kind and sympathetic. Love, sympathy, and a cheerful attitude will lead these children—or any children for all that—far better than nagging, threatening, or punishments.

7. A suitable course of study should be provided—a course that gives emphasis to the essentials, that is flexible, and is adaptable to the needs of the individuals, a course that leads directly to some vocation. The greatest liberty possible should be allowed teachers in adapting the course of study prescribed for the regular grades, to the needs of the individual members of the special classes.

8. The instruction should be personal and individual, and should give emphasis to physical and manual training, to nature study, excursions, and illustrative material. The much talked of Montessori method is undoubtedly well worth a careful study and personal application by teachers of feeble-minded children.

9. In this work the skilled teacher and skilled physician should labor side by side. Many of these children have serious physical defects that should be remedied as soon as possible. The training should be corrective and curative, physical as well as intellectual.

10. If the school authorities do not do their duty toward these unfortunate children, if there is a lack of funds or lack of interest, people of means and warm hearts should be appealed to, to see that this work is done. Public educational associations, mothers' clubs, and other organizations stand ready to "lend a hand" at any time an appeal is made. All that is needed is a leader with a well matured and workable plan.

Abstracts and Reviews.

THE RATE OF BLOOD FLOW AND THE VASOMOTOR REFLEXES IN DISEASE.*

By G. N. STEWART, M. A., M. D., D. P. H.

(CAMP.),

Cleveland,

Professor of Experimental Medicine, Western Reserve University.

A number of years ago Plesch devised a method of measuring the minute output of the heart by determining the amount of blood which flowed through the lesser circulation in a given time. This method was based upon the correlation of certain measurements which could be made in the living subject. It called for an accurate measurement of the quantity of oxygen present in the venous blood and that in the arterial. With constant conditions of temperature and oxygen concentration in the inspired air one could calculate, with considerable accuracy, the volume of blood which must have passed through the pulmonary circuit in a given period of time. This is the only portion of the internal circulation which is thus far subject to measurement, but we now have the means for measuring the rate of the blood flow in peripheral parts, chiefly the hands and feet.

This method is far simpler and less irksome for the patient than is the Plesch method. It is carried out as follows: The only instrument needed is a calorimeter, which consists of a double walled metal receptacle, the space between the walls of which is insulated by means of granulated cork. The central cavity of the calorimeter contains water of a known temperature and volume. Into this water the hand or foot is immersed and the escape of heat is prevented by a felt cuff. These parts of the body do not, when in a state of rest, themselves produce any appreciable quantity of heat, therefore what heat may be produced must come from the circulating blood which passes through them. Prior to the measurement of the amount of heat produced in one of these parts, the part, with its fellow of the opposite side, must be immersed for a considerable time, ten or more minutes, in a very large water bath having the same temperature as that of the water in the calorimeter. This is to "level the slope of heat production" in the two parts. After the immersion of the part to be tested, which must be at perfect muscular rest, the rise in temperature of the water in the calorimeter is read at intervals by means of a thermometer which passes down into the contained water, but which is so placed as to be remote from contact with the part immersed. By thus measuring the rise in temperature in a given time one of the three factors is obtained for the calculation of the volume blood flow through the part. The other two factors needed are the temperature of the arterial blood at the point where it enters the part—this has been accurately determined to be 0.5° C. below the rectal temperature of the subject—and the temperature of the venous blood leaving the part, which is the same as the temperature of the water in the calorimeter at the end of the observation.

*Summary of Harvey Society Lecture delivered at the New York Academy of Medicine, November 23, 1912.

From these three factors it is possible to deduce the fourth and unknown fact, the amount of blood which was required to cause the rise of the temperature, for, as previously mentioned, the heat is derived from the circulating blood under the conditions which obtain in the experiment. Two factors materially influence the results, viz., the temperature of the room in which the observations are made, and to a much less extent the temperature of the water in the calorimeter at the beginning of the observation. Both these factors can be controlled within certain limits, and the first, if not easily modified, can be considered in the ultimate calculations by reducing the results to terms of a standard temperature.

The volume of the part which is to be used in the experiment is to be measured by determining the amount of water which it displaces. This makes it possible to reduce the calculations to terms of grammes of blood per 100 c. c. of volume of part. Thus results can be compared directly. Reduced to its simplest terms the method gives the quantity of blood which passes through a given specimen part in a given period of time, expressed in grammes of blood in each 100 c. c. of part. Results from the hand are more accurate than those obtained from the foot chiefly because the blood-vessels of the former are all very superficial and because the hand has a much smaller proportion of bone than the foot.

The method affords a ready and accurate means of determining one other fact of interest with regard to the blood flow. It is possible thus to measure the vasomotor response to cooling or warming the corresponding part on the other side of the body, that is, one can measure the intensity of the vasomotor reflexes.

In normal individuals it has been found that when the patient is right handed this hand usually shows a somewhat greater blood flow than the left. In some instances this is reversed, and it has been found at times that the patient showing this irregularity actually used his left hand more frequently in his occupation, though he was right handed.

Up to the present time observations are insufficient to make any definite statements with regard to the clinical values of the results of the method. But some suggestions will be offered in the discussion of several of the cases studied. Primarily, observations on several normal persons taken at different times during more than a year prove the accuracy of the method, both for the determination of the blood flow and of the vasomotor reflexes. Secondly, the method seems, with certain reservations, to give a fair index of the total movement of blood in the body.

OBSERVATIONS ON CASES.

In cases of pernicious anemia the measurements show that there is a great diminution in the volume of blood passing through the hand. The Plesch method shows that there is a very considerable increase of the volume of blood flowing through the pulmonary circuit. These observations are directly complementary and indicate that with a diminution in the capacity of the blood for carrying oxygen there goes a corresponding increase in the amount of blood exposed to oxygenation in a given period of time, brought about, in part at least, by a periph-

eral vasoconstriction. Curiously, in cases of severe secondary anemia, with equally great reduction in the number of red cells, there was far less vasoconstriction, or even none, in the peripheral parts. This suggests that the determination of the blood to the lungs in the former condition is not wholly due to vasoconstriction and the deficiency of oxygenation.

Cases of peripheral neuritis were studied, and in the recent cases without atrophy of the parts the blood flow was found to be greater in the involved part than in the normal one. There was also a more intense vasomotor reflex, though a more transitory one than normal. These observations suggest that the neuritis caused an irritability of the vasomotor mechanism with a partial selective paralysis of the vasoconstrictors of the involved part, allowing the vessels to remain somewhat dilated. In old cases with atrophy quite the reverse was found to be the case, the flow was less in the affected part and the reflex was less than normal.

In a healing hand which had been badly burned the vasomotor reflex was found to be jerky, the suggested explanation being that the newly formed vessels which were innervated by newly formed nerves were less uniformly responsive to reflex influences. A hand inflamed by acute gout showed an increased blood flow. Another hand, one finger of which was the subject of a severe infection, the volume was found to be more than two and a half times as great as that in the well hand, and the vasomotor reflex response to cold was scarcely perceptible. This may be explained on the theory of a block in the vasomotor reflex arc together with an enormous vasodilatation due to paralysis in the vasoconstrictor mechanism or a stimulation of the vasodilator.

The method proved of value in differentiating between vein obstruction and lymph flow obstruction as the cause of an edema of an arm due to a tumor. The very marked reduction of blood flow led to the conclusion that the veins were obstructed.

It is valuable to measure both pressure and blood flow in cases of high blood pressure, and such measurements have shown that the flow is in inverse proportion to the pressure, which is what is to be expected. The blood flow is also actually below the normal. In cases of high blood pressure the vasomotor reflex is found to be poor to warm and intense to cold, suggesting the existence of a dominating vasoconstrictor influence. In cases of arteriosclerosis there is both a poor flow and a poor vasomotor reflex, particularly to cold.

Cases of hemiplegia showed no vasomotor response and a very small flow in the wasted paralyzed hand in old lesions. No such abnormalities were found in recent cases without wasting and nerve degeneration.

In a case of tetanus the presence of an extreme vasomotor excitability was suggested by the finding of an intense vasomotor reflex, especially to cold.

The smallest readings of all have been obtained in some cases of myocarditis with marked failure of compensation, cyanosis, imperceptible pulse, and dyspnea. In one of these cases the reading was only one sixtieth that of the average normal man. On the other hand, in valvular lesions when com-

pensation is good, there is usually no abnormality in the blood flow through the extremities.

Among the miscellaneous observations may be mentioned cases of unilateral pulmonary tuberculosis in which it was possible to refute the idea that there was a better circulation in the hand on the affected side than in the other. In two cases of Raynaud's disease there was found to be an extreme vasomotor reaction in both the affected part and the normal extremities. This may be an indication that the local lesions are due to intense, spasmodic vasoconstriction with resulting starvation of the tissues. In unilateral pleural effusions the hand on the same side as the effusion showed a greater flow than the opposite member. This remained for some time after the removal of the fluid. In a case of fluid in the abdomen there was an increase in the flow in the foot after the removal of the fluid by paracentesis. Acute alcoholism showed an intense reaction to cold in the vasomotor reflexes, and a lesser one to heat. Alcohol administered to a healthy, normal individual while his hand was in the calorimeter showed a prompt diminution in the flow.

From all these observations it is patent that the method gives results which may ultimately prove to be of some value in clinical studies. It is equally obvious that far too few observations have been made as yet to permit of the deduction of any definite facts of clinical importance. Continued observations will be made in the hope that the results, which have been so suggestive, may prove of some diagnostic or scientific value in the study of disease.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXVIII.—How do you treat infantile convulsions? (Closed November 15th.)

CXXIX.—How do you manage chronic ulcers of the leg? (Answers due not later than December 16th.)

CXXX.—How do you treat subacute and chronic laryngitis? (Answers due not later than January 15, 1913.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to Question CXXVII was awarded to Dr. William L. Rhodes, of Kansas City, Kan., whose article appeared on page 1128.

PRIZE QUESTION CXXVII.

THE TREATMENT OF PRURITUS VULVÆ.

(Concluded from page 1130.)

Dr. I. Michel, of New York, observes:

Pruritus vulvæ is only a symptom, not a disease, and is due to many causes, therefore we must treat the cause in order to relieve that symptom.

These are the main causes: 1. Vaginal discharge; 2, diabetes; 3, neuroses; 4, parasites; 5, mechanical causes.

1. In vaginal discharge the cause lies in the uterus, mainly from the cervix. Use mild astringents around the vulva and then direct the treatment to the cause of the discharge.

2. Examine the urine; if diabetes is found, direct the treatment to the latter. Use astringents, especially mild ones, such as one grain to one ounce of zinc sulphate or alum or tannic acid, or they may be used combined. Instruct the patient to wash off the vulva after each urination, so as to prevent the decomposition of sugar in the vulva.

3. The neurotic form is more painful than that above described. Here the itching is not only not confined to the vulva, but is felt on to inner sides of thighs, even up to the abdomen. The patient scratches and produces an inflammatory condition. Locally you can use anesthetics; dilute solution of carbolic acid about two per cent. is about the best I have found to relieve the condition. Then the general condition of the patient is looked into. In most cases bromides will give relief. Fresh air, tonics, and improved digestion are of great benefit in these conditions. Herpes of the vulva will produce intense itching after the patient has scratched the bleb. The treatment for this is to powder with bismuth in acute cases; any local antiseptic will relieve the condition. Ointment of salicylic acid and yellow oxide of mercury is a very good application in these cases.

4. In the parasitic form the treatment is directed to the destruction of the parasites.

5. In the mechanical form we have to remove the mechanical part causing the condition, i. e., as in masturbation, we instruct the patient not to masturbate. In the chronic and incurable pruritus vulvæ, total or partial extirpation of the vulva, is a justifiable procedure. Removal of the glans clitoridis in elderly women is also permissible.

In conclusion, I will say again that the main treatment lies in removing the cause.

Dr. Henry B. Bryan, of Pittsburgh, writes.

Pruritus vulvæ is the result of a cause directly attributable to the parts affected, or indirectly to some morbid condition elsewhere in the system. Having obtained a full knowledge of the personal history of the patient, examined the skin and appendages, superficial glands, respiratory, circulatory, digestive, and nervous systems, the sexual and reproductive organs, excluded the usual diseases and conditions often causing pruritus vulvæ, such as acrid discharges, parasites, or diabetic urine, and finding no cause or remedies such as found, I proceed in this wise:

When there is much loss of sleep, I give sodium bromide and chloral hydrate, five grains each, in a glass of water, every hour, until sleep is produced or until three or four doses have been taken. The urine is made bland with urotropin or salol or similar drug. Appetite and digestion are stimulated by stomachics and digestants. The bowels are made regular and kept so by suitable laxatives and diet. Hygienic conditions are made as nearly perfect as possible. Fresh air and bathing, with proper exercise, are prescribed. The patient is impressed with the necessity to resist the inclination to scratch as long as possible. It will often occur that during

certain occupations the desire to scratch is not so intense; that being the case the patient is directed to change her thoughts and occupation, to "forget it," as it were, at least temporarily.

In case of a vaginal discharge of any degree, a sterile lamb's wool tampon should be inserted after thorough douching, and replaced from time to time as required. After micturition the clothing should not be used to dry the pudenda, but the patient should have at hand a number of borated lint pads with which to dry herself. A pad, two inches square by one quarter inch thick, should be sufficient, destroying each pad after use. When the itching is very severe, a small pledget of absorbent cotton, dipped in a five to ten per cent. solution of cocaine, and placed over the clitoris in the vestibule between the labia, will give relief. As soon as the excessive itching subsides, cool or cold bathing with a saturated solution of boric acid or a one or two per cent. solution of carbolic acid will restrain the desire to scratch, after which dry the parts and smear over the vestibule and clitoris boric acid ointment and dust the skin surrounding the pudenda with talcum powder.

The clothing should be kept as far as is possibly convenient from the sensitive parts. On retiring, a saucer containing a block of ice with a number of the lint pads lying thereon within easy reach of the patient, to place on the itching parts when required, will often allay an attack before it fully awakens her.

Local treatment must be persistent and logical, according to the conditions. I always personally try to combat the symptoms as they arise; the mere personal attention encourages the patient to hope and greatly improves the nervous manifestations. When the itching becomes unbearable and persistent, painting the pudenda with a solution of silver nitrate, twenty grains to the ounce of water, cocaine having previously been applied, will give relief and, repeated two or three times a day, often a permanent cure. All palliative or curative treatment must be strictly antiseptic.

Dr. Alice E. Houghton, of Salt Lake City, remarks:

Since pruritus vulvæ is a symptom which may depend upon a large variety of conditions, instead of a disease, the diagnosis of the condition which produces it is of the utmost importance in obtaining a cure, and the curative treatment in different cases must vary widely, depending upon the cause in the particular case. However, the symptom is so distressing and leads in many cases to so much suffering and nervousness, that palliation is well worth striving for in those cases where the underlying cause cannot be removed.

In some cases a very slight itching of the parts causes a habit of scratching which will produce much congestion and excoriation of the parts, but if the patient can get relief long enough to afford Nature a chance to heal the parts, a cure is assured. Among the causes of pruritus vulvæ may be mentioned: Uncleanliness, urine containing sugar, hyperacid urine, irritating leucorrheal discharges, parasites, pregnancy, and local diseases of the vulva.

In all these cases absolute cleanliness should be enjoined. The patient should be instructed to cleanse the parts carefully with a soft wet cloth each time after voiding the urine. In addition, the ex-

ternal genitals should be thoroughly bathed in hot water and soap at least twice each day.

In any case of pruritus, the patient should lead as hygienic a life as possible, with plenty of fresh air, bathing, etc. The bowels should be kept open, regulated, if possible, by the diet. As to the diet, all stimulating foods or those of an irritating nature, including alcohol, coffee, highly seasoned dishes, spices, cheese, sausages, tomatoes, strawberries, etc., should be forbidden. In some cases, certain patients will have antipathies to certain foods which should be forbidden.

In certain cases where the urine is a cause of the itching, special attention should be given to the diet, forbidding those articles that are likely to increase the acidity of the urine or the amount of sugar. In case of diabetes, the treatment should be directed to that condition. In this class of cases bismuth subnitrate will be found to be a valuable local application.

Where there is an irritating discharge from the vagina the treatment should be directed to the cure of its cause, since it also is merely a symptom of some abnormal condition. However, frequent hot antiseptic douches (potassium permanganate one to 5,000 is a valuable one) will be beneficial in removing one cause of irritation to the vulva. If the douches are followed by the use of a tampon, considerable relief will be experienced by reason of the fact that the discharges will be kept from the organs for a while. However, it often happens that the pruritus is not dependent on the discharges, and a cure of them does not always insure relief from the pruritus.

While there are thread worms migrating from the anus, or pediculi pubis, there are a number of useful applications. If the hair is shaved from the parts to begin with, not so many applications will be required to get rid of the parasites. Petroleum ointment, five per cent. beta naphthol in petrolatum, or carboglycerin, one in eight, will probably be effective.

Many women suffer intensely from pruritus during pregnancy, and in those cases only palliative treatment can be given. Keep the patient in bed until the itching subsides. The knee chest position will often afford relief by reason of relieving pressure temporarily. Applications of hot or cold water, following by dusting with powder, and a pad of cotton wool over the vulva held in place with a T bandage, will usually give relief, not only in pregnancy, but in other cases. In case there are small ulcers on the vulva they should be touched with pure carbolic acid or silver nitrate, followed by the application of some soothing paste.

Friction of the parts in walking, especially in fat subjects, aggravates the condition, and for that reason it is best that local applications be made in the form of ointments. Zinc ointment, mentholated or camphorated petrolatum, or chloroform with petrolatum, are all good. In severe cases, narrow strips of gauze may be dipped in carbolic acid (one in twenty parts) and inserted about one inch into the vagina and spread out so as to cover the lips. They should be held in place with a T bandage.

In almost every case of pruritus, whether dependent directly upon any of the causes enumerated above, or whether it seems to be idiopathic, there

will be found to exist conditions of the structure which bring mechanical pressure upon the nerves to the vulva at some point along their course or at their origin. A careful search should be made for such conditions.

Under the head of mechanical treatment, relief that is amazing to those who have not observed it, will be given in almost every case by the following procedure: Have the patient lie prone upon some hard surface; with the thumbs bring strong, firm pressure in the gluteal region, directly over each obturator foramen. There will always be found to be tender spots at these points. Relief is given the patient by reason of the inhibitory effect upon the nerves.

After pruritus has subsided, a perfectly bland paste should be employed for some time to protect the parts from friction. Equal parts of zinc oxide, starch, wool fat, and petrolatum, make a very good paste for this purpose.

Therapeutical Notes.

Treatment of Nervous Symptoms in Influenza.

—T. H. Evans (*Medical Times*) enumerates as possible nervous symptoms in influenza, prostration, pain, hyperesthesia, paresthesia, lessened motor or sympathetic functions, insomnia and slight psychic reactions, as in neurotic individuals, who become inclined to suspicions or disorders of memory or imagination. All these conditions can be overcome, if promptly treated. In the first place, the emunctories should be stimulated. In uncomplicated cases the following may be given:

R Hydrargyri chloridi mitis,gr. 3/40;
Phenylis salicylatis,grs. xxxviiss;
Acetanilidi,grs. xxiiss;
Potassii nitritus,gr. ¼;
Carbonis ligni,grs. viiss.

M. Pone in capsulas No. xii. Sig.: One capsule every two hours.

When the next visit is made, the following is to be used, if purgation has been effected:

R Strychninae sulphatis,gr. 1/100;
Phenylis salicylatis,ana grs. xxiiss;
Acetanilidi,ana grs. xxiiss.

M. Pone in capsulas No. xvi. Sig.: One capsule each hour.

Rest in bed with an absolute milk diet, or milk toast and soft boiled eggs, will accomplish a great deal. The patient should be fed at intervals of two hours in the part of the attack, the remedies given at the same time, and the patient allowed to sleep, or rest, in the intervals.

For insomnia the hot, wet pack and purgation should be employed. The following should also be given:

R Strontii bromidi,grs. lxxv;
Elixiris cinchonae (N. F.), }
Essentiae pepsini (N. F.), }ana ʒi.

M. Sig.: Shake well. One or two tablespoonfuls in water each hour.

Where pain is a prominent symptom, Dover's powder acts well, especially when associated with laxatives, and phenyl or other salicylates.

The diet should be made generous as soon as the emunctories are satisfactorily at work. Ner-

vous symptoms, especially tremor and prostration, are best managed by rest in bed and an ample diet. Strychnine is invaluable, though some cases of an epileptoid nature do not do well with it. In these the diet, with some remedial combination such as the following, will meet all indications:

R Oleoresina capsici,ʒii;
Extracti gentianae, }
Pepsini,ana grs. xvi.

M. Fiat massa et divide in pilulas No. xvi. Sig.: One pill every three hours.

Treatment of Influenza in Children.—Breton (*Revue mensuelle des maladies de l'enfance*) states that for the disturbances of the respiratory organs in influenza, hot packs, counterirritation with mustard, and hot baths are advisable. He has found guaiacol phosphate of great value in the treatment, and gives it in doses of four to seven grains per diem, according to age. For the glandular involvement, he advises the administration of raw bone marrow. During convalescence a careful watch should be kept for signs of renewed infection.

Treatment of Prostatic Hemorrhage with Retention of Urine.

—Hugh Lett, in the *Practitioner* for June, 1912, discusses the treatment of cases of prostatic enlargement complicated with hemorrhage and consequent retention of urine owing to clot formation. The principal difficulty is that clots are likely to enter the catheter, block its lumen, and prevent any urine being drawn off. This may sometimes be overcome by passing water down the catheter, but a more frequently successful method is to fill the catheter with water before its introduction and place a wooden plug in the butt end. Clots are thereby prevented from entering, and when the catheter is in the bladder the plug is withdrawn and the urine begins to flow. If success is not attained with the coude catheter, a large silver prostatic catheter, with its larger opening, should be tried.

As soon as the bladder is empty, styptic remedies such as epinephrine or a weak solution of ferric chloride may be injected to control hemorrhage.

Where, in spite of the attempts made, no relief can be obtained with a catheter, two forms of treatment are available. One, sometimes successful, consists in keeping the patient continuously under the influence of fairly large doses of opium. This relieves pain, quiets the mind, and delays the periodical filling and emptying of the bladder, with the result that coagulation at the bleeding point is favored. It is, however, a somewhat desperate course to follow, patients occasionally dying, owing to failure to stand the additional strain imposed upon them by the back pressure of urine.

The second and better plan of treatment consists in performing suprapubic cystotomy and turning out the blood clots. If the bleeding is observed still to continue, Lett advises the passage of a speculum to the base of the bladder and inspection of the latter as well as the surface of the prostate. Here he has invariably found one or even two bleeding points. If these are touched with a Paquelin cautery, the bleeding stops promptly; a tube is then left in the bladder and the patient sent back to bed. In none of the author's cases was there a return of hemorrhage.

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THE CLINICAL RELATIONS OF THE
INTERNAL SECRETIONS.

The Congress of the Italian Society of Medicine, which closed in Rome on the 30th of October, devoted considerable time to the internal secretions, a subject to which Italian investigators have contributed much valuable labor. One cannot but be impressed by the vast field which the ductless glands have steadily invaded, in keeping with the conclusions announced nearly ten years ago in this country, that these organs were second to none in the body in their bearing upon physiology, pathology, and clinical medicine.

According to the official report of the congress, the influence of the internal secretions on anomalies of growth, morphogenesis, and organic metabolism, on nutrition and inherent excitability of the nervous system, on resistance to infections and intoxications, and also their preponderating rôle in the causation of dyscrasias and morbid temperaments, can be deemed established. The equilibrium of the nervous system, the sympathetic in particular, can also be regarded as maintained by the internal secretions. In nervous diseases *per se* these act probably as indirect or predisposing factors, excepting perhaps in tetanus, eclampsia, paralysis agitans, and myasthenia gravis, with which such a

connection is still problematical. Their relations with infections and intoxications are clearly exemplified by the marked susceptibility to many disorders; various infections of the skin and mucosæ, thymolymphatism and tuberculosis, collapse under chloroform narcosis, cardiac adynamia in the course of infectious diseases, etc., shown by subjects suffering from hypothyroidia. The array of disorders enumerated in the report in which the internal secretions are now known to take part, is such that pathology bids fair to require a complete readjustment if its tenets are to harmonize with all established facts.

Another striking feature is the stress laid on the participation of more than one internal secretion in a morbid process, i. e., of several acting conjointly, the glands producing them constituting what our Italian confrères term the "endocrine system"—a near approach to what was styled the "adrenal system" years ago in this country. Additional acquisitions to our knowledge would be gained, according to the report, were Léopold Lévi and de Rothschild, for example, to ascribe to this endocrine system instead of to the thyroid alone, the arthritic disorders so efficiently studied by them; the precocious senility and genitodystrophic geroderma of Rummo and Ferrannini, the infantilism of Brissaud, the adrenal and carbohydrate mobilization theory of diabetes of von Noorden, would also find considerable light were they interpreted with the endocrine system as pathogenic intermediary instead of the single gland, the thyroid, adrenal, etc., to which these clinicians attribute this rôle.

To the rank of hypothesis is relegated, however, the alleged influence of the internal secretions upon calcium metabolism and various morbid entities such as rhachitis, osteomalacia, Paget's disease, certain chronic dermatoses, hemorrhagic disorders and neuroses, though additional researches may ultimately reinstate them within the field of the endocrine system.

THE PERILOUS SQUEAMISHNESS OF
THE LAY PRESS.

Since the recent Congress of Surgeons in New York commended a plan to teach through the lay press the early symptoms of cancer of the uterus, we have seen two articles in prominent dailies by distinguished specialists. One of these gentlemen indeed has invited us to express our opinion as to the propriety of his action. Judge of our amazement to note, on reading the articles, the destruction of most of their possible value by the ridiculous rules of the lay papers which forbid the use of the word *womb*. We expect our readers to greet

this statement with stunned disbelief. Womb is apparently to the lay editor an obscene word. This important, this indispensable organ must not be mentioned; its name, surrounded with the highest and holiest connotations, must be deleted, though the grim procession of cancerous women goes on to the grave in increasing thousands.

The omission of the word womb undoes the good of the lay warnings, which thus become almost meaningless and without justification. Any one can see a lump in the breast. It is precisely the uterine cancer that is dangerous, the peril lying in its insidious onset with the total absence of pain until the disease has progressed beyond the hope of cure. In a crisis like this the lay papers might well get together, trace to its source the ludicrous obscenity of mind that first devised their strange rule, and abolish the latter forthwith. We are amused at our innocence in publishing our editorial article on Cancer and the Lay Press in our issue for November 23d.

A little physiology might well precede a lay treatise on cancer. The quicker women learn all about their normal wombs, the better. To our colleague, therefore, who asks for our opinion, we say, let him continue the good work of education. Under such circumstances there can be nothing objectionable in the mention of his name in connection with the article, and probably it will add to its value by drawing special attention thereto. The criticism from disgruntled colleagues, if any, may be disregarded. Let him, however, begin with the elementary principles of physiology, and insist that the daily paper selected as the channel of knowledge print in full exactly what he writes; and, above all, let him insist that such words as kidney, bladder, womb, appear in their nude simplicity despite the outraged blushes of the editor and the unsophisticated reporter.

IS APPENDICULAR RESECTION EASY?

A recent letter from a surgeon to the *New York Times* has stirred up a good deal of discussion concerning fees. As usual, the fact that the fee is strictly speaking an honorarium has been lost sight of, and the surgeon is assumed to have something definite for sale, and as this something is a necessity, the price should be well within the resources of the most modest purse. Laying to one side for the present this aspect of the question, another point requires attention.

The *Times* says: "Now, the operation for appendicitis, while of a serious nature, and demanding the exercise of skill and care, rarely takes much time, and is of no special difficulty. Any surgeon

properly called good can do it." As a matter of fact any surgeon called good can do the average appendicitis operation very well indeed, but the complications of appendicitis, with its adhesions and infections, are such that the last degree of technical skill is often called into play to manage a case successfully, and the most experienced operator often has a feeling that he would like to try a given case over once more, because of something which he has left undone, or failed to do on account of difficulties. The death rate in complicated cases of appendicitis is still very high with some surgeons of the first rank, while others have reduced the mortality rate to very low figures. The opportunity for making mistakes, for leaving the patient with a hernia, for losing life through some small error in judgment, is so great that the highest fees ever paid for any sort of surgery are justifiable in some cases of appendicitis. We know of instances in which very good surgeons have had such a death rate in complicated cases of appendicitis that it has interfered with their reputation as a whole. A surgeon of our acquaintance has had many operations in cases in which a previous operator had backed out without being able to get the appendix. Last Saturday, in fact, he operated in a case in which two previous operations had been done in an attempt to get the appendix, with failure in both instances, and he had to do almost a desperate operation to get it himself. This must be the experience of every surgeon who has very much work of this sort to do, and it gives a wrong public impression when the editor of a paper as good and responsible as the *Times* states that the operation is of no special difficulty.

TOXEMIA AND TEMPERAMENT.

Biography has seldom presented so pitiable a contrast as the following: "I am a rarity" (wrote Marie Bashkirtseff at fifteen years of age); "I shall be highly educated, if God wills that I should live, and blesses me. I am perfectly formed, my face is pretty enough, I have a magnificent voice, intellect, and I shall be, withal, a woman. Happy the man who will have me. He will possess an earthly Paradise. Provided he knows how to treat me." Later Marie and Bastien Le Page (who painted the Joan of Arc) became great friends; his death followed a few weeks after hers and was due to the same disease, tuberculosis. When he was too ill to walk he was often carried to her house, where they lay, stretched out on two lounges, silent, dull with pain, letting their young lives drift away, seeming to have no outlook, no hope, and at the last, no apparent desire for another and a purer, more ideal life. Marie died when only twenty-four years old.

The appearance of the book quoted from¹ prompts anew a consideration of the impress which toxemia makes upon temperament in people of unquestionable genius, of which this poor girl was one. Her peculiar mentality, however natural and inherited, was certainly accentuated as to its abnormality by the toxins evolved by the tubercle bacilli, which coursed through her lymph and bloodvessels and poisoned her nervous system, from which all cerebration must be evolved.

In general terms the consumptive's psychism is profoundly affected not only by the tuberculous toxemia, but also by the defective bodily nutrition (especially the brain atrophy) which results from suffering this disease for months and years. The will becomes unstable and unpredictable. The intellect is frequently acute and often uncanny (of which more presently). The emotions are most varied: Ecstasy, optimism, *spes phthisicorum*, spiritual exaltation, impulsiveness, obstinacy, irritability, abnormal energy; these states are like to alternate abruptly with grief, depression, disappointment because of nonimprovement, fear, terror, religious gloom, mortification because of the phthisiophobia which may be evinced toward him by others, nostalgia, and anxiety as to one's affairs (which among consumptives are often so pathetically straitened). In the former psychic states fulminations of the disease are like to obtain; in the latter the physical exhaustion consequent upon the fever having burned itself out.

The quality of genius is thus sometimes weirdly affected by the tuberculous toxemia. The reader familiar with Robert Louis Stevenson's works will at once agree to this, and that this poor sufferer furnished a case of literary pathology, based upon his physical condition. Chopin's supernaturally beautiful music, easily suggesting white moonlight and exotic atmospheres, is again in point. In evidence that the influence of toxemia upon the genius of the consumptive is not individual and accidental, but frequent and real, one need but give only a very incomplete list of those of the world's great benefactors in literature and the arts, men and women, who succumbed untimely to the tuberculosis bacterium: Rachel, Stephen Crane, Schiller, Laurence Sterne, John Keats, Nevin, von Weber, John Sterling, Timrod, Artemas Ward, Henry Kirk White, Thoreau, Spinoza, Merimée, Symonds, Kingsley, Southey, Shelley, Pollock, Pope, Hood, de Quincey, de Balzac, Hawthorne, Burns, Poe, Coppée, John Stuart Mill, Richelieu, Descartes, Cowper, Molière, Botticelli's model Simonetta Catanea, and the model who sat for the Blessed Damozel of Rosetti.

¹The New Journal of Marie Bashkutsch, New York.

AUTOINTOXICATION AS CAUSE FOR CARCINOMA.

Along with tuberculosis and syphilis the cancer question takes a leading part in the discussions of scientific medicine, but while we know the etiology of lues and the white plague and have, with the acquisition of this knowledge, left empirical treatment behind us and entered upon a rational warfare against these two diseases, the cancer question is far from being solved. As long as we do not know the cause or source of this disease we shall, with our forms and methods of treatment, grope in the dark. Among the theories brought forward as to the origin of malignant growths a few, indeed very few, have received scientific consideration. To these may now be added an explanation of the etiology given by J. Gwerder-Pedoja, of Davos-Platz, Switzerland, which the author expounds in *Correspondenz-Blatt für Schweizer Aerzte* for November 20th. The origin of malignant growths is to be found, he states, in the transposition of tissues by the body itself. He explains his theory thus: If the cells of a certain organ through trauma or senile relaxation or for other causes become liberated and enter the blood or lymph circulation, this action will have the same influence upon the relation of the tissues as the entrance of a foreign albumin into the organism itself. If during this presence in the circulation these liberated cells are not dissolved or taken up by the stream, they will act as foreign bodies and will be finally deposited in the organism at some place foreign to their kind and will act there as an aggressive stimulant. The origin of malignant growths, therefore, depends upon the inability of the body to defend itself against such wandering cells; if the constitution of the fluids of the body is such that it can take care of discharged cells the organism will remain free from malignant growths. This view leads logically to the heredity of cancer, a deficiency in the fluid constituency to defend the organism against liberated cells.

LITERARY GENIUS AND MANIC DEPRESSIVE INSANITY.

Arthur C. Jacobson (*Medical Record*, November 23, 1912) considers the view that the true genius is necessarily crazy, a vulgar one, although it is commonly entertained by intellectual plebeians. They fail to distinguish between the insane temperament and actual insanity; although a fine distinction this is a vital one. The insane temperament itself, only less than actual insanity, is a handicap to the genius and not his "motor force." Genius makes for insanity, but neither insanity nor the insane temperament makes for genius. Al-

though, usually, if not always, the genius is of insane temperament, his best creative work reflects the man at his best (sanest). Clinical insanity vitiates his work and is the Nemesis of the delicately balanced genius, never his good angel, and in all respects is antithetic to the faculties that actuate the creative mind, but Nature implants the insane diathesis in accordance with her law of compensation. Psychopathological states, the result of the insane temperament or of the toxins of tuberculosis or colon bacteriemia, do at times excite and color the creations of true geniuses, but they are not geniuses because of the psychopathology. Genius, therefore, can in no sense be considered a disease.

WHAT IS A QUACK?

There has been some discussion, noted in recent issues of the *New York Times*, as to what constitutes a quack doctor. A quack is one whose main object is not the prevention of disease or the cure of the patient, but the acquisition of money.

Medical Law.

I. THE RIGHT TO PRACTISE MEDICINE AND SURGERY.

The Supreme Court of Illinois, in the case of *People v. Dunn*, 99 *Northeastern Reports* 577, has recently passed upon the interesting question of whether or not a diagnosis of one unlicensed to practise medicine constituted a violation of the medical act of that State.

The evidence in this case showed that two women inspectors of the State board of health, called upon the defendant by whom they were met at the door. After being shown into the parlor, one of the women asked the defendant, Mrs. Dunn, if she could cure cancer. She said she could and asked the prospective patient if she had one. The woman said she did not think so, but had a scar on her neck and had been sick for some time, whereupon Mrs. Dunn asked if she was afraid she would have cancer, the woman replied that she did not know. Mrs. Dunn then said that she would see in a minute, whereupon she left the two women and went into the next room, and came back with a magnifying glass. She then asked that the scar be disclosed, whereupon she made an examination of it and stated that it was not a cancer, but stated that she was sure that it was a tumor, and that she could cure it if her treatment were followed, but that she could not state how long it would take to effect a cure. Upon inquiry being made as to the manner of treatment, she said that she would have to poultice it for about a week, and after that she would apply a plaster which she put up herself, and that it would be necessary to come the following week when she would renew the plaster and keep it on until a cure had been effected. Upon being asked the amount of her charge Mrs. Dunn said it was \$2, which she paid. She then said to the woman that she would have to pay her \$50 more in two weeks and the balance of \$50 in four weeks.

As the woman was about to leave, Mrs. Dunn requested that if she did not return at the time ap-

pointed for the treatment, she telephone. When the woman asked Mrs. Dunn for her telephone number she handed her a card, on one side of which was printed: "I have discovered a new and seemingly unfailing cure for the deadly cancer. I have made some most astounding cures. Mrs. J. Dunn. Licensed physician in attendance. 4452 Eberly Avenue, Corner Sunnyside Avenue. Over." On the reverse side was printed: "Cancer and tumor can be cured. Success after others have failed. See Mrs. J. Dunn. 4452 Eberly Avenue. Cor. Sunnyside Avenue. Phone Irving Park 6771. Over." Neither of the women saw defendant again and no further treatment was given or requested.

Mr. Justice Cooke in passing upon the legal effects of these facts said:

While, strictly speaking, no treatment had been administered to Mrs. Seivert on the occasion of this visit, her ailment was diagnosed (by Mrs. Dunn) and every assurance given that she was prepared to treat her, and would give the treatment, and a time fixed when the first treatment should be administered. A fee was charged and paid for the diagnosis and consultation. We think it clear that (Mrs. Dunn) did by this act profess to treat the physical ailment of another, and that the verdict of the jury was proper.

(Mrs. Dunn) insists that the statute was not violated for the reason that Mrs. Seivert was suffering from no ailment whatever, and merely pretended that she had an ailment. There is nothing in the record that justifies this contention, even conceding that it would be a sufficient defense. For anything that appears in this record the diagnosis of (Mrs. Dunn) may have been correct.

In this case the constitutionality of the medical act was attacked, but the objections of defendant going to the constitutionality of the act were held to be untenable.

The medical act of Mississippi, providing that it shall be unlawful for one to practise as a physician without first having been examined and obtained a license as required by law, was, in the case of *State vs. Tucker*, 59 *Southern Reports*, 826, attacked as being prohibited by the fourteenth amendment of the Constitution of the United States, which provides that no State shall make or enforce any law which shall abridge the privileges or immunities of the citizens of the United States, nor deprive any person of life, liberty, or property without due process of law, nor deny to any person within the jurisdiction the equal protection of the law.

Mr. Justice Reed, in disposing of this question as to the constitutionality of the act, said:

The laws of this State regulating the practice of medicine, prescribing how license for engaging in that profession may be obtained, defining what is the practice of medicine, and providing penalties therefor, is within the police powers which may be lawfully exercised by this State. Certainly the State has a right to make proper and reasonable regulations for certain pursuits and professions. The purpose of the law is to protect the public, and to require all persons who may offer to engage in the practice of medicine properly to prepare themselves for such work, and to answer to the State by examinations as to whether such preparation has been sufficient. The regulations as contained in the laws of this State are certainly not unreasonable; and, as shown by the very wording of the statute, every person is given an opportunity to comply with them and enter into the practice of medicine.

X. THE PHYSICIAN AS WITNESS.

The case of *Chesapeake & Ohio Ry. Co. vs. Barger*, 72 *Southeastern Reports* 693, reviewed by the

Supreme Court of Virginia, illustrates the extent to which a jury may go in disregarding the testimony of a medical expert witness.

In this case an action was brought by a passenger, a woman, forty-four years of age, who was pregnant, against a railroad company, for injuries sustained by her in alighting from a car where a distance of about two feet intervened between the car step and the ground. On the following day she suffered a miscarriage. Upon the trial Doctor Givens, a witness introduced by the railroad company, who saw the fetus after it was delivered, testified as an expert and expressed the opinion that it had been dead for a week before its delivery. Notwithstanding Doctor Givens was the only expert who saw the fetus, the jury apparently disregarded his testimony and gave a judgment for the plaintiff.

The defendant appealed from the judgment, assigning as error the disregarding by the jury of this testimony of Doctor Givens, which defendant urged should necessarily have been accepted by the jury as showing conclusively that the miscarriage was not the result of alighting from the car, but that it resulted from causes existing before she left her home.

Mr. Justice Harrison, in passing upon this contention of defendant said:

This position cannot be sustained. No one can read the testimony of this witness without seeing that the jury might well have regarded Doctor Givens as a prejudiced and biased witness. In addition, his view is in direct conflict with other expert testimony and circumstances adduced by the plaintiff. Whether or not the miscarriage resulted from the injury sustained in alighting from the train was a question for the jury, to be determined upon due consideration of all the evidence bearing upon the issue. The testimony of the plaintiff is that she felt completely torn to pieces by the step from the train, especially through her side and the right side of her back, and that it was with great difficulty that she walked 100 yards to her daughter's house, and that she continued to suffer until the miscarriage occurred. She stated that she had been in her usual good health up to the accident, had borne eleven children, and had never been threatened with an abortion; but that on the day after she stepped from the train she knew from her suffering and general physical condition that an abortion was threatened. Doctor Godwin, an expert witness for the defendant, says that a woman can almost always tell anything unusual when she is pregnant; that, if the fetus is dead, she can very often tell by her feelings. Doctor Dodd, the attending physician of the plaintiff, testifies that the abortion occurring thirty-six hours after an injury of the kind received by the plaintiff is the natural and probable result of such injury; that from the displaced condition of the uterus, as disclosed by his examination, in the absence of any other physical disturbance, he would attribute the abortion and subsequent illness to the step from the train. This witness further says that from his examination of the plaintiff he found nothing to suggest that the womb had been in any way infected by carrying a dead fetus.

It is not necessary to recite other testimony and other circumstances furnished by the record in support of the plaintiff's view that the abortion resulted from the injury sustained by her in alighting from the train. We have said enough to show that the evidence on that issue was conflicting. The question was submitted to the jury by the defendant's instruction No. 4, which told them that if they believed the fetus to have been dead for two days or more prior to the happening of the abortion, they must find for the defendant. The verdict shows that the jury disregarded, as they had a right to do, the expert opinion of Doctor Givens, and rested their finding upon the other evidence tending to sustain the plaintiff's theory. A jury is not bound to accept as conclusive the testimony even of an unimpeached witness.

News Items.

The Harvey Lectures.—The next lecture in the course will be delivered on the evening of December 14th by Professor F. B. Mallory, of Harvard University, on the Infectious Lesions of Bloodvessels.

German Medical Society.—At the annual meeting of the German Medical Society of New York, held on the evening of December 2d, the following officers were elected: President, Dr. G. Seeligmann; vice-president, Dr. H. Fischer; recording secretary, Dr. M. Rehling; treasurer, Dr. S. Breitenfeld.

Third District Medical Society of South Carolina.—The Third District Branch of the South Carolina State Medical Society held its annual meeting in Greenwood on Thursday, November 21st. Dr. L. W. Bailey, of Clinton, was elected president to serve for the ensuing year, Dr. R. B. Epting, of Greenwood, vice-president, and Dr. G. P. Neel, of Greenwood, secretary-treasurer. Next year's meeting will be held in Laurens.

University of Maryland.—At the celebration of Academic Day on November 12th, the provost, Judge Henry Stoughton, announced that checks and securities to the amount of \$10,000 had been placed in his hands for the purpose of beginning the endowment of the chair for experimental physiology. This sum was the gift of Professor John C. Hemmeter, who at present holds the chair of physiology at the University of Maryland.

Alumni Association of the Lying-In Hospital of the City of New York.—The stated meeting of this association will be held on Tuesday, December 10, 1912, at the Harvard Club. The paper of the evening will be read by Dr. Leroy Broun, and is as follows: The Curability of Cancer of the Uterus and the Urgent Need of Educating Women in the Necessity of Seeking Early Advice. The discussion will be participated in by Dr. J. W. Merckoe, Dr. Howard C. Taylor, and Dr. H. J. Boldt.

New York Academy of Medicine.—Mr. Richard Lake, F.R.C.S., of London, is coming over to read a paper before the Section on Otology of the New York Academy of Medicine, on the evening of December 13th. The subject will be Vertigo, a clinical and therapeutical study. Among those who will participate in the discussion are Dr. James F. McKernon, Dr. Charles L. Dana, Dr. Percy Fridenberg, Dr. E. B. Dench, Dr. Philip Hammond of Boston, and Dr. Nathaniel Bowditch Potter.

Resolution on the Death of Doctor von Ramdohr.—The following resolution was passed by the medical board of the People's Hospital, New York, at a recent meeting:

WHEREAS, Dr. CESAR A. von Ramdohr had served the People's Hospital as consulting obstetrician since the foundation, and,

WHEREAS, in his life he had acted to his professional brethren with rare kindness, courtesy, and consideration, and

WHEREAS, The members of the medical board and lay boards of the People's Hospital deeply deplore the loss of his knowledge, skill, and kindly aid,

Resolved, That a copy of these resolutions be sent to the family of the late Dr. CESAR A. von Ramdohr, to the principal medical journals, and that they be spread in full on the minutes of the medical board.

JOSEPH BIBBER, M.D., secretary.

Transactions of International Congress on Hygiene and Demography.—Dr. John S. Fulton, secretary general of the International Congress on Hygiene and Demography, states that the transactions of the recent congress in Washington will be issued in a volume of about four thousand pages, the price being \$5 a set, delivered. The number of copies printed will correspond to the number of advance subscriptions received, and those who are interested should send their subscriptions at once to Doctor Fulton, as there will be no distribution through booksellers, and no subscriptions will be received after the first volume goes to press.

A Mental Hygiene Clinic.—A free dispensary for the treatment of early cases of nervous and mental diseases was opened at 205 Henry Street, New York, by the Committee on Mental Hygiene, in October. There is a staff of six physicians trained in the diagnosis of nervous and mental diseases, and, if necessary, a trained nurse will visit the homes of the patients to assist them in carrying out the course of treatment recommended by the doctor. Children who are not up to grade in school will be examined at this clinic, and a programme made for each which will aim to adjust the education to the child and not the child to a fixed school curriculum.

Christmas in the Hospitals of the Health Department.

—In the several hospitals maintained by the Department of Health of the City of New York, there will probably be about fifteen hundred patients at Christmas time, and the commissioner of health is planning to make Christmas day as happy as possible for those patients. He would gratefully receive donations of dolls, toys, books, clothes, money, and if enough money is given, he wishes to purchase for these hospitals such permanent articles of amusement and instruction as music boxes and pianos. If due notice is sent to the headquarters of the Health Department, Walker and Centre Streets, donations will be called for.

National Conference on Labor Laws.—The sixth annual meeting of the American Association for Labor Legislation will be held in Boston on December 27th and 28th. Among the topics to be discussed at this conference are Factory Inspection and Labor Law Enforcement, One Day of Rest in Seven, Protection against Lead Poisoning, and the Notification of Industrial Injuries, which constitute planks in the association's legislative programme. The plan for congressional legislation includes a new Federal Employee's Accident Compensation Law. Among other topics to be discussed is Occupational Diseases, which will be presented by Dr. John B. Andrews, of New York, secretary of the association.

Tri-State Medical Association.—The Tri-State Medical Association of Mississippi, Tennessee, and Arkansas, held its twenty-ninth annual meeting in Memphis on November 20th, 21st, and 22d, under the presidency of Dr. C. M. Lutterloh, of Jonesboro, Ark. There was a large attendance, and the meeting was in every respect the best ever held by the association. Dr. J. R. Nelson, of Whiteville, Tenn., was elected president to serve for the ensuing year, and the following vice-presidents were elected: For Tennessee, Dr. G. G. Mulhorn, of Brownsville; for Mississippi, Dr. J. C. Matthews, of Arwood; for Arkansas, Dr. J. W. Hassell, of Searcy. Dr. J. L. Andrews, who succeeds Dr. Eugene Rosamond as editor of the *Memphis Medical Monthly*, the official organ of the association, was elected secretary, and Dr. J. A. Vaughan was reelected treasurer, an office he has held for a number of years.

Gifts and Bequests to Hospitals.—The Board of Managers of the Children's Hospital, Philadelphia, announce the receipt of a gift of \$25,000 from Miss Hetty King, for the construction and equipment of an operating pavilion.

Announcement is made of an endowment gift of \$25,000 for the Joseph E. Schoenberg Memorial Hospital Building, dedicated recently as a part of the National Jewish Hospital for Consumptives, Denver. The building was erected at a cost of \$40,000.

By the will of Miss Elizabeth Norris Brown the Presbyterian Hospital, New York, will receive \$5,000.

St. Luke's Hospital, New York, will receive \$7,500, by the terms of the will of Francis M. Bacon, who died in Ridgefield, Conn., on September 12th.

By the terms of the will of Francis Amory, the Boston Lying-in Hospital will receive \$500,000, Harvard University will receive \$50,000, and the American Academy of Arts and Sciences, \$25,000.

The Pellagra Commission.—After spending more than four months in studying pellagra in South Carolina, the members of the Thompson-McFadden Pellagra Commission have returned to their headquarters in the New York Postgraduate Hospital. Much valuable information has been obtained regarding the epidemiology of the disease, but it is believed that further and more exhaustive investigation will be necessary before logical conclusions can be reached regarding the cause of the disease. The commission has expended only about half of the fund of \$15,000 donated by Colonel Robert M. Thompson, of New York, and Mr. John H. McFadden, of Philadelphia, and for this reason a second expedition will be sent to the same locality next spring. It is said that there are at present 50,000 persons in the South afflicted with pellagra. Among those who participated in the work were Captain Joseph F. Siler, Medical Corps, United States Army, Dr. Louis W. Sambon, a lecturer in the London School of Tropical Medicine, Passed Assistant Surgeon Phillip E. Garrison, United States Navy, and Dr. Ward J. MacNeal, assistant director of the laboratories of the New York Postgraduate Medical School. It is proposed to establish a hospital in Spartansburg, S. C., for the study and treatment of pellagra.

The Sale of the Red Cross Christmas Seals Begins.

On November 20th over 80,000,000 Red Cross Christmas seals were placed on sale in the United States, the proceeds to go for the benefit of the antituberculosis movement in the community where the seals are sold. The sale has been carefully organized, and with the exception of the States of Florida, Oklahoma, Nevada, and Idaho, the seals will be on sale in almost every city, town, and village in the United States, and even in Hawaii, Porto Rico, and the Canal Zone. They cost one cent each and will be sold from drug stores, department and other stores, post offices, railway stations, and in numerous other places. The American Red Cross Society has had over 85,000,000 seals printed, and it is believed that the edition will number 100,000,000 before the campaign is over. If the anticipations of the antituberculosis workers are realized, no less than \$400,000 will be realized from the sale of the seals. The national association announces that in case persons cannot obtain seals in the community where they live, they can secure them by writing to Red Cross Seal Headquarters, 715 Union Trust Building, Washington, D. C.

Smallpox in the United States.—A detailed statement of the prevalence of smallpox in thirty-one States and the District of Columbia during the second quarter of the current year appears in the November 20th issue of *Public Health Reports*. During this time a total of 5,735 cases were reported, with 53 deaths, of which 33 occurred in Texas. In this State there were outbreaks of the virulent form of smallpox, which accounts for the relatively large number of deaths in that State. In St. Joseph county, Ind., there appears also to have been a small outbreak of the severe type of the disease. Elsewhere the smallpox was of the benign type that has been generally prevalent throughout the country for a number of years. In the 31 States, exclusive of Texas, the average fatality rate was one death in 280 cases. The presence of smallpox during the period under consideration was not limited to the 31 States referred to. The disease was also present in the other States, but there is no means of ascertaining the number of cases that occurred.

Sixteen Million Dollars Required by Columbia University.—President Nicholas Murray Butler, in his annual report for the academic year ending June 30, 1912, states that it requires approximately \$16,000,000 to meet the present needs of Columbia University. Of this amount, \$6,000,000 is the estimated cost of moving the College of Physicians and Surgeons to Morningside Heights, involving rebuilding and extensive additional equipment. Of the remaining amount, only \$2,600,000 is asked for the erection of buildings. In this division are classified the funds necessary to complete University Hall at a cost of \$1,000,000, \$500,000 for a student clubhouse, and \$1,000,000 for the proposed stadium along the Hudson River. The remaining sum, about \$7,000,000, is asked almost exclusively for research work. Funds for research laboratories and the means of furnishing advanced instruction in the engineering schools are sought, for philosophical research, for research in agriculture; \$1,000,000 for a fund for the library to meet the demands which this research will bring, and \$1,000,000 for the work of the Institute of Hygiene and Preventive Medicine.

Personal.—The council of the Royal Society has awarded the Buchanan medal to Colonel William C. Gorgas, of the United States Army, for his sanitary administration of the works of the Panama Canal.

Dr. Richard C. Cabot, of Boston, was the guest of honor at a dinner given in the Belvedere Hotel, Baltimore, by Dr. and Mrs. Howard A. Kelly on the evening of November 25th. After the dinner Doctor Kelly took his guests to the Johns Hopkins Hospital, where Doctor Cabot delivered a lecture on Hospital Social Service.

Dr. William Seaman Bainbridge, of New York, has been appointed consulting surgeon to the Tarrytown Hospital, Tarrytown, N. Y.

Dr. Louis H. Berens has been elected president of the St. Louis Medical Society.

Major P. C. Fauntleroy, Medical Corps, United States Army, has been directed to proceed to Vienna, Austria, whence he will go to the scene of the Balkan war to observe methods of caring for the sick and wounded.

Dr. G. B. Adams, of the Iowa State Medical Board, has gone to Clinton for the purpose of making an examination of the schools of the parish in regard to hookworm infection.

Pith of Progressive Literature.

BERLINER KLINISCHE WOCHENSCHRIFT.

October 7, 1912.

1. MILLER: Hemoglobinuria.
2. HENKE and REITTER: Significance of Hemolytic and Anhemolytic Streptococci in Pathology of Tonsils.
3. BATZDORFF: Osteomyelitis after Smallpox.
4. RATKOWSKI: Diffuse Ectasia of Esophagus.
5. TREITEL: Preparation for Glaucoma Operations.
6. TOTH: Spray and Boiling Water in Treatment of Cutaneous Affections.
7. TRINCHESE: Influencing Wassermann Reaction by Change of Complement.
8. SHIGA: Wassermann Reaction after Salvarsan Injection.
9. MICHAELIS: Noviform.
10. ROOSE: Instrument for Aseptic Catheterization.
11. STRAUSS: Static Articular Disease.

October 14, 1912.

12. MOLLERS: Present Foundations of Tuberculin Treatment.
13. ORSZÁG: Apical Emphysema; Clinical Significance in Phthisis.
14. NIEVELING: Iodine Therapy in Pulmonary Tuberculosis.
15. DANIEL: Use of Loucasin.
16. ARON: Reclining Cure for Convalescent without Means and for Chronically Indisposed.
17. RICHTER: Spinal Affections in Lethal Anemias.
18. ISAAC: Splenic Anemia.
19. ROTHMANN: Founding of Station for Psychological and Physiological Brain Research of Primates.
20. KIRÁLYFI: Bacteriological and Chemical Examination of Bile in Typhoid Early Diagnostic Aid in Typhoid.
21. BITTORF and SCHIDORSKY: Nature of Wassermann Reaction.
22. GLAUBERMANN: Effect of Pressure on Coefficient of Blood Viscosity.
23. RÖHMANN: Cholesterase of Blood Corpuscles.
24. LÖTSCH: Substitution of Metal Spiral Springs for Rubber in Artificial Ichthemia.
25. FRANKEL: Sensitiveness in Abdominal Cavity.

October 21, 1912.

26. GAYLORD: Therapeutic Action of Metals on Cancer.
27. OERTEL: Noninflammatory Liver Necroses with Icterus in Severe Venous Stasis.
28. MÜNZER: Foundation Principles of Organotherapy.
29. HART: Thorax in Phthisis and Tuberculous Infections.
30. BUTTERSACK: Pathology of Diaphragm.
31. BRANDENSTEIN: Dysbasia arteriosclerotica and Flat Foot.
32. FRIEDMANN: Angiosclerosis of Abdominal Arteries.
33. WEYL: Are Lead Prints Poisonous?
34. FRANKEL: Effect of Röntgen Rays on Hemolytic Complement of Guinea-pig's Serum.
35. WOLFSOHN: Serodiagnosis of Staphylococcal Disease.
36. LINTZ: Simple Method of Obtaining Blood for Bacteriological and Serological Purposes.
37. DOMARUS and SALLÉ: Action of Thorium X on Blood Coagulation.
38. SODEMANN: Nomenclature of Important Medical Salts.

October 28, 1912.

39. SCHWALBE: Deficient Development.
40. CRAELLITZER: Hereditary Eye Affections.
41. STRICKER and RUBSCHOW: Carbonyl Treatment.
42. FULD: Examining for Hemorrhage of Alimentary Tract.
43. EINHORN: Agar Tubes for Determining Pancreatic Ferment.
44. DAVIDSOHN: Gastric Lipase.
45. DOBLIN: Neurogenic Rise of Temperature.
46. KLEISSEL: Recklinghaus's Equation.
47. BACHEM: New Thymol Derivatives.
48. SORESI: Blood as Therapeutic Agent.
49. FREILICH: Use of Antiformin in Arsenic Calculations of Urine after Salvarsan Injections.
50. BEYER: Chronic Fibrous Inflammation of Trachea Caused by Avirulent Diphtheria Bacilli.
51. DUCKLIN: Simplified Support for Operations on Pelvicum.
52. ABBRECHT: New Laryngoscope Spatula.

12. Foundations of Tuberculin Treatment.—Möller says that the most effectual and the most powerful treatment of tuberculosis to-day consists in combining the hygienic and dietetic cure with the specific tuberculin administration. The latter is not to be used schematically, but strongly individualized and given in increasing doses with the avoidance of reactions. The choice of the preparation is indifferent. Usually a cure cannot be brought about by the injection of one dose; in many cases a course of treatment covering a period of years is required.

13. Apical Emphysema and its Clinical Significance in Phthisis.—Ország believes that a circumscribed emphysema in the apex may make the recognition of a thickened tuberculous area very difficult; further, that Kronig's percussion area is not diminished in every case of apical involvement. It may be increased in apical emphysema, cavernous relaxation, and pneumothorax. Decreased intensity

with muffled percussion of the apex is not necessarily a sign of diminished infiltration since it may be the result of apical emphysema.

14. Iodine in Pulmonary Tuberculosis.—Nieveling noticed a strong expectorant action with the administration of iodine to tuberculous patients. This influenced very favorably the shortness of breath. The heart action becomes stronger and the palpitation present in so many cases is diminished. No effect of the iodine was noticed in respect to the fever. In general, it may be said that the iodine appears to have a good effect upon the induration and scar tissue formation of tuberculous areas; it delays the disintegration of tuberculous material. He recommends iodingidin, a tablet, three times a day.

15. Guaiacose.—Daniel brings to our attention a new drug, guaiacose, a combination of assimilable proteid and guaiacosulphoacid. Because of its remarkable action in severe and apparently hopeless cases of tuberculosis it must be considered as a valuable addition to the drug therapy of this disease. On account of its high price it has not yet been possible to apply the remedy generally.

16. Rest Cure for the Poor.—Aron recommends the use of the parks in large cities for the rest cure of the needy and sick.

20. Examination of the Bile in vivo as a Diagnostic Aid in Early Typhoid.—Királyfi finds that the upper part of the duodenum is normally free from bacteria. In most cases of cholelithiasis, however, the bacteriological examination of the bile obtained after the administration of the trial sweet oil breakfast showed the presence of bacteria, especially bacteria coli. In cholecystitis the presence of bacteria is the exception. The examination of the bile obtained by way of the stomach promises to be of material value in early diagnosis of typhoid. There is a close relation between the bacterial infection of the bile and its protein content. The microscopical examination of the bile possesses great diagnostic significance.

26. Therapeutic Action of Metals in Cancer.—Gaylord recalls, in connection with the newer chemotherapeutic experiments on cancer in animals, that Marim and he, years ago, were fortunate in being able to heal radically the thyroid cancers of the salmonides by the addition of iodine, mercury bichloride, or arsenic to the water in which the fishes were living. The results are all the more noteworthy since the solutions containing the metals were very weak.

28. Fundamental Principles of Organotherapy.—Münzer believes that the effects of organotherapy, which up to the present time have not been very brilliant, can be made more effective for the "activated" blood glands which are used, i. e., those whose secretive powers have been raised *intra vitam* by the removal of the antagonistic organ. Thus the carbohydrate assimilative function of the pancreas can be markedly increased by the operative removal of the posterior portion of the hypophysis.

29. Thorax in Phthisis and Tuberculous Diathesis.—Hart asserts that typical pulmonary phthisis begins in the apex. This localized individual predisposition is dependent upon a local cause. Freund and Hart see in this local condition a mechanical functional discrepancy in the region of

the upper thorax, in a narrowing of the upper bony aperture. This anomaly may be congenital and go hand in hand with asthenia, but it may also be acquired or be present entirely independently of asthenia universalis. The narrowing of the aperture does not preclude the existence of the asthenic predisposition, and the anomaly is to be looked upon more than an anatomical variation, as is the case of a tenth rib.

37. Action of Thorium X on Blood Coagulation.—Domarus and Salle, after injecting subcutaneously large doses of thorium X into rabbits, found that there was considerable delay in the coagulation time of the blood of these animals. Corresponding to this delayed coagulation period there was decreased leucocytosis. By the addition of the juice of the pressed organs to the blood of the animal treated with thorium X the coagulation time returns to normal. There is no relation between delayed coagulation and hemorrhagic diathesis.

41. Carbenzyme.—Stricker and Rubaschow experimented with this new substance recommended by Falk, Verth, and Rotky in the treatment of tuberculous fistulae and joints and arrived at the following conclusions: 1. Carbenzyme is a reliable sterile preparation. 2. Combinations with chloroform, alcohol, and potassium permanganate affect only in a slight degree its therapeutic properties. 3. Carbenzyme does not attack normal soft parts, as parenchyma, bones, or cartilage; fat is an exception. 4. Carbenzyme digests dead disintegrating tissue. 5. Reaction is usually slight, except in acute inflamed tissues and where there is great tension. 6. Tuberculous pus after carbenzyme injection becomes fluid, serous, and dark in color. It is capable of digesting proteid ten days after the injection. 8. The drug acts favorably on tuberculous tissue that is about to disintegrate in cold abscesses, tuberculous hygromata, and softened lymph nodes. 9. It digests the contents of ganglions, but the connective tissue sac remains.

42. Hemorrhage from the Alimentary Tract.—Fuld advises practitioners to examine the stools for occult blood in all cases of intractable stomach and intestinal disturbance and in persistent anemia. He describes a guaiac test and commends it highly for office practice.

47. New Thymol Derivatives.—Bachem works out the formulas and properties of thymolacetol and æthoxypropionic mentholester, and finds that they are two practical local anesthetics. The first might be used where free nerve endings are present, as in burns, ulcers of the stomach and larynx, etc., while its solution in mentholester might be applied in catarrhal irritation of the pharynx and larynx. For the latter it might be given in lozenge form.

49. Use of Antiform in Arsenic Determinations on the Urine after Salvarsan Injections.—Freifeld believes that after repeated salvarsan injection it is advisable to have at one's command a rapid and accurate method for determining the time of complete excretion of the salvarsan from the organism. The present methods are too complicated and the other simpler ones too unreliable. The author's modification rests upon a previous disintegration of the organic arsenic combinations by means of antiform with a consequent March's test for the detection of the arsenic. This has given the

most satisfactory results. By using a comparative scale it is also possible to determine the amount of the arsenic.

BULLETIN DE L'ACADÉMIE DE MÉDECINE.

October 22, 1912.

1. F. WIDAL, P. ABRAMI, E. BRISSAUD, and WEISSENBACH: Hematogenous Origin of Certain Cases of Acute Appendicitis.
2. MAURICE DE FLEURY: Pathogenesis and Treatment of Epilepsy.

1. Acute Hematogenous Appendicitis.—Widal, Abrami, Brissaud, and Weissenbach report the case of a woman aged forty-five years in whom after symptoms characteristic of typhoid fever, including abundant serous diarrhea, had been present for two weeks, in the course of which a pure culture of *Bacillus paratyphosus* (B) had twice been obtained from the blood, symptoms of appendicitis of a fulminating type suddenly appeared, death taking place in twenty-four hours. The cultures had been made four and two days, respectively, before the appendicular symptoms began. At autopsy the small intestine was found quite normal, without the least swelling of Peyer's patches or other lymphoid tissues. The appendix, however, was swollen and soft, and presented two necrotic areas, of which one had perforated and led to the fatal peritonitis. The cecum showed one similar area near the ileocecal valve, together with numerous ecchymoses. The paratyphoid organism was found in enormous numbers, and in almost pure culture, in these lesions, and in the cecum its distribution appeared to follow the vascular channels, thus further supporting the idea of an hematogenous infection. While a relationship between appendicitis and disorders such as measles, influenza, throat inflammations, pneumonia, scarlatina, mumps, and even cellulitis has already been observed clinically, and post mortem and experimental findings have also lent weight to the theory of hematogenous appendicitis, the case here reported affords the first direct bacteriological proof of the sequence of events in these cases.

2. Pathogenesis and Treatment of Epilepsy.—De Fleury refers to experiments recently conducted by Claude and Lejonne in which doses of strychnine insufficient to produce any convulsive effect in normal dogs were found to cause epileptoid attacks and death in animals in which meningoencephalitis had been induced several months before by subdural injections of zinc chloride. He believes that the primary cause in ordinary cases of epilepsy is a meningoencephalitis occurring either *in utero* or in early life (infantile eclampsia), and that the exciting cause of epileptic attacks or their equivalents in later life is irritation of the predisposed cortical centres, usually by toxic products absorbed from the intestinal tract. He reports twenty-one cases treated with a combination of an exclusively vegetable diet and lactic ferments. Very distinct benefit was noted in all but two severe cases, the convulsive attacks being either greatly lessened in frequency or entirely arrested. Most of the patients were under observation for four years. The diet consisted of meatless, starchy soups, fresh vegetables, raw or cooked salads and fruit, honey and jam,—always in sufficient amount to maintain a good general condition. Milk, eggs, fish, and meat were all excluded; the first two, when allowed, had been found clearly prejudicial. Water containing lactose or cane sugar was given rather freely (one litre

daily for adults), to be taken chiefly between meals. The lactic ferments, in fluid form, were given for a short period at the beginning of treatment and later only when gastrointestinal symptoms such as constipation and coated tongue reappeared. Bromides were continued in most instances, but in none were the doses given any larger than those which had proved ineffectual before the dietetic and lactic treatment.

LYON MÉDICAL.

October 27, 1912.

F. J. COLLET. Tuberculosis of Larynx in Childhood.

Laryngeal Tuberculosis in Childhood.—Collet, reviewing critically the literature of this affection, finds that all authors agree in emphasizing its low incidence. He himself, in over one thousand cases of laryngeal tuberculosis comprising all ages, observed only four instances in children. It is true, however, that more cases are found at autopsy than had been suspected during life. The impression gathered is that laryngeal involvement in children is notably limited to cases of generalized tuberculosis, i. e., occurs where either the resisting powers are unusually poor or the infection is unusually virulent. The condition may, however, arise in several ways: Through inoculation of the larynx by sputum; by a sudden extension of the disease in miliary foci, and from tonsillar lesions by way of the lymphatics; it may even occur when no pulmonary involvement is apparent. Collet recognizes several clinical forms, of which he reports illustrative cases: The common infiltrating and ulcerative form; the ulcerodematous form; the pseudopolypoid or vegetative form; the tuberculomatous form; the miliary form (probably the most frequent, and occurring at all ages); the pharyngolaryngeal, the hypoglottic, and the perichondritic forms. The symptoms in children are often nil; the most frequent and earliest to appear is dysphonia, the significance of which, however, may easily remain unsuspected; dysphagia may be marked in the presence of epiglottic and arytenoid ulcerations; dyspnea is far more frequent than in adults. Enlarged lymph glands are often present, but are related rather to the general than to the laryngeal infection. In all doubtful cases, laryngoscopy should be availed of; even in the very young, Esca't's tongue depressor, which permits of drawing forward the epiglottis, will generally overcome all difficulties in the technique. The prognosis is unfavorable, death apparently always occurring within eighteen months. The treatment is palliative only, consisting of balsamic opiated inhalations, soothing liniments, wrapping the neck in cotton, and if possible endolaryngeal insufflations of orthoform and diiodoform. A dilute phenol solution should be used for cleansing purposes. Dyspnea requires tracheotomy, not intubation.

PARIS MÉDICAL.

November 2, 1912.

1. P. CARNOT: Therapeutics in 1912.
2. VAQUEZ and LAUBRY: Specific Treatment of Syphilitic Aortic and Aortic Aneurysms.
3. SABRAZES and H. BONNIN: Isoserotherapeutics.
4. MILLIAN: Signs of Intolerance to 606 during Injection.
5. LUCIEN CAMUS: How to Obtain Pure and Active Vaccine.
6. H. BOSQUET: Unequal Action of Digitalis: Remedy.
7. MATRICE GUIRE: Extrapulmonary Fibrosis.
8. PAUL GUÉNIOT: Serotherapy in Obstinate Vomiting of Pregnancy.

2. **Treatment of a Syphilitic Aorta.**—Vaquez and Laubry advise first the daily administration of one centigramme mercury cyanide intravenously, or the substitution of one of the soluble mercury salts, e. g., the biniodide; along with this treatment they would give the iodides internally. If results are negative or uncertain, they counsel a series of injections of salvarsan.

5. **Pure Vaccine.**—Camus states that at home only glycerinated vaccine should be used, and only when perfectly fresh; as to the colonies, powdered vaccines are required, but they should be forwarded as rapidly as possible and protected from changes of temperature.

8. **Serotherapy in Vomiting of Pregnancy.**—Guéniot notes the logical idea involved in injecting, in these cases, a serum derived from the blood of a woman normally pregnant; but, in practice, he observes with some amusement that improvement has been manifested from serum obtained from men and from horses. Consequently the treatment, although apparently useful, is still altogether empiric.

PRESSE MÉDICALE

October 26, 1912.

1. G. DURANTE: Subacute Inflammation and Inflammatory Pseudosarcoma.
2. LÉON MEUNIER: Treatment of Delayed Gastric Pains by Dilatation of Pylorus.
3. JOSEPH DECCING and LOUIS DECCING: Technique of Removal of Nasopharyngeal Fibromata.
4. P. F. ARMAND-DELLIE and L. LAUNOY: Use of Erythrocytes Preserved in Formalin in Performance of Wassermann Reaction.
5. P. MOUREL and P. BAUFLE: Muscular Sporotrichosis.

1. **Subacute Inflammation and Inflammatory Pseudosarcoma.**—Durante calls attention to the histological characteristics of subacute inflammation, a pathological process which textbooks generally fail to mention and which is frequently mistaken for sarcoma. It does not consist, as is sometimes stated, in a mixture of the phenomena of acute and of chronic inflammation, but presents special appearances of its own. The proliferation of connective tissue cells, less rapid than in the acute form, gives time for the cells to undergo a certain degree of evolution and progress from the embryonal type to a higher stage of development; it is still too rapid, however, to permit of their reaching the adult state and of forming fibrils. The resulting cells vary somewhat in morphology, but generally appear as elongated, oval, or even frankly fusiform cells, with similarly shaped nuclei. These elements closely resemble sarcomatous cells in all the aspects of the latter, are likewise disposed in irregular bundles, and present vascular channels without specialized walls. Unless adjoining areas of tissue unmistakably inflammatory occur in the section examined a diagnosis of sarcoma is likely to be made. The variations in the morphology of the cells in individual preparations may allow of distinguishing the subacute inflammatory tissue from sarcoma; but in some instances,—probably only where the causative agent is a living parasite throwing off products of relatively low toxicity,—the entire morbid focus consists of subacute inflammatory tissue. Even progressive increase of size, recurrence *in situ* after incomplete excision, and appearance elsewhere of tissue having the same

spindle cell structure (pseudometastases, the result of a multiplicity of infected areas), features generally considered characteristic of malignant connective tissue tumors alone, may occur, in the absence of all tendency to malignancy, in subacute or chronic inflammation. Under these conditions, Durante concludes that the diagnosis of sarcoma can henceforth be reached only by exclusion.

2. **Treatment of Delayed Gastric Pains by Dilatation of Pylorus.**—Meunier compares the small duodenopyloric ulcerations giving rise to the so called "hunger pains" with anal fissure, and discounts surgical intervention (gastroenterostomy) in favor of mechanical dilatation by means of a small rubber bulb with attached tube, which is swallowed by the patient, inflated some hours later or on the following day, and gently withdrawn through the pylorus. After five or six dilatations, at intervals of two or three days, relief is generally obtained, though in some instances the pain persists and gastroenterostomy is advised. The mechanical dilator used resembles that devised by Einhorn.

3. **Technique of Removal of Nasopharyngeal Fibromata.**—Ducuing and Ducuing discuss in detail the surgical treatment of the rapidly growing fibromata met with in males between the ages of ten and twenty-three years. They consider avulsion by torsion the method of choice, whether the operation be done through the normal channels or with artificial modes of access. Where the latter procedure is required, they frequently follow a technique which differs from that of Moure, Duverger, and Faure in that no infraorbital incision is made. The incision begins at the nasal spine of the frontal bone and follows the side of the nose down to the upper lip, which it divides in the median line. The superior maxillary bone is not resected, but after reflection of the soft tissues, including the intact infraorbital nerve, the anterior, internal and posterior walls of the antrum, with the middle and lower turbinates, are removed, thus affording a broad route of access not only to fibromata, but also to the sphenoid sinus, hypophysis, and basilar process. Where the fibroma shows a pterygomaxillozygomatic prolongation, the posteroexternal wall of the antrum can also be removed. This procedure possesses all the advantages of resection of the maxilla without its disadvantages. The operative shock is almost nil; the mouth and dental apparatus, the floor of the orbit, and the sensory nerve supply of the genial region are left intact, and the scar of the incision is wholly masked by the natural facial folds.

4. **Use of Erythrocytes Preserved in Formalin in Wassermann Reaction.**—Armand-Delille and Launoy find that red corpuscles kept in formalin in the manner they describe react exactly as do fresh corpuscles in the Wassermann, Brucke, and Hecht-Bauer reactions, for a period of three weeks. To ten c. c. of thrice washed corpuscles, brought back to the volume of the original blood, is added 0.2 c. c. of a one to ten dilution of the ordinary formaldehyde solution, and the mixture stirred. The corpuscles become slightly brownish, but this coloration disappears when they are diluted in normal saline and shaken with air. The preserved corpuscles are useful where fresh ones are not avail-

able, and even when an icebox is at hand the supply need only be renewed every three weeks instead of every week.

SEMAINE MÉDICALE.

October 23, 1912.

1. F. LUTARS: Alleged Danger Attending Use of Esmarch's Bandage.

October 30, 1912.

2. M. ROCH and E. COTTIN: Atropine Test in Diagnosis of Meningeal and Cerebral Conditions.

1. **Danger Attending the Use of the Esmarch Bandage.**—Lejars, discussing the cases of paralysis of the upper extremity due to the Esmarch bandage which have been reported, points out that the danger lies not so much in excessively prolonged constriction as in faulty application of the bandage, a procedure which is frequently left in the hands of inexperienced assistants, who are ignorant of the precise amount of pressure to be applied. The elastic bandage used should be at least ten cm. wide, thin, supple, and soft. The first few turns should cause but little constriction, the greatest amount of pressure being applied with the intermediate turns. Care should be taken that the bandage does not fold on itself, and the constriction considered sufficient as soon as the pulse disappears from the distal arteries. In the upper arm, the bandage should be applied either in the upper or lower third, never in the middle third. With these precautions taken, Lejars thinks no fear of subsequent paralysis need be entertained. In the presence of atheroma, the use of the constricting band is contraindicated; in amputations, digital compression of the vessels at the root of the limb is often sufficient, and if it is skillfully applied, and any large vessels cut are immediately closed by pressure, less blood and time will be lost than with the bandage.

2. **Atropine Test in Diagnosis of Meningeal and Cerebral Conditions.**—Roch and Cottin perform this test by injecting subcutaneously two mgms. atropine and noting any changes in the pulse thereafter. The beats should be counted every fifteen minutes for several hours. The test permits of distinguishing bradycardia due to excitation of the bulbar pneumogastric centres through endocranial inflammation and augmented pressure, from that due to disease of the heart muscle. In the first instance, the rate is always markedly increased—sometimes more than doubled—owing to the paralyzing effect of atropine on the inhibitory vagal terminals in the heart, whereas in myocardial disease it is unaffected or even slightly reduced. The acceleration, when it takes place, begins in fifteen minutes, and is at its height in one half to one hour. While superfluous in typical cases of meningitis, the test proved very useful in doubtful cases where the cardinal symptoms of the disease were absent, and, on the other hand, drew attention to a cerebral disturbance in some cases where none had been suspected. Thus, in a case taken to be one of typhoid fever—though diarrhea and spots were absent and the pulse was 54—with the fluid obtained by lumbar puncture negative, atropine increased the pulse to 120; later typical meningitic symptoms appeared. In old patients with arteriosclerosis, more or less marked mental disturbances, and various minor phenomena that

might be due either to insufficient blood supply to the centres or to mild forms of encephalitis, pachymeningitis, or latent tumors, the test also proved of great diagnostic value. It is both harmless and simple in execution, and for the latter reason cannot fail to take precedence, in general practice, over polygraphic work, which requires expensive apparatus and sometimes fails to give with certainty the information sought. In a few exceptional cases, such as those where cardiac and cerebral lesions co-exist, where the vagi are irritated in their course from the medulla to the heart, and where bradycardia occurs in association with uremia, jaundice, neurasthenia, or convalescence, the atropine test is likely to be positive where endocranial disease is either absent or only in part causative.

ROUSSKY VRATCH.

August 25, 1912.

1. A. A. MARLAKOFF: Eye and Revolver.
2. N. I. RATCHINSKY: Treatment of Acute Uterine Hemorrhage.
3. A. A. OPOKIN: Present Status of Surgery of Bloodvessels. Plastic Operations.
4. I. G. STUKKEJ: Infra-scapular Thoracic Resection of Upper Extremity.
5. M. O. ROMM and A. I. BALASHOFF: Reaction of Agglutination of Blood in Epidemic Dysentery.
6. W. I. SKWORTZOFF: Amount of Fat in Woman's Milk.
7. N. P. DANILOFF: Acquired Complete Atresia of Vagina.

September 1, 1912.

8. D. O. OTT: Results of Bacteriological Investigation of Abdominal Sections by Vaginal Route.
9. S. S. CHOLMUGOROFF: Fifteen More Cesarean Sections in Addition to Forty-five Previously.
10. N. R. BLUMENTAL and S. K. DZERSHOVSKY: Administration of Antitoxic Serums by Bowel.
11. B. U. CHOLMUGOROFF: Division of Urethra as Necessary Condition to Successful Result of Plastic Operations on Urethra and Penis; as Remedial Agent in Multiple Fistula of Urethra; and Helpful Method in Treating Serpiginous Ulcers of Penis.
12. A. A. STRUKOFF and W. K. KOZANOFF: Echinococcus of the Liver.
13. M. I. RABINOVITCH: Binding of Complement of Watery Extract of Causative Agent of Typhus Fever with Serum of Patients Who Have Recovered.
14. L. N. KOREL'KIN: Diagnostic Significance of Albumin Reaction in Sputum.
15. R. I. TRUBIN, JR.: Action of Alcohol on Central Nervous System. Causes and Treatment of Chronic Alcoholism (Creation of Digest for Alcohol).

2. Treatment of Post Partum Hemorrhage.—

Ratchinsky resorted to the following very simple and effective method of stopping severe post partum hemorrhage: With the hand in the vagina he raised the uterus out of the pelvis and, by tilting the body of the uterus forward, brought it well over the pubis. By this procedure the broad ligament is put on a stretch, distorting and compressing the uterine vessels, while the uterus is compressed against the pubic bones. In two cases he succeeded in the manœuvre by external manipulation alone. He also employed the method successfully in two cases of metrorrhagia, one due to metroendometritis and the other fibroid. In looking up the literature, the author discovered that this method was suggested by Fritsch, in 1904, although the purpose was merely to produce compression of the bleeding uterus. The same idea occurred to Ott, a Russian, in 1901. Yet, notwithstanding the simplicity and effectiveness of the method, it received no notice from obstetricians.

6. Percentage of Fat in Human Milk.—

Skwortzoff analyzed the milk of 119 mothers at the Moscow Foundling Home and found that the proportion of fat in woman's milk usually given as 3.5 to 3.8 per cent. is too high, for at least the Russian woman of the lower class. The proportion he found was 3.0 to 3.2 per cent., fifty-five per cent. of the women secreting a milk with less than three per cent. of fat.

8. **Vaginal Celiotomy.**—Ott prefers the vaginal route because of the lesser possibility of infection from the air entering the abdominal cavity during the operation. In changing the patient to the Trendelenburg position, the air which rushes into the abdominal cavity is filtered through sterile gauze and thus rendered aseptic. Bacteriological investigation of the air in the abdominal cavity during the operation showed it to be practically sterile. Of sixty-one cases only in two were microorganisms found. He also found that sterilization of the vagina and uterine cavity by the usual methods, or by the use of iodine, rendered the parts aseptic.

10. **Rectal Administration of Antitoxine.**—Blumental and Dzershovsky determined by experiments on animals that antitoxine administered by the rectum is not absorbed by the blood and has no therapeutic effect.

14. **Albumin in the Sputum.**—Korelkin concludes that while albumin is not infrequent in sputum, its presence nevertheless serves as a valuable diagnostic aid in diseases of the lungs. The constant presence of albumin distinguishes an inflammation of the parenchyma of the lungs from a simple bronchitis, in which the albumin is slight and inconstant. In tuberculosis, the presence of albumin on repeated examinations of the sputum is pathognomonic, provided inflammation of the kidneys, heart, and lungs can be excluded. A negative result, even on a single examination, speaks against active tuberculosis. The presence of albumin will also enable one to diagnose a central pneumonia in the absence of characteristic clinical signs.

BRITISH MEDICAL JOURNAL.

November 16, 1912.

1. A. RANSOME: Duties of State in regard to Tuberculosis.
2. J. A. GIBB: Tuberculosis in General Practice.
3. E. R. PREST: Importance of Toxine Saturation of Tissues.

2. **Tuberculosis.**—Gibb discusses the value of the use of tuberculin in the treatment of tuberculosis and expresses the opinion that its employment is a valuable adjunct to the other measures. The negative phase following the injection of tuberculin is concurrent with the rise of temperature and even prolonged after its fall. As the negative phase is not passed in less than three days, injections at three day intervals are wrong in principle. One must also not give large enough doses to cause a rise of temperature. If the temperature is subnormal, continued use of tuberculin will cause it to return to normal by degrees. The same is true of a subnormal blood pressure, which will rise slowly to the normal level under the exhibition of tuberculin. The interval between the doses of tuberculin should be a week in most cases. The immunity which arises from the use of tuberculin can in no sense be considered passive. The patient may show a toximmunity and yet the focus of the disease may remain unhealed. Or the focus may heal without the patient showing a general toximmunity. And again focal healing may have occurred, though the individual shows intense sensitiveness to tuberculin, the healing being brought about in this case by a local toximmunity.

3. **Toxine Saturation.**—Prest, speaking of tuberculosis, says that when the bacilli are very virulent and give rise to so much toxine that it cannot all be anchored to the surrounding tissues, some of

the toxine will reach the healthy tissues where antibodies will be formed. This is aided by the fact that overproduction of toxine diminishes the development of fibrous tissue and thus permits greater mobility of the diseased focus. When the antibodies again return to the diseased area they will tend to inhibit the growth of the bacilli there situated. If they completely inhibit their growth a cure will result. If, on the other hand, there is so much activity, or the tissues yield an insufficient amount of antibody, then the healthy tissues will arrive at a condition which may be termed toxine saturation. No antibody can be produced and the circulating toxine will assist the activity of the bacilli, the disease will spread rapidly, and death will soon result unless immediate measures are taken to combat this condition. Such a state of affairs does not occur in tuberculosis attacking relatively immobile tissues. If treatment of tuberculosis is to be successful we must be able to determine the presence or absence of toxine saturation of the tissues. This is simple and is best accomplished by means of the temperature curve. If it is found that the rectal temperature, taken before the patient rises from bed in the morning, is above 36.5° C. (97.7° F.), it is an indication that the tissues are approaching the point of toxine saturation. If the temperature during the day while the patient is at rest in bed rises above 37.5° C. (99.4° F.), the same conclusion may be drawn. It may also be concluded that when night sweats occur toxine saturation is present. In patients in whom the temperature does not rise to the point which indicates toxine saturation there may be one of two conditions, either they may have attained an equilibrium such that a night's rest in bed is sufficient to overcome the excess of toxine, or they may have large capacity for dealing with the toxine. Brief exercise will readily serve to distinguish between these two classes, the former showing signs of toxine saturation after the exercise, the latter having no subsequent rise of temperature. The capacity to withstand considerable exercise is a very favorable prognostic sign. Tuberculin should not be used in those patients who show a toxine saturation, and in those in whom has developed a tolerance for the toxine, it must be used with the greatest of care, for there is reason to suppose that the administration of tuberculin to such patients may hasten the fatal event without producing any marked deviation of temperature.

LANCET.

November 16, 1912.

1. NIETNER: Modern Combat against Tuberculosis among Children.
2. W. RUSSELL: Motor and Speech Paralysis Due to Cerebral Angiospasm.
3. S. WEST: Respiratory Neuroses.
4. F. EVE: Treatment of Sarcoma of Long Bones.
5. C. E. WALKER and H. E. WHITTINGHAM: Complete Removal by Operation of Transplanted Mouse Cancer.
6. S. STEINBERG: Duty of Practitioner in Cases of Ophthalmia neonatorum.

3. **Respiratory Neuroses.**—West cites the contentions of Hughlings Jackson with regard to the existence of two respiratory mechanisms, the automatic or medullary centres, and the voluntary or cerebral centres. It is in derangement of the higher or cerebral centres that West thinks the explanation of the respiratory neuroses must be sought. These neuroses may be divided into two groups: 1. Those associated with dyspnea, cyanosis,

and suffocation, (a) true asthma; (b) laryngismus stridulus and some other laryngeal spasms; and (c) whooping cough. 2. Those without dyspnea and its consequences: (a) paroxysmal tachypnea; (b) air hunger of diabetes and the allied condition in uremia; and (c) periodic respiration in its two forms, Cheyne-Stokes and grouped respiration. In asthma the chest is almost fixed in the position of deep inspiration, the diaphragm depressed and almost immobile, and the bronchial muscle contracted. These are all coordinated phenomena and no one can be regarded as the primary cause. West likens asthma to epilepsy in many respects. The subject must be predisposed, that is must be "asthmatic"; a very wide variety of causes may act as excitants of an attack, and these do not thus affect a normal person; the attack is often preceded by some definite premonitory symptom, which may be likened to an aura, and the removal or treatment of this may ward off an attack; after an attack of asthma the patient may be exposed with impunity to the exciting cause without the production of a return of the attack; asthma is often hereditary or familial; and lastly it is bilateral. A further remarkable fact about asthma is that the development of organic pulmonary disease or of disease of the central nervous system may lead to the disappearance of the asthma. All these considerations lead to the conclusion that asthma must be of central localization, that it is a respiratory neurosis and not a disease of the respiratory tract. The other three conditions mentioned can also be placed in the class of respiratory neuroses, though some will probably be loath to regard whooping cough as other than a bacterial and infectious disease. This is probably true, but it is merely contended that the stress of the infectious process falls upon the upper respiratory centres. Air hunger seems to be the result of the action of a toxine, a chemical body, upon the respiratory cerebral centres. Periodic respirations are also due to some neurosis of the voluntary respiratory centres. In all of these conditions, therefore, it may be concluded that it is not the automatic respiratory centre that is at fault, but that the higher cerebral respiratory centres are the ones involved.

4. **Sarcoma of the Long Bones.**—Eve describes the several operative procedures and states that very good results may be obtained from their early employment. He relates his experience with the use of Coley's fluid; in ten patients, in each of whom more than ten injections were used, there was absolutely no result in seven, in one the recurrent growth nearly disappeared and was removed by operation, but the condition had recurred again within a year, and in the remaining two cases there was diminution in the size of the growth, although neither was cured.

5. **Removal of Mouse Cancers.**—Walker and Whittingham removed transplanted cancers from forty-three mice after the growths had become very large, and in every instance the removal was complete and the cure was permanent. In ten of the forty-three there was recurrence, but removal of this in each case served to complete the cure. They attribute this ability to bring about a complete removal of the cancer in these instances by operation

to the fact that these transplanted cancers are always surrounded by a complete capsule, and that they do not tend to invade the surrounding tissues.

INDIAN MEDICAL GAZETTE.

October, 1912.

1. W. E. BANNERMAN: Treatment of Snake Bite by Potassium Permanganate.
2. V. B. NESFIELD: Extraction of Cataract in Capsule, by Division of Suspensory Ligament.
3. G. V. BROWSE: Special Type of Recurrent Fever Due to Spirochete.
4. LEONARD ROGERS: Gleanings from the Calcutta Post Mortem Records.
5. G. D. FRANKLIN: Surgical Cases.
6. O. G. HASSAN SUHRAWARDY: Double Vulvulus of Large Intestine, Posterior Gastrojejunostomy.
7. D. G. COOPER: Von Pirquet's Reaction Followed by Acute.
8. D. M. TAYLOR: Relationship between "Pyrexia of Uncertain Origin" and Enteric Fever.
9. A. R. S. ANDERSON: Abscess of Liver with Amœbæ, but without Antecedent Bowel Disease.
10. E. A. C. MATTHEWS: Fatal Case of Hemorrhage into Pancreas.
11. W. H. THORNEY: Bullet Wound of Lower End of Femur, Death from Hemorrhage from Popliteal Artery Nine Days Later.
12. H. B. STERN: Case of Molluscum fibrosum with Definite Family History.

1. **Treatment of Snake Bite by Potassium Permanganate.**—Bannerman investigated the treatment of snake bite by permanganate of potassium in consequence of representations made by Sir T. Lauder Brunton to the government of India. In the first series of experiments natural conditions of biting were imitated as closely as possible. The dose was given by the actual bite of the cobra or daboia, and it is noted that, after having bitten, the cobra remains attached to his prey for an appreciable time, while the daboia darts with incredible rapidity and releases its victim instantly. The latter occasionally fails in its stroke. These experiments showed that: 1. A dog bitten by a cobra cannot be saved by the local application of powdered potassium permanganate rubbed in after free incision of the bitten place; nor by a similar application of a solution of the powder. 2. It may be saved by the immediate subcutaneous injection of ten c. c. of a five per cent. solution of the drug; but that this solution is so strong as to act as an escharotic. 3. If this treatment is delayed for even two minutes, it loses its efficacy. 4. A dog bitten under natural conditions by a Russell's viper, daboia, cannot be saved by the drug, however applied. Another series of experiments was carried out, in which an attempt was made to inject the drug intravenously, but it was found that the intravenous injection of even forty c. c. of a half of one per cent. solution of potassium permanganate caused death from intravascular clotting. Next, the minimum lethal doses of the venom of these snakes for dogs were determined. It was also determined that the venom of both in solution was neutralized *in vitro* by half its weight of potassium permanganate in solution in five minutes. Then it was shown that even four times the amount that serves to neutralize the venom in a test tube will not with certainty prevent fatal poisoning in an animal which has received ten minimum lethal doses. It was also found that crystals of potassium permanganate, when rubbed into incisions in a dog's leg, produce extensive ulceration, and that, when combined with the local action of daboia venom, they may cause even necrosis of the small bones. Bannerman remarks: "The conclusions as to the action of potassium permanganate powder on small doses of cobra venom injected just under the

skin appear to be that this treatment is of some little use under these highly artificial conditions. It must be remembered, however, that a snake does not deposit its venom under the skin, but, striking as it does with its fangs at right angles to the skin, the poison must usually be placed well below the fascia of the part, and therefore further removed from the applications of a chemical antidote. With regard to daboia venom injected just under the skin the results are very similar to those obtained with the venom of the cobra, i. e., that under such artificial conditions the treatment by free incision and rubbing with powder of potassium permanganate is of some little use. As a practical measure for employment after actual snake bite it appears to be of no use whatever."

2. **Extraction of Cataract in Capsule.**—Nesfield objects to Smith's operation that the force necessarily exerted to rupture the suspensory ligament is very apt to rupture the hyaloid as well when the lens is soft. He performed over 100 experiments on normal eyes with normal lenses on the dead subject and found the suspensory ligament to be so strong that it could not be ruptured by external pressure without also bursting the hyaloid. He has devised, therefore, a wire hook that is passed into the anterior chamber, beneath the iris to the margin of the lens, then rotated, made to tear the ligament along its inner and lower and outer and lower borders, and then withdrawn. The shaft of the wire must not be allowed to press against the lens, for fear of rupturing the hyaloid; the movement must be steady and gentle, and the surface of the wire must be very smooth. Other points in which he modifies Smith's technique are that the incision should not finish in the cornea, but that there should be conjunctival flap; that the free edge of the iris should not be cut but only its base, thus giving a round, small, and active pupil; and that the dressings should be changed every day. For the full details of Nesfield's method reference should be made to the original. He has thus far done 503 operations by this method, and says he has obtained excellent visual results.

3. **Special Type of Recurrent Fever.**—Browse has observed a number of cases of a disease which differs from classical recurrent fever in the type of the pyrexia and the blood changes, which are slightly marked polymorphonuclear increase and distinct large mononuclear increase, while it presents a resemblance in some of its clinical features. It differs from African tick fever chiefly in the very great contrast in climatic conditions under which it develops. He finds the disease to be caused by a spirochete.

BOSTON MEDICAL AND SURGICAL JOURNAL

November 21, 1912.

- ANDREW F. DOWNING: Syphilis: Treatment, Old and New.
- J. L. POMEROY: Difficulties in Interpreting Significance of Regional Muscle Rigidity and Degeneration about Theoretic Diagnostic Limitations.
- PHILIP LEVINSKY: Importance of Early Recognition of Suppurative Otitis media.
- JOHN B. HAWES, JR.: Survey of Tuberculosis Statistics in Massachusetts.
- ARTHUR D. HARRINGTON: Pellagra in Rhode Island.

5. **Pellagra in Rhode Island.**—Harrington says that pellagra has existed at the State Hospital for the Insane at Howard, R. I., at least since 1891. The total number in all the State institutions at

Howard since the summer of 1910, of which there is definite record, is thirty-seven, with sixteen deaths, a mortality of 40.5 per cent. He also avers that pellagra is not confined to the locality of these institutions, but exists in the community also.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

November 23, 1912.

1. CHARLES BASKERVILLE: Chemistry of Inhalation Anesthetics.
2. FREDMAN ALLEN: Spinal Anesthesia.
3. JAMES T. GWATHMEY: American Statistics (on Anesthesia).
4. ALBERT H. MILLER: Postoperative Mortality from Anesthetics.
5. CHARLES K. TIERCE: Limitations of Nitrous Oxide with Oxygen as a General Anesthetic.
6. JOSEPH E. LUMBARD: Helps in Surgical Anesthesia.
7. WILLIAM S. BAINBRIDGE: Spinal Analgesia.
8. FRANK W. PINNEO: Anesthesia by Pharyngeal Insufflation.
9. LE GRAND KERR: Reasons for Surgical Failures in Children.
10. C. E. PRUDDEN: Modification of the Ferguson Open Drop Method Ether Inhaler and Mode of Etherization.
11. MOSES SALZER: Nitrous Oxide-Oxygen Anesthesia with Fatal Case.
12. FREDERIC W. HITCHINGS: Resuscitation from Drowning: Persistence of Heart Beat; Death from Nonresuscitation of Respiratory Centres.
13. J. P. CROZER GRIFFITH: Ability of Mothers to Nurse Children.
14. H. M. McCLENNAN: Supplemental Breast Feeding in Infants.
15. BEVERLY R. TUCKER: Hysteria Presenting Symptoms Usually Found Only in Organic Diseases.
16. M. I. SCHAMBERG: Reciprocal Influences of Morbid Conditions of Mouth, Jaws, and General Economy.
17. LOUIS FEILMANN: Temporary Toxic Anæmia and Paralysis Following Injection of Ethyl Alcohol into Chronic Emphysema Sinus.
18. HENRY D. FURNISS: Cystoscope Holder.
19. CARL G. PARSONS: Ether Mask Cover.
20. A. BELCHAM KEYES: Abdominal Wound by Revolver Bullet; Twenty-two Intestinal Perforations; Operation; Recovery.

1. **Chemistry of Inhalation Anesthetics.**—See this JOURNAL for June 15th, page 1292.

2. **Spinal Anesthesia.**—See this JOURNAL for June 15th, page 1292.

3. **American Statistics of Anesthesia.**—See this JOURNAL for June 15th, page 1292.

4. **Postoperative Mortality from Anesthetics.**—See this JOURNAL for June 15th, page 1292.

5. **Limitations of Nitrous Oxide with Oxygen as a General Anesthetic.**—See this JOURNAL for June 15th, page 1292.

6. **Helps in Surgical Anesthesia.**—See this JOURNAL for June 15th, page 1292.

7. **Spinal Analgesia.**—See this JOURNAL for June 15th, page 1292.

8. **Anesthesia by Pharyngeal Insufflation.**—See this JOURNAL for June 15th, page 1294.

9. **Some Reasons for Surgical Failures in Children.**—See this JOURNAL for June 15th, page 1294.

10. **Modification of the Ferguson Open Drop Method Ether Inhaler and Mode of Etherization.**—Prudden has used the principle of the Ferguson inhaler as a working base, adding to it the simple and well known celluloid gas chamber and rubber mouthpiece of the ordinary nitrous oxide inhaler. The advantages are many. Six and one third minutes are the average time consumed from beginning anesthetic administration to complete surgical anesthesia. The average amount of ether required to induce surgical anesthesia is two ounces, while to keep the patient in surgical anesthesia an average of 6.8 ounces are consumed. In the use of the apparatus there is no face covering except the rubber mouthpiece, so that the anesthetist has a constant and unobstructed view of the patient's face, pupils, etc. The patient, moreover, does not suffer the fright which would follow the use of a face covering of towels, excluding his vision.

11. **Nitrous Oxide-Oxygen Anesthesia; Report of a Fatal Case.**—Salzer concludes a consideration of this matter with the opinion that nitrous ox-

ide-oxygen is not safest for the occasional anesthetist and should be administered only by an expert; the physiological factors involved are more numerous than with any other anesthetic; a preliminary injection of morphine should always be given; ether modifies the anesthetic and makes it easier of administration, but it subjects the patient to the dangers and disagreeable after effects of ether.

12. **Resuscitation from Drowning; Persistence of Heart Beat; Death from Nonresuscitation of the Respiratory Centres.**—Hitchings emphasizes the need of a thorough understanding of the underlying principles of resuscitation, and particularly that ultimate success depends upon preventing permanent injury from cerebral anemia. In the case reported by the writer, although ending fatally, interest is excited by the fact that the heart continued to beat for so long a time while artificial respiration was being given, and the case, moreover, illustrates the fact that efforts at resuscitation should be used for at least two hours. Failure to resuscitate this patient was due principally to irreparable damage having been done to the respiratory centres in the medulla by anemia. With the exception of the Brosch-Sylvester method, the Schäfer method of artificial respiration gives the greatest respiratory exchange for each thoracic movement. In addition to this, the tongue automatically falls forward, there is free drainage for the lungs, and long continued application can be easily made, conditions which make it the best method for use in drowning accidents.

13. **The Ability of Mothers to Nurse Their Children.**—See this JOURNAL for June 8th, page 1221.

14. **Supplemental Breast Feeding for Infants.**—See this JOURNAL for June 8th, page 1221.

MEDICAL RECORD.

November 23, 1912.

1. GRAHAM LUSK: Calorimetric Observations.
2. EDWARD M. WILLIAMS: Etat verrouillé, a Form of Senile Cortical Degeneration.
3. G. C. FRIEDMAN: Chronic Pancreatitis with Polyecythemia (Clinical Diagnosis: Pancreatic Lithiasis).
4. ROBERT LEWIS: Large Abscess of Temporo-sphenoidal Lobe, Complicating Chronic Purulent Otitis media, without Symptoms Except Occasional Marked Rise of Temperature.
5. ARTHUR C. JACKSON: Literary Genius and Manic Depressive Insanity. Alleged Case of Dean Swift.
6. GEORGE SANDERS: Bacterin Treatment in Pulmonary Tuberculosis.
7. CHARLES CLESTADORE: Milk Supply.

1. **Calorimetric Observations.**—Lusk's experiments lead to the general conclusion that the following forms of metabolism in the quiet or sleeping dog excluded from thermal influences may be observed: A basal metabolism when the cells are nourished by a blood stream which does not receive food from the intestinal tract and the composition of which is regulated by the organs of the body; a metabolism due to plethora induced by an increased blood content of carbohydrates or fat metabolites which are being absorbed from the intestine; a metabolism due to the stimulus of incoming aminoacids acting upon the cells. The latter two cannot be added to each other: there is no summation of effect when both are present, as cellular activity induced by carbohydrates is not intensified by the stimulus of aminoacids unless the latter would accomplish the result alone. The figures found for the basal metabolism of the perfectly quiet, resting organism, excluded

from thermal influences and taken eighteen hours after the ingestion of food, confirms Rubner's law of skin area, but places the heat elimination at a lower level. The basal metabolisms of two dogs of different weights and that of a dwarf, seventeen years old, agree within three per cent. In sleeping infants the basal metabolism was about one third higher and was also shown to be especially sensitive to protein ingestion (aminoacid stimulation), showing that high metabolism is characteristic of young protoplasm. In a quiet and resting animal the heat production is apparently increased by about twenty per cent. After the ingestion of a mixed diet, and this increase continues during the time of intestinal absorption; also the addition of moderate amounts of protein has little effect upon the production of heat, even though, if given alone, this protein would cause a considerable rise. The economy of a mixed dietary, physiologically considered, is beyond question.

2. **Etat vermoulu, a Form of Senile Cortical Degeneration.**—Williams calls attention to this form of degeneration of the cerebral cortex which was first described by Marie and some of his pupils, but up to the present has not appeared in any of the American or English journals. Etat vermoulu is found in senile brains, more frequently in those affected with a high degree of arteriosclerosis. It appears as somewhat irregularly shaped and sized ulcerations on the cerebral surface, with the formation in the more advanced cases of small cysts or cavities in the deeper subcortical tissue. The clinical picture is that of senile dementia of varying intensity, probably due, in part, to the frequent location of the lesions in the frontal lobes, though they are more frequently situated in the temporal region. Different symptoms are produced when other cortical areas are involved. Motor disturbances may be caused by the presence of additional subcortical lesions (small areas of softening in the internal capsules). The gross appearance is that of numerous, small, ulcerated areas on the cerebral cortex, yellow, gray, or brownish in color, with walls stained by the yellowish fluid or gelatinous contents. In shape and outline these ulcerations are irregular, with sloping walls which extend only to the junction of the white and gray matter. Adjacent convolutions may be involved or between those convolutions most seriously affected healthy areas may exist. Microscopical examination of the seemingly unaffected convolutions, however, show marked changes which would, perhaps, later become the characteristic lesion of this disease. In its early stage this condition probably could not be differentiated from cases of senile arteriosclerosis. Etat vermoulu is only a more severe and advanced form of senile arteriosclerosis.

6. **Bacterin Treatment in Pulmonary Tuberculosis.**—Sanders continues the report of a second case and adds three others in which he has used the bacterin treatment in cases of pulmonary tuberculosis, all of which have shown some good effects from the use of the combined bacterins. In some cases, if no more than an increase of appetite or a better general feeling followed, this alone would indicate the use of the remedy to encourage and cheer the patient, and thus lighten his burdens.

7. **The Milk Supply.**—Cristadoro makes an interesting comparison of bread, milk, and meat on a food value basis, the actual nutriment we get out of each that goes to nourish and energize our bodies, discarding the moisture of the loaf, the water (natural) in the milk, and the moisture and bone in the meat. A ten cent loaf of bread weighing twenty-four ounces yields one pound of food value. A pound of steak, costing twenty-five cents, yields 3.2 ounces of food value, and four quarts of milk, costing thirty-two cents, yields one pound of food value. On an actual food basis, we pay the baker ten cents a pound, the butcher \$1.25 a pound, and the milkman thirty-two cents a pound. The adult pays \$1.25 a pound for his meat, the baby only thirty-two cents for his. The writer makes a strong plea for better milk direct from dairy to user.

AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

October, 1912

1. C. E. DE M. SAJOURS: Physiology of Ductless Glands in Relation to Obstetrics.
2. H. A. HARE: Therapeutic Application of Ductless Glands.
3. C. B. REYNOLDS: Use of Fibrinolytic Extract in Obstetrics.
4. WILHELM KRUSEN: Present Status of Corpus luteum Organotherapy.
5. W. H. ALLPORT: Comparative Anatomy Illuminating Architecture and Physiology of Human Pelvis.
6. A. J. HARTZ: Ovarian Fibromyoma Undergoing Sarcomatous Degeneration.
7. W. F. B. WAKEFIELD: Continuous Fixed Laparotomy Sponge.
8. BROCKE, M. AUSEPACH: Treatment of Tubal Enlargements with Special Reference to Fyosalpinx.
9. GEORGE KAMPERMAN: Cancer of Uterus with Special Reference to Early Diagnosis.
10. A. R. ALLEN: Adhesive Plaster in Cure of Talipes equinovarus of Infants at Birth.
11. G. F. LITTLE: Diagnosis of Bone Diseases in Children.

1. **Physiology of the Ductless Glands in Their Relation to Obstetrics.**—Sajours points out the important bearing of the thyroids and parathyroids upon the matter of pregnancy, holding that they supply a secretion to the blood that can destroy poisons in that fluid. In pregnancy maternal wastes are not alone to be dealt with, but also those of the fetus. If the thyroid apparatus fails, the antitoxic process is not completed and toxic intermediate wastes, extremely irritating to the kidney, are formed, giving rise to albuminuria, edema, and other complications, and favoring the development of puerperal eclampsia. The thyroid secretion has also a beneficial action on lactation. The adrenals enlarge during pregnancy and sustain oxidation and metabolism. In the fetus local hemorrhage into this organ is not an infrequent cause of death. This change is probably due to toxic agents in the maternal blood. Consequently the judicious use of thyroid gland during parturition protects, not only the mother, but the child in utero. Concerning the pituitary body, ovaries, and Graafian follicles, the author is as yet unconvinced that they produce *bona fide* internal secretions; the organic extracts obtained do not represent internal secretions.

4. **Corpus luteum Organotherapy.**—Krusen believes that Morley's conclusions are justifiable, that the ovary possesses an internal secretion produced by the corpus luteum and that in so called ovarian insufficiency relief may be obtained with an extract of the corpus luteum.

9. **Cancer of the Uterus.**—Kamperman gives a very interesting report of cancer as it exists in Michigan, and believes that during the past five

years the death rate of this disease has increased fifteen per cent. Many important points are mentioned in the conclusions and emphasis is once more placed on the necessity of educating both the profession and the laity in order that early diagnosis be made possible.

AMERICAN JOURNAL OF UROLOGY.

June, 1912.

1. I. S. KOLL: Further Experience with Solution Aluminum Acetate in Colon Bacillus Infection of Urinary Tract.
2. W. KARO: Progress in Therapy of Gonorrhea.
3. L. W. BREMERMAN: Postoperative Treatment of Prostatectomy.
4. W. S. REYNOLDS: Autonecrosis of Chancroid.
5. K. H. AYNESWORTH: Unilateral Renal Hematuria.
6. C. P. OBERNDORF: Essentials of Freud's Theory of Psychoanalysis.
7. R. L. DICKINSON: Combination Catheter Applicator.
8. A. E. GALLANT: Ureteral Pain Associated with Sacroiliac Relaxation.

July, 1912.

9. B. TENNEY: Time for Prostatectomy.
10. WILLIAM HUTCHINSON: Hypernephroma of the Kidney of Particular Interest.
11. A. NELKEN: Essential Hematuria.
12. J. MCCARTHY: Fracture of Pelvis Complicated by Extraperitoneal Laceration of Bladder.
13. P. M. PILCHER: Iliovesical and Appendicovesical Fistula Complicated by Stone in Bladder.

August, 1912.

14. L. E. SCHMIDT and H. L. KRETSCHMER: Phenolsulphonephthalein Test in Surgery of Genitourinary Tract.
15. M. L. HELGINSFELD: Intravenous Administrations of Sublimato, Hyrgolum, Oxycyanide, and Sublimine in Salvarsan Relapses.

1. **Aluminum Acetate in Colon Bacillus Infection.**—Koll reports a series of cases of colon infection of the urinary tract treated with aluminum acetate solution. He believes this superior to any other drug in its germicidal properties upon colon bacilli. He reports forty-two patients absolutely cured.

2. **Therapy of Gonorrhea.**—Karo writes of his method of using various drugs combined with a lubricant, "catheter purin," contained in tubes which are used by the patient for home injection. The advantage of this method of treatment is mainly that the drug used remains in the urethra for a much longer time than when in solution.

5. **Renal Hematuria.**—Aynesworth cites a case with a history of renal hematuria of seventeen days' duration. Ureter catheterization showed that the blood came from the left kidney. Both kidneys were normal in function. Left nephrotomy was done, and evidence of hemorrhage in the kidney substance was seen. The kidney was removed and showed a subacute hemorrhagic glomerulotubular nephritis.

10. **Two Cases of Hypernephroma.**—Hutchinson's first case was one of secondary infection of a large renal tumor. To remove this without opening the peritoneum the following method was employed: "Following the usual loin incision, a second incision was made transversely, extending inward from the upper end of the first one. This incision passed through the skin, subcutaneous tissues, and muscles, leaving the peritoneum intact. The transversalis fascia remained, preventing displacement of the peritoneum inward. At the reflection of the peritoneum from the posterior abdominal wall on to the anterior abdominal wall this fascia was severed, the peritoneum displaced inward, and the large kidney tumor was removed." His second case led him to suppose that the kidney was the seat of a calculus, whereas at operation it was found that the

shadow was due to a calcareous deposit in a kidney tumor.

11. **Essential Hematuria.**—Nelken's general pressure, taken in groups of night sleepers, was all conclusions are that when the simpler methods of stopping the bleeding, ureteral catheterization, irrigation of the kidney pelvis with adrenalin chloride or nitrate of silver, fail, decapsulation or decapsulation and fixation of the kidney are sufficient to stop the bleeding. He believes, however, that the operation of choice in undiagnosed bleeding from the kidney is polar section preferably through Broedel's line.

13. **Vesical Fistulae.**—Pilcher tells of a patient who gave a history of an attack of appendicitis which simulated renal colic. Ten months later hemorrhage occurred with occasional attacks of bladder spasm. Later he passed bubbles of gas after the morning urination. The hematuria, pyuria, and pneumaturia occurred at various intervals. The ureters were catheterized and the kidneys found to be normal. The diagnosis of appendicitis rupturing into the bladder was made. The fistulous opening between the appendix and bladder was closed by operation.

14. **Phenolsulphonephthalein Test.**—Schmidt and Kretschmer review one hundred normal prostatic and kidney cases in which the phenolsulphonephthalein test has been used. They agree in the main with the conclusions of Rowntree and Geraghty as to its value in estimating the kidney function. In prostatic cases when the red excretion is low, they emphasize the importance of a preoperative preliminary treatment, viz., cathartics, baths, permanent catheter, or systematic catheterization and increase of fluids. In this way the kidney function becomes better, as shown by the increased red excretion, and operation is less dangerous.

Proceedings of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

Twenty-seventh Annual Meeting, Held at Atlantic City, N. J., May 14 and 15, 1912.

The President, Dr. J. GEORGE ADAMI, of Montreal, in the Chair.

President's Address.—Dr. J. GEORGE ADAMI, of Montreal, suggested that the association might take the initiative in a plan to have the Government provide a building in Washington in which various national and international societies might hold their meetings and in which their archives might be safely kept. The association might also provide a medal which could be bestowed as occasion arose upon those who in the opinion of that body had made some advance of the first order in medicine. Also, for the same object, an annual lectureship could be founded as a means of honoring those who make notable advances in science.

A Clinical Study of the Effects of Sleep and Rest on Blood Pressure.—Dr. HARLOW BROOKS and Dr. JOHN CARROLL, of New York, stated that numerous physiological researches on both man and

the lower animals had shown that there was a marked fall of blood pressure during sleep. In their experiments they had found that the night pressure, taken in groups of night sleepers, was almost invariably lower than the day pressure in the same individual, but that, conversely, in night workers and day sleepers the finding was reversed. The pressure was found to vary from 6.66 mm. to 44.8 mm., lower during sleeping than during waking hours, being slightest in those whose usual pressure was lowest. The maximum fall took place about two hours after sleep began. Attempts to secure even a temporarily lower twenty-four hour pressure by prolonging or deepening the sleep were apparently without avail; nor was the degree or persistence of the drop increased by artificial means, as, by large doses of bromide or chloral. It might be said that attempts at lowering blood pressure were perhaps as harmful as they were futile.

Dr. THEODORE C. JANEWAY, of New York, stated that fall in systolic blood pressure was not at all synonymous with fall in the mean blood pressure. The excessive fall in the high pressure cases obtained during sleep about corresponded to the fall in mean pressure and was largely due to the diminished size of the pulse wave at the periphery during the sleep. While Doctor Brooks did not feel that he had seen marked effects from rest, Doctor Janeway felt quite sure that he could produce a number of charts to show the surprising effects from simple rest. The element of mental rest was a rather important one in the sleep question.

Dr. JOSEPH MILLER, of Chicago, thought the question of mental rest was quite as important as the question of sleep. We should bear in mind that individuals with high blood pressure showed extreme variations from day to day, and, if the patient's pressure was taken over months, perhaps daily, or two or three times a week, we should be surprised to find without any apparent cause, that such an individual might show variations of pressure of 40, 60 and sometimes 100. Doctor Miller was under the impression that high pressure might at times be traced to some worry or something which we were not able to learn from the patient.

Dr. W. S. THAYER, of Baltimore, had seen a striking reduction of the blood pressure in association with simple and continued rest in bed. Several years ago a man consulted a colleague because of severe headache. There were evidences of chronic nephritis with a blood pressure of about 220 mm. Under vigorous treatment with nitrites the patient became anuric and comatose. Return of the urinary secretion and recovery from the uremia occurred in association with a rise in the blood pressure to a point between 190 and 200.

Dr. S. SOLIS COHEN, of Philadelphia, thought that in the vast majority of cases carefully studied high blood pressure, under such hospital conditions as existed in Philadelphia, was not materially affected by prolonged rest in bed. He had a group of cases of this character under observation at the present time in which that fact had been borne in upon him. Usually the decline was small, although occasionally he found a patient who showed some marked defect.

Dr. LEWIS A. CONNER, of New York, approved very emphatically the statements of Doctor Janeway and Doctor Thayer. One of the most important clinical effects that we saw was the beneficial effects in cases of chronic overextension of rest in bed.

Observations on the Effect of Various Forms of Respiration.—Dr. D. L. EDSALL, of St. Louis, said that a slow, deep breathing that was not labored might be more efficient and economical than the other forms of breathing. In studies made last winter with Benedict's respiration apparatus he and his friends assumed various types of breathing often seen clinically. In contrasting the very superficial, rapid form of breathing that one frequently saw in bad cardiac cases, pneumonia, and other conditions of that kind, with the very slow, but entirely unlabored, form of breathing, he always had a feeling himself, or in observing other people, that less had been accomplished by the very superficial type of breathing than by the very deep or normal type. He found by the record that ventilation was lowest with this type. Ventilation was always very much greater with the superficial form. When there was a struggling in respiration the tendency was to increase the filling of the chest constantly and to keep at a constant condition of partial inspiration. Thus morphine reduced effort, but it made the respiration more efficient, for respiration accomplished its function better by quieting the irritability of the respiratory centres.

The Study of Expired Air in a Case of Cyanosis without Dyspnea.—Dr. C. F. HOOVER, of Cleveland, reported the case of a man of fifty years, who had chronic bronchitis and emphysema with moderate myocardial disease. There was pronounced cyanosis without dyspnea. The cyanosis was not dependent upon any impairment of the mass movement of blood. The minute volume of expired air was eight litres a minute and poor in carbon dioxide, but relatively rich in oxygen. The alveolar air was rich in carbon dioxide and relatively poor in oxygen. Further experiments showed that in spite of an abundant tidal air, the ventilation of the pulmonary infundibula was impaired.

Organic Matter in the Expired Breath and Its Significance.—Dr. M. J. ROSENAU, of Boston, stated that he had taken condensed moisture from expired breath, taking care to filter the inspired breath so as to eliminate all protein matter of every kind. This clear watery fluid was injected into guineapigs and produced no more inconvenience than so much sterile water. After letting the guineapigs rest a few weeks and then injecting a second time with normal human blood serum, part of them reacted definitely to anaphylaxis. There was a substance in the condensed moisture from the expired breath capable of sensitizing guineapigs so that they would react to a second injection of normal human serum. In accordance with the usual interpretation this meant that this organic matter was protein, and it was specific and doubtless the same as the albuminous matter in the blood. In other experiments he exposed a number of guineapigs in a room with dogs so that the expired protein matter in the breath of dogs would be breathed in by the guineapigs. Testing these guineapigs with serum, he found that some of them responded. That

might give a clue for the way in which individuals sometimes became sensitized to horse serum. We knew that almost all these unfortunate cases showed severe symptoms after the first injection of horse serum, but we had never known how they became sensitized.

A Comparison of Physical Signs and X Ray Pictures of the Chest in Early Stages of Tuberculosis.—Dr. HENRY SEWELL and Dr. S. B. CHILDS, of Denver, stated that with our present ability to produce and interpret x ray pictures, it must be admitted that a judgment founded on clinical history combined with physical signs might lead to a strong suspicion of tuberculous infection long before any signs of actual tissue changes, except those involving the bronchial glands, appeared on the x ray negative. Nevertheless, a skiagram of the chest, preferably repeated at not infrequent intervals, was essential to the proper understanding of a patient's condition. Skiagraphic study of the chest resolved itself into two natural divisions: one pertained to the hilus regions, concerning especially the bronchial glands, with their associated peripheral lymphatic nodes, and the other included the parenchyma of the lung itself. Extreme pathological changes in the glands might be recognized with great facility, but alterations of moderate grade needed careful judgment in their interpretation. We agreed in the view that in the x ray negative of the normal chest the opaque arborizations of the "bronchial tree" were almost wholly composed of shadows cast by bloodvessels. In noninfected subjects the bronchial tree had a typical symmetry and regularity of distribution. It was very suggestive of the shadow of a leafless tree cast by the sun on an asphalt pavement. In practically all their cases of unimproved but suspected tuberculosis the skiagraphic negatives exhibited more or less extensive areas of pulmonary congestion, denoted by thicker branches and denser arborizations of the bronchial tree. In tuberculosis of the lungs, therefore, the earliest pathognomonic skiagraphic sign was the representation of comparatively isolated areas of vascular congestion which increased independently of their connections with the central root.

Dr. HENRY KOPLIK, of New York, in connection with some recent work on tuberculosis, had some x rays taken of children who had evident tuberculosis, such cases as acute miliary, resulting in tuberculous meningitis and death, with the object of seeing whether he could detect glands and infiltration at the root of the lung. Although he did get some pictures which suggested that, he did not think we were in a position to say that we could definitely mark out tuberculous glands at the root of the lung.

Dr. ISAAC ADLER, of New York, had been making routine examinations of every patient that came to the office with the fluoroscope; with every patient it was a matter of routine. Without exception, these shadows which Doctor Sewall called "vascular shadows" in the lungs of every person young or old were bronchial glands; these glands were as a rule impermeable to the x rays. They were not connected with the large bloodvessels, as was certain from their position and certain also from the fact that no one had observed any pulsation there. In early cases of tuberculosis these shadows

were usually increased on one side or the other or both, and after some experience and practice it was not difficult to distinguish between the normal hyaline shadow and abnormal hyaline shadow.

Studies in Experimental Pneumonia.—Dr. D. RIESMAN and Dr. J. A. KOLMAR, of Philadelphia, stated that pneumococcus was conceded by all to be the cause of pneumonia in man, but the *experimentum crucis*, the reproduction of the same disease in animals, had not been made. They had repeated the experiments of Lamar and Meltzer in eleven dogs and had succeeded in producing pneumonia in seven, the four failures being probably due to using a catheter with a lateral instead of a terminal opening. They were not convinced that the process induced in the animals could be called lobar. In their cases at least they had to deal with a confluent lobular bronchopneumonia. In an endeavor to obtain some light upon the crisis of pneumonia they made another series of experiments, of which they wished to make a preliminary report. They injected rabbits subcutaneously with extract of normal lung in the stage of red hepatization and extract of lung in the stage of gray hepatization. Sixteen days later the animals were injected, this time intravenously, with the same material with which they had been sensitized. Those receiving the normal lung and red hepatized lung died, in every instance of anaphylactic shock, in five or six minutes. Those receiving extract of gray lung became ill, but recovered without exception within ten minutes. Though they had speculated upon this interesting phenomenon, they had not at present any theory to offer, but hoped to continue the investigation.

Dr. A. B. WADSWORTH, of New York, stated that virulent pneumococci when studied in the test tube, and compared with many other bacterial species, were exceptionally insusceptible to both bacteriolysis and phagocytosis—the two processes by which the body rid itself of the infectious agents of disease. Virulent pneumococci in the body tissues were also insusceptible to the action of most of the immune sera with which attempts had been made to cure the infection in both man and animals. Yet recovery took place spontaneously in both animals and man. In order to determine why it was that the significance of pneumococcus immunity was so strikingly manifest in the recovery of man from lobar pneumonia, and the action of the blood sera of immunized animals on the pneumococcus so singularly inadequate in the test tube and in the treatment of infection, the following series of experimental studies were considered: Studies on the action of dead pneumococcus cultures on animal tissues; on the action of immune sera on the pneumococcus; on the action of elevated temperatures on the pneumococcus; on the action of hypertrophy on pneumococcus infection; and, finally, studies on the action of immune sera on pneumococcus infection and of the mechanism of recovery from pneumococcus infection. In general it was found that the dead pneumococcus cultures failed to incite disease processes comparable with those seen in active infection, but that an adaptive tissue reaction was incited which rendered the animal immune and gave rise to the well known agglutinative, precipi-

tative, lytic, and opsonic activities in the blood serum. From the study of the action of immune sera on the pneumococcus under ordinary conditions, it was found that the insusceptibility of the pneumococcus to bacteriolysis and phagocytosis was due to the exceptional virulence, adaptation, and growth of this organism. But in the tissues both lysis and phagocytosis took place, and the activity of the pneumococcus was therefore inhibited or neutralized in some subtle manner. The thermal limits of pneumococcus growth were found to approximate very closely temperatures often attained by the pneumonia patients, and the bactericidal action of immune sera at these temperatures was greatly exalted. These significant results were further supported by those obtained in the study of the effect of hyperthermy on pneumococcus infection, by which it was shown that although the animal organs might be injured, the activity of the infectious agents might be markedly inhibited during the hyperthermy under certain conditions, the most important of which was the presence of an active, protective mechanism in the tissues. Finally, it was found from the results of the study of the action of immune sera on pneumococcus infection that the curative action of antibacterial and antitoxic sera obtained by the immunization of animals with dead virulent pneumococcus cells and with culture filtrate free from bacterial cells was slight, whereas sera obtained from animals immunized with virulent living cultures possessed marked curative action, inducing crisis. In the mechanism of such recovery the neutralization of the products of the pneumococcus, whether toxins or endotoxines, was found to be the dominant determining factor to which the destruction of the bacteria, whether extracellular by bacteriolysis or intracellular by phagocytosis, was incident.

Dr. RUFUS I. COLE, of New York, said that it was well known that the use of this serum clinically had not been of any value and an endeavor had been made to determine upon what this depended. It had been found that one very quickly reached the point where no amount of serum injected into the animal would save him. The body must produce some additional protective substance, some complementary substance, which was necessary for the animal in addition to the serum. This was at least one of the reasons why such serum was not effective, and our efforts in the future must be stimulated toward inducing the animal to produce these additional substances.

(To be continued.)

Letters to the Editor.

COMPETENT SURGEONS.

NEW YORK, November 20, 1912.

To the Editor:

In your issue for November 23d, I read that at the Third Clinical Congress of Surgeons of North America, held in New York last week, it was recommended that every physician should be compelled to prove (in some way) that he was a competent surgeon before he was permitted to perform surgical operations.

It certainly would not do harm, but it is not as important as the gentlemen of the congress think, since, as a matter

of fact, no physician operates without having gained the experience somewhere.

I would make another suggestion, which I consider of much greater importance. I suggest that no surgeon perform an operation upon his own diagnosis exclusively, without having proved (by facts not by papers) his ability of making a correct diagnosis; otherwise he should be obliged to consult an elderly practitioner, preferably the family physician if he is experienced enough, as to the diagnosis and indication for operation. We know very well that beside the young surgeons, there are also among those who have been operating for a number of years and have succeeded in establishing their reputations as good surgeons, a great many who are not very particular as to a correct diagnosis. For illustration, I shall cite here some cases of my own experience: Mrs. R., who, with an interval of one year, had a second severe attack of appendicitis, had been advised by me to undergo an operation. A surgeon (or, as the people usually call every specialist, a "professor") was summoned, who, after examining the patient carefully, said to me he was sorry he could not agree with me in the diagnosis, insisting that it was a case of cholelithiasis and he operated on her for this. But he soon saw his mistake and after lengthening the incision and reaching the appendix he admitted that I was right.

Another case: Some years ago I was called (5 a. m.) to see a man, twenty-four years old, who took sick all of sudden. I found he had acute appendicitis; pulse, 104; temperature, 102.5° F. I ordered the treatment (initial enema, absolute rest, abstinence from food, ice bag, and opium) and promised to see him again in the afternoon. About 2 p. m. I was called in a hurry. When I came in, the father told me nothing was the matter, but the neighbors had insisted that he should call in a "professor" (a surgeon), who was then in the front room with his assistant (?). The professor, after shaking hands, asked me how I found my patient. I reexamined him. There was only slight pain on pressure, no tenderness; pulse, 88; temperature, 100° F., and I said the patient was doing very well for the reasons just mentioned, better than I expected, in fact. The professor then rose from his chair, straightened himself to his full height, and said: "Don't you think the patient *must* be operated on *at once*, that he has no pain because the appendix has perforated already, and the pus is in the abdominal cavity and if he is not operated on *at once*, he will die within six hours?" I said: "No, I do not think so; if this is the case the patient would be in a condition of shock; but his pulse and temperature are as nearly normal as mine and yours. What may happen in six hours I certainly cannot guarantee not only to the patient, but also to you and me. The young man went to bed at one a. m. as a healthy man and at 4 a. m. he was seriously sick. When a change like this occurs in an apparently healthy man within three hours, who can guarantee what will happen to a sick man within six hours? But we have to judge according to symptoms, which I have found so favorable to the prognosis that I could not expect better under the circumstances. Concerning an operation I am not against it, if the patient is willing." "If you think so," said the surgeon, "I have nothing to do here any more," and after getting his fee, \$15, and \$5 for the assistant, they left. The course of the disease showed, as I expected, that he was wrong.

I could cite more cases from my own practice and probably many other elderly practitioners have had the same experience; but I think this is enough to call the attention to the advisability of most surgeons consulting an experienced general practitioner as to diagnosis and indications before they decide to perform an operation.

H. RABINOWITZ, M. D.

INFANT FEEDING.

NEW YORK, November 20, 1912.

To the Editor:

I have read the interesting article on Infant Feeding by Dr. Louis Fischer which appeared in your *JOURNAL* for November 16th. I wish to make a comment on his milk formulas. He advises the use of maltose as a substitute for granulated sugar. He evidently forgets that the retail price of maltose is fifty-five cents an ounce, and as we are obliged to use a little over an ounce and a half per diem for the preparation of food, the daily cost of an infant's

food will amount to about one dollar. This price is certainly not within the reach of every family.

There are at least two proprietary maltose preparations on the market, much cheaper than plain maltose, and more assimilable than cane or milk sugar.

A. HYMANSON, M. D.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

A Practical Textbook of the Diseases of Women. By ARTHUR H. N. LEWERS, M. D. Lond., F. R. C. P. Lond., Senior Obstetric Physician to the London Hospital, Examiner in Midwifery and Diseases of Women at the Conjoint Board of the Royal College of Physicians of London, etc. Seventh Edition. With 258 Illustrations, Thirteen Colored Plates, Five Plates in Black and White, and a Large Number of Illustrative Cases. New York: Paul B. Hoeber, 1912. Pp. xi-540. (Price, \$4.)

This is the seventh edition of a well prepared practical work by an author whose experience qualifies him to give the best pertaining to the subject of diseases of women. While the book has been slightly increased in size over the previous editions, and an exhaustive review of the subject has been given, unimportant details are in condensed form and the more important subjects, e. g., fibroid tumors and cancer of the uterus, have been amplified, making the book valuable for reference and as a textbook.

The introductory chapter places emphasis on the importance of methods of examination for diagnostic purposes, also of work on the cadaver before operating on the living subject.

The book contains 529 pages, beginning with "the mode of investigating a case," followed by all of the pathological conditions peculiar to women. In the section on cancer of the uterus, the author gives a detailed description of Wertheim's hysterectomy. The closing chapters are on the systemic treatment of nerve prostration and hysteria, the Weir Mitchell treatment, and coccygodynia. The work is neatly indexed and very well illustrated.

Cerebellar Functions. By Dr. ANDRÉ THOMAS, ancien interne des Hôpitaux de Paris. Translated by W. CONYERS HERRING, M. D., of New York. With Eighty-nine Figures in the Text. New York: Journal of Nervous and Mental Disease Publishing Company, 1912. Pp. iii-223. (Price, \$3.) (Journal of Nervous and Mental Disease Monograph Series No. 12.)

The appearance of this translation is most gratifying to English readers, presenting as it does a thorough and discriminating résumé of modern knowledge concerning the cerebellum. The book is divided into two parts, the first dealing with anatomy and the results obtained from experimentation, the second with interpretations. The subject is presented in a clear and concise manner and the many illustrations are excellent; in a word, this volume is up to the usual standard of the Monograph Series.

Manisch-depressives und periodisches Irresein als Erscheinungsform der Katatonie. Eine Monographie von Dr. med. MAURYCY URSTEIN, Warschau. Berlin und Wien: Urban & Schwarzenberg, 1912. Pp. vi-650. (Price, \$7.50.) (Through Rebmman Company, New York.)

This work is, as the author states, essentially a continuation of his previous work, *Dementia Præcox*, published in 1909, and is based upon an enormous amount of material studied to the last detail. Some of the patients have been under close observation in institutions for as long as fifty years. Thirty selected cases are fully reported, over 500 pages of the text being devoted to their consideration. Many important and interesting facts are presented, especially the proof that it is not uncommon for patients to pass through repeated attacks of manic depressive or circular types of insanity before finally developing the usual signs of catatonia. This has an important bearing upon

our conceptions of the classification as well as of the clinical course and prognosis of manic depressive insanity and dementia præcox. The author feels that complete recovery is much more common than is generally conceded, and gives forty-eight per cent. as the proportion of recoveries after the first attack of catatonia, eleven per cent after the second attack, and only one per cent. after three or more attacks. Remissions are, as we know, much more frequent. But recovery is not necessarily permanent, and the free interval may be interrupted by another attack at any time during the life of the patient as exemplified by one case which relapsed after thirty years of mental soundness. The considerations of symptomatology, prognosis, and diagnosis contain many valuable observations, and the entire book impresses the reader as being a most careful and able elaboration of an enormous amount of important clinical material.

Diagnose der Simulation nervöser Symptome. Ein Lehrbuch für den Praktiker. Von Priv.-Doz. Dr. SIEGMUND ERBEN, Wien. Mit 24 Textabbildungen und 3 Tafeln. Berlin und Wien: Urban & Schwarzenberg, 1912. (Through Rebmman Company, New York.) Pp. xii-194. (Price, \$2.15.)

To aid in the diagnosis of nervous and mental disease when the question of simulation is present Erben has contributed the present volume. The subject deals with symptoms rather than with diseases; and the many tests and methods of examination for the differentiation of organic and functional conditions from simulations are prominent features throughout the book. Although on the whole the material presented is based upon current textbook opinion, many of the author's personal observations and tests are published here for the first time.

Motive Force and Motivation Tracks. A Research in Will Psychology. By E. BOYD BARRETT, S. J., Doctor of Philosophy, Superior Institute, Louvain. London, New York, Bombay, and Calcutta: Longmans, Green, & Co., 1911. Pp. xiv-225. (Price, \$2.50.)

As the author states, this work is strictly empirical and experimental with the object in view of analyzing and classifying volitional phenomena. The divergence of the various modern theories of the will testify to the unsatisfactory state of will psychology. What has been particularly lacking in studying the will is a definite method of experimentation, and the work represented in this volume has been directed mainly along this line. The method employed is, in general, that of the Würzburg School, viz., the introspective method. A large series of experiments are recorded and analyzed, in which trained psychologists were the subjects. The results obtained are very valuable, and the book will well repay the reading by those interested in will psychology.

The Treatment of Diseases of the Skin. By W. KNOWSLEY SIBLEY, M. A., M. D., B. C., M. R. C. P., M. R. C. S., Physician to St John's Hospital for Diseases of the Skin, London. New York: Longmans, Green & Co.; London: Edward Arnold, 1912. Pp. vii-280.

This is an elementary treatise on dermatology written from the standpoint of the physical and mechanotherapeutist, as is shown by the first section, occupying one sixth of the entire volume, entitled Methods of Treatment, and devoted to the consideration of x rays, electrolysis, ionic medication, high frequency currents, carbon dioxide, vaccines, hyperemia, and diet. Drug medication is relegated to a small section at the end. Some of these methods, such as electrolysis, hyperemia, and the use of solid carbon dioxide, have definite though limited fields of applicability in dermatotherapeutics; but the x ray and high frequency currents, in spite of all that has been and is being written on the subject, are regarded as practically useless agents by most dermatologists, and vaccines are still absolutely *sub judice* as to therapeutic value. To base a system of treatment upon these subsidiary or doubtful methods, and to relegate local medicinal treatment to the second place, is to run counter to accepted modern dermatotherapeutic knowledge. Exception must be taken also to some of the illustrations, as in Plate I; this is a "before and after" picture of a patient whose face was pitted with the old scars of a smallpox and was treated with hyperemia, ionization, electrolysis, x rays, fibrolysin, etc.; the

"before" picture is in fairly sharp focus, and shows the scars plainly; the "after" picture is entirely out of focus, and naturally shows a smooth face. This seems to be hardly a fair use of the camera as evidence of therapeutic results.

Trépanation néolithique, trépanation pré-Colombienne, trépanation des Kobyles, trépanation traditionnelle. Les Origines de la trépanation décompressive. Par le Dr. LUCAS-CHAMPIONNIÈRE, membre de l'Institut (Académie des Sciences), chirurgien honoraire de l'Hôtel Dieu, ancien président de la Société internationale de chirurgie. Avec 32 figures. Paris: G. Steinheil, 1912. Pp. 131.

This is an interesting account of prehistoric attempts at trephining and other surgical operations on the skull, which must henceforth be indispensable to the medical historian. The author insists that examination of early methods of surgery is most valuable to the modern operator and fruitful in suggestion to the thoughtful surgeon. Numerous photographs of skulls upon which early surgeons tried their hands, and which have been buried for untold centuries, are presented in the course of the work, and seem to show an amazing dexterity on the part of our surgical predecessors, especially in view of the crude nature of their instruments. No cranial surgeon should be without this history which is presented, according to the admirable Continental plan, in paper covers so as to be within reach of the thin purse of the young practitioner, while his older colleague may bind it to match his library.

Hypnosis and Suggestion. Their Nature, Action, Importance, and Position amongst Therapeutic Agents. By W. HILGER, M.D., of Magdeburg. Translated by R. W. FELKIN, M.D., F.R.S.E. With an Introduction by Dr. VAN RENTERGHEIM, Amsterdam. Translated by A. NEWBOLD. New York: Rebman Company, 1912. Pp. vii-233. (Price, \$2.50.)

This work will be found by those interested in the possibilities of hypnotism, to be a very complete treatise, going into detail regarding the methods of inducing the hypnotic sleep and pointing out where it can be used to advantage. The tactful use of suggestion in the waking state is also taken up, and it is shown how the preconceptions of children, concerning food articles for example, can be dissipated in this way. There are acute discussions of the reflexes, of motive power and will, of appetite and disgust, of self confidence, etc. The treatment of alcoholism occupies considerable space and, it is fair to say, that all conditions in which hypnotism is likely to be valuable, receive full consideration. The translation is accurate rather than elegant, many of the German constructions being preserved to the detriment of clarity and ease of reading, but in a scientific book perhaps it is proper that accuracy should be the prime consideration. This is a good book and one untinged with quackery.

BOOK AND MAGAZINE NOTES.

Of the making of small manuals of medicine there seems to be no end. They are all useful, especially to a man who has familiarized himself with either a larger work, or better, with the clinical signs of disease, and has observed personally the results of treatment. The British point of view, interesting for many reasons to the American student, may be obtained from the *Manual of Medicine*, by A. S. Woodward, M.D., M.R.C.P. (Edinburgh, Glasgow, and London: Henry Frowde and Hodder & Stoughton, 1912), which is offered specially to supply a *vade mecum* for the student clerking in the wards or out patient department, also as a convenient reference for the busy practitioner.

Sir William Osler's lay sermon to the students of Edinburgh University in connection with the meeting of the National Association for the Prevention of Tuberculosis, entitled *Man's Redemption of Man*, comes to us in neat, pocket form (New York: Paul B. Hoeber, 1912; 50 cents). This is the address in which Sir William offered to meet in the arena, so to speak, a picked band of antivaccinationists; and the one in which he advised his hearers to add to their appreciation of the gospel careful study of the

wonderful work of the ancient Greeks. This edition makes the distinguished author speak of "preventative" medicine (p. 46), which he never did, obviously. After an eloquent tribute to what had been accomplished by the physician in the face of ignorance and superstition, the sermon closed with Shelley's beautiful salute to the apotheosis of science, beginning "Happiness and Science dawn though late upon the earth."

Meetings of Local Medical Societies.

MONDAY, December 9th.—New York Ophthalmological Society; Society of Medical Jurisprudence, New York; Williamsburg Medical Society, Brooklyn; New Rochelle Medical Society; Corning Medical Association; Waterbury, Conn., Medical Association.

TUESDAY, December 10th.—New York Academy of Medicine (Section in Neurology and Psychiatry); New York Obstetrical Society; Medical Society of the County of Schenectady; Medical Society of the County of Rensselaer; Buffalo Academy of Medicine (Section in Medicine); Rome Medical Society; Practitioners' Club of Jersey City, N. J.

WEDNESDAY, December 11th.—New York Pathological Society; New York Surgical Society; Medical Society of the Borough of the Bronx; Alumni Association of the City Hospital, New York (annual); Brooklyn Medical and Pharmaceutical Association; Alumni Association of the Norwegian Hospital, Brooklyn; Medical Society of Richmond County, N. Y.; Dunkirk and Fredonia Medical Society (annual).

THURSDAY, December 12th.—New York Academy of Medicine (Section in Pediatrics); West Side Clinical Society, New York; Brooklyn Pathological Society; Blackwell Medical Society of Rochester, N. Y.; Jenkins Medical Association, Yonkers, N. Y.; Society of Sanitary and Moral Prophylaxis, New York; Auburn City Medical Society; Buffalo Ophthalmological Club; Jamestown Medical Society; Society of Physicians of the Village of Canandaigua; Gloversville and Johnstown Medical and Surgical Association; Physicians' Club of Middletown, N. Y.

FRIDAY, December 13th.—New York Academy of Medicine (Section in Otolaryngology); New York Society of Dermatology and Genitourinary Surgery; Eastern Medical Society of the City of New York (annual); Society of Ex-Internes of the German Hospital, Brooklyn; Society of Clinical Serology, New York; Society of Alumni of St. Luke's Hospital.

SATURDAY, December 14th.—West End Medical Society (annual); New York Medical and Surgical Society; Harvard Medical Society; Lenox Medical and Surgical Society.

Official News.

Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending November 27, 1912:

Clark, T., Surgeon. Directed to visit, in addition to places named in bureau order of September 13, 1912, all such places in Michigan as may be necessary for the investigation of contagious and infectious diseases among the Indians. McLaughlin, A. J., Passed Assistant Surgeon. Directed to proceed to Milwaukee, Wis., to attend a conference of the Lake Michigan Sanitary Association, November 25, 1912. Pierce, Claude C., Passed Assistant Surgeon. Directed to report to Surgeon J. C. Perry at Ancon, Canal Zone, by whom questions, prepared by the board convened to meet at the bureau by order dated November 21, 1912, will be submitted, to determine his fitness for promotion to the grade of surgeon. Warren, B. S., Passed Assistant Surgeon. Detailed to represent the service at the Sec-

and National Conference on Housing in America, to be held in Philadelphia. **Wertenbaker**, C. P., Surgeon. Directed to return to station via Richmond, Va., for conference with railroad authorities relative to car sanitation. **Whillans**, H. A., Acting Assistant Surgeon. Granted six months' leave of absence, without pay, from December 18, 1912. **White**, Mark J., Surgeon. Directed to inspect, in addition to places named in bureau order of September 13, 1912, the Sac and Fox Indian reservations and schools at Toledo and Tama, Iowa, en route to station at Detroit, Mich. **Williams**, L. L., Surgeon. Granted three months and twenty-three days' leave of absence, with pay, from November 21, 1912, and three months' leave of absence, without pay, from March 16, 1912.

Boards Convened.

Board of commissioned medical officers convened to meet at the bureau, Tuesday, December 10, 1912, for the examination of Passed Assistant Surgeons Joseph Goldberger, Charles W. Vogel, Joseph W. Scherschewsky, Clarence W. Wille, Robert L. Wilson, Allan J. McLaughlin, Edward Francis, John T. Burkhalter, and Benjamin S. Warren to determine their fitness for promotion to the grade of surgeon. Detail for the board: Assistant Surgeon General W. J. Pettus, chairman; Surgeon Hugh S. Cumming, member; Surgeon L. L. Lumsden, recorder.

Board of commissioned medical officers convened to meet at the United States Marine Hospital, San Francisco, Cal., Tuesday, December 10, 1912, for the examination of Passed Assistant Surgeons Donald H. Currie, John M. Holt, Mervin W. Glover, Bavis H. Earle, John D. Long, and Bolivar J. Lloyd to determine their fitness for promotion to the grade of surgeon. Detail for the board: Surgeon Rell M. Woodward, chairman; Passed Assistant Surgeon Harvey G. Ebert, recorder.

Board of commissioned medical officers convened to meet at the United States Marine Hospital, New Orleans, La., Tuesday, December 10, 1912, for the examination of Passed Assistant Surgeons Gustave M. Corput, Louis P. H. Bahrenburg, and John S. Boggess to determine their fitness for promotion to the grade of surgeon. Detail for the board: Surgeon J. H. White, chairman; Passed Assistant Surgeon A. D. Foster, recorder.

Board of commissioned medical officers convened to meet at the Immigration Station, Ellis Island, N. Y., Tuesday, December 10, 1912, for the examination of Passed Assistant Surgeons Carl Ramus, Dunlop Moore, William A. Korn, and Matthew K. Gwyn to determine their fitness for promotion to the grade of surgeon. Detail for the board: Senior Surgeon George W. Stoner, chairman; Surgeon E. K. Sprague, recorder.

Board of commissioned medical officers convened to meet at Manila, P. I., upon the call of the chairman for the examination of Passed Assistant Surgeon Carroll Fox to determine his fitness for promotion to the grade of surgeon. Detail for the board: Passed Assistant Surgeon Victor G. Heiser, chairman; Passed Assistant Surgeon Robert Olesen, recorder.

Board of medical officers convened to meet at Honolulu, Hawaii, Tuesday, December 10, 1912, for the examination of Passed Assistant Surgeons Frederick E. Trotter and George W. McCoy to determine their fitness for promotion to the grade of surgeon. Detail for the board: Passed Assistant Surgeon Edward R. Marshall, chairman; Acting Assistant Surgeon W. F. James, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending November 30, 1912:

Darnall, Moses H., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Hunt, Va., February 1, 1913; relieved from active duty in the Medical Reserve Corps, to take effect upon expiration of leave of absence granted him to include March 21, 1913. **Fanteroy**, P. C., Major, Medical Corps. Left the office of the Surgeon General, Washington, D. C., on November 24th, en route to Vienna, Austria, on detached duty. **Fisk**, Owen C., First Lieutenant, Medical Corps. Will proceed to his home preparatory to his retirement from active service; granted leave of absence to February 1, 1913. **Kilbourne**, Edwin D., Captain, Medical Corps. Granted leave of absence for one

month. **Lagarde**, Louis A., Colonel, Medical Corps. Detailed a member of the Army Retiring Board. **Winter**, Francis A., Lieutenant Colonel, Medical Corps. Will report at the Army Medical School, Washington, D. C., for duty as instructor in military hygiene.

Navy Intelligence:

Official list of changes in the Medical Corps of the United States Navy for the week ending November 30, 1912:

Barber, G. H., Medical Inspector. Detached from the Marine Recruiting Station, Boston, Mass., and ordered to command the Naval Hospital, Las Animas, Colo. **Leach**, Philip, Medical Director. Commissioned a medical director from July 29, 1912; detached from the Naval Hospital, Las Animas, Colo., and ordered home to await orders.

Births, Marriages, and Deaths.

Married.

Becker—Kroder.—In New York, on Wednesday, November 27th, Dr. Henry Clinton Becker and Miss Johanna Augusta Kroder. **Fischer—Sloman.**—In Pittsburgh, Pa., on Thursday, November 28th, Dr. Nathaniel Arthur Fischer and Miss Lorraine Lucille Sloman. **Frein—Poirot.**—In Belleville, Mo., on Wednesday, November 20th, Dr. Harry Joseph Frein, of Centralia, and Miss Susan C. Poirot. **Henry—Scott.**—In Baltimore, Md., on Wednesday, November 20th, Dr. Zadok P. Henry, of Berlin, and Miss Indiana Scott. **McGoldrick—Connell.**—In Brooklyn, N. Y., on Wednesday, November 27th, Dr. Thomas A. McGoldrick and Miss Rita Connell. **Pelle—Wilson.**—In Shortsville, N. Y., on Saturday, November 23d, Dr. Harry L. Pelle, of Louisville, Ky., and Miss Clara E. Wilson. **Wilde—Griffiths.**—In Vicksburg, Miss., on Wednesday, November 6th, Lieutenant Adna G. Wilde, Medical Corps, United States Army, and Miss Sallie Griffiths. **Woods—Brown.**—In Great Neck, L. I., on Thursday, November 28th, Dr. Charles Edwin Woods, of Indianapolis, Ind., and Miss Agnes Cecile Brown.

Died.

Boggan.—In Mooresville, Miss., on Wednesday, November 20th, Dr. T. A. Boggan, of Tupelo. **Bowker.**—In Charlemont, Mass., on Friday, November 15th, Dr. Samuel Dawes Bowker, aged forty-nine years. **Cleveland.**—In Philadelphia, on Saturday, November 23d, Dr. Samuel M. Cleveland, aged seventy-five years. **Curtis.**—In New York, on Thursday, November 28th, Dr. Edward Curtis, aged seventy-five years. **Dornisife.**—In Tunkhannock, Pa., on Wednesday, November 20th, Dr. Ulysses Edward Dornisife, aged forty-four years. **Duval.**—In Rochester, N. H., on Saturday, November 23d, Dr. Ernest Duval, aged fifty-two years. **Eskildson.**—In Danville, Va., on Friday, November 22d, Dr. Robert Emmet Eskildson, of Omaha, Neb., aged sixty-eight years. **Hawkins.**—In Mount Holly, Ark., on Wednesday, November 20th, Dr. John T. Hawkins, aged fifty-seven years. **Hume.**—In Petoskey, Mich., on Friday, November 22d, Dr. Charles H. Hume, of Corunna, aged sixty-three years. **Keller.**—In Jamaica Plain, Mass., on Thursday, November 28th, Dr. Elizabeth C. Keller, aged seventy-five years. **Knight.**—In Waycross, Ga., on Monday, November 18th, Dr. Jaquelin E. Knight. **McGill.**—In Jersey City, N. J., on Thursday, November 28th, Dr. John Dale McGill, aged sixty-five years. **McLane.**—In New York, on Monday, November 25th, Dr. James Woods McLane, aged seventy-three years. **MacOdum.**—In Cambridge, Mass., on Saturday, November 30th, Dr. Angus MacOdum, aged forty-seven years. **Mead.**—In Buffalo, N. Y., on Wednesday, November 20th, Dr. Eva Viola Mead. **Philpott.**—In Des Moines, Iowa, on Saturday, November 23d, Dr. Charles H. Philpott, aged fifty-two years. **Thompson.**—In Landenberg, Pa., on Saturday, November 23d, Dr. Benjamin Thompson, aged eighty-five years. **Van Cleve.**—In Minneapolis, Minn., on Tuesday, November 10th, Dr. Samuel H. Van Cleve, aged fifty-eight years. **Ward.**—In New York, on Saturday, November 30th, Dr. Edwin F. Ward, aged seventy-six years.

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THE PREVENTION OF EPILEPSY.*

BY L. PIERCE CLARK, M. D.,
New York.

If it be admitted, as some contend, that twenty per cent. of epileptics have actually no bad ancestry (Gowers), no bad intrauterine or intra partum history, or suffer infantile insults—in other words, absolutely nothing to explain the occurrence of their disease, then obviously the influence of various heredity factors upon the procreation of epileptics must be essentially fallacious. The same argument holds true for idiocy and feeble mindedness. If in a perfectly sound child, as far as one may judge, epilepsy or idiocy develops without cause, then there can be no justification for the bold statement that some other child is epileptic or idiotic solely because his ancestry was bad, tuberculous, alcoholic, or the like. In some of the careful English statistics there are more epileptics of sound stock than of alcoholic. One might argue therefrom that ancestral alcoholism gave some immunity, which, obviously, the contention thus narrowed, would be absurd.

The appearance of epilepsy in a family previously sound may be interpreted itself as a phenomenon of degeneracy, thus furnishing an illustration of the old doctrine that it is natural and unavoidable for a given stock to degenerate spontaneously. A society for the study of genealogy, heredity, and regeneration, recently organized in Germany, has announced that prosperity, mere improvement in material welfare, is alone sufficient to cause degeneracy. It is, therefore, possible that certain factors commonly regarded as causes of degeneracy are really effects of the latter. The effects then figure as further causes, and vicious circles result. From this point of view epilepsy is greatly increased by civilization, which would make it very difficult, however imperative the need, to eradicate it by eugenics. Thus determinists would conclude epilepsy, and like disorders are invariably by products of civilization.

Degeneracy must be understood in full to bring it in relationship with epilepsy. Its most common manifestations are expressed in low vitality (as seen in still births, congenital debility, inability of mothers to nurse, high infant mortality, falling birth rate, tuberculosis in early life), psychopathy, defective development in all phases, general inferiority, abnormal sexuality, criminal and other antisocial

tendencies, pauperism, weak mindedness, "genius," etc. In associating epilepsy here, one factor stands out prominently. The epileptic, like some other neuropaths, has in some respects great organic vigor, tenacity of life, etc. The idiopathic epileptic of sound stock, sound body, etc., represents a very high class degenerate. The only part in him to suffer is the part which develops last—the cortex. From this type, as we descend in the scale, we find an increasing participation of the anatomical substratum until gross defects like microcephalus appear. If these surmises are correct, idiopathic epilepsy in the sound would represent primary and practically nonpreventable degeneracy.

Convulsive phenomena, referable to the cortex, cannot be isolated from other cortical phenomena. Whenever various cell elements are aggregated for the performance of various functions, disease of the structure is bound to follow several types. This is seen in skin pathology. If individuals apparently similar have the same kind of skin disease—simple eczema or dermatitis—one subject will show unusual activity of the pigment cells, another of the horny cells, etc. The first one will be left with a deep stain, while the second will show thickening of the horny layer, desquamation, etc. These differences are fundamental and equally apparent in the cortex. Recently a typical case of epilepsy developed in a sound subject from an electric shock sufficient to kill. The man became a serial epileptic at once, with day and night attacks and mental failure. Traumatic psychoneurosis and ordinary hysteria could be excluded. The case is believed to be the first on record. The usual result of such an electric shock is death, or unconsciousness followed at times by symptoms conformable to traumatic psychoneurosis. Just why a cortical insult produces epilepsy in one and not in others is unknowable. The practical deduction is, that there is no logic in studying how to prevent epilepsy alone. But just what other conditions should be grouped with it is difficult to state. For the idiopathic type, probably hysteria, psychasthenia, anomalies of character and personality, criminal and sexual degeneracy, and the insane in general should be included. A mass study of all this material will doubtless bring many more prophylactic indications to light than a study of any one subject. No doubt such an inclusive study would show abundant evidence of primary degeneracy due to civilization.

A group of special interest from the viewpoint of prevention is the potential or latent epileptic of sound stock. His stock, however, is about due to degenerate from natural causes. He may receive

*Read before Fifteenth International Congress of Hygiene and Demography, Washington, September 27, 1912.

a severe blow on the head, or go through a severe febrile disease involving the cortex. He may become an epileptic, may simply show arrested mental development, or may begin to show criminal or other degenerate tendencies. He is the familiar "black sheep" for a time, until others of the stock go wrong. It is, of course, a common thing for a black sheep's parents to charge his trouble to a blow on the head or a fever, and this explanation would be just in certain cases. Practically there is no way of specially preventing blows, falls, and fevers, so here, again, we are up against the impossible.

In this connection it is impossible to state whether fright or affects alone can precipitate true epilepsy, since many believe one may isolate "affect epilepsy" from the true form. This affect epilepsy is, however, very rare. It is believed to occur only in degenerates. Other authorities do not regard all the convulsions of idiots as true epilepsy. They maintain that the idiot has an infant's brain, which must be predisposed to eclampsia from reflex causes, as such infants often are.

That epileptics beget epileptics and all types of degenerates has been so well known since Echeverrias's time, that it requires no further demonstration. It is exactly what we should expect. The cortical convulsive anomaly would naturally be handed down with special frequency, because it is based on some structural peculiarity. Prophylactic data of the greatest significance come into play here. Epileptics must not marry. Especially they must not intermarry with epileptic or other degenerates. On rare occasions certain epileptics may be allowed to marry sound mates if they agree to lead perfectly regular lives and if their children are brought up along certain strict lines. These exceptional cases may be open to criticism. Segregation in colonies naturally prevents procreation. Whether epileptics should be vasectomized, etc., must be decided in future.

One third of all idiopathic epileptics have an organic substratum, i. e., a gross anatomical alteration. This probably does not include any so called focal cases, although it would take in "idiopathic" cases associated with focal lesions. In this one third we should expect to find mental defects, so that to prevent epilepsy in such cases would mean nothing. Prevention would apply to the causes of the anatomical alterations, which in some cases are very evident, even if not preventible. Among them would be the effects of birth traumatism which are preventible in part. The whole trend of modern obstetrics is toward the prevention of these accidents, and no doubt the management of obstetrics in the great medical centres prevents many cases of this sort, for every effort is made to secure the birth of an intact child. The vast majority of women throughout the world must be delivered by men of limited obstetric attainments and midwives. When the practice of obstetrics is carried on only by properly trained medical men there should be a distinct reduction in the number of these cases.

"Prevention of epilepsy" finds an attractive field in maternal impressions scientifically interpreted, and in procreation under vicious circumstances. Maternal impressions should be operative only in the embryonal period of the fetus, say the first six or eight

weeks of intrauterine life, and few are alleged to occur at this period. In fact the woman may not know herself to be pregnant. We understand that if anything serious befalls the embryo or young fetus it is much more likely to die outright and cause abortion than to sustain a radical arrest of development and live. Abortion itself is included among the common expressions of degeneracy. The tendency to-day is to explain most fetal anomalies, even those of apparent arrested development, by amniotic adhesions. The latter are not very well understood, but it seems just for the present to class them also with evidences of degeneracy. The fact that the cortex develops very late in intrauterine life and only in an imperfect degree would naturally suggest the possibility of accidents late in gestations. But not only is there commonly no history or evidence of such, but the inability to develop could be traced to an inherent insufficiency of the germ plasm. It is only recently that we have comprehended the great rôle of the ductless glands on growth and development. It is indeed possible that errors in this field are dependent immediately on anomalous development of the thyroid, thymus, pancreas, hypophysis, etc.

A special type of maternal influence is seen when the mother has a severe toxemia or cachexia. One with typhoid or advanced tuberculosis will give birth to a small, puny, sickly child, possibly short lived. But it is very doubtful if these children can be regarded as degenerates, or that they have any special predisposition to epilepsy or idiocy. The germ plasm is not affected, or, as Forel would say, the children are not necessarily blastophthoric. It is maintained that women in advanced tuberculosis sometimes bear large, healthy, well nourished children, but this could hardly occur with typhoid fever or any other acute febrile process. Much maternal invalidism seems to be without any influence on epilepsy in the child, or on degeneracy in general.

Procreation when either parent is alcoholized, whether this is acute or chronic, affords a good example of transient blastophthoria in which the germ plasm is temporarily damaged. The condition is the very antithesis of degenerative blastophthoria, yet the result might be the same procreation.

This subject may be followed up case by case, or by the statistical method of Bezzola, who found among a presumably healthy people there were documents that more tainted subjects were procreated during periods of celebration and merrymaking than at the opposite periods. Bezzola worked out his method for idiocy only, and Klöpfel for microcephalus. More recently Müller applied it to epilepsy, and found that many more epileptics than idiots appear to answer this requirement. In the author's material it is expressly stated that alcoholism in the ascendants was four times as common as epilepsy. This is very different from the material of some countries. In England, presumably not a sabbath country, only eight per cent. of epileptics have alcoholic ancestors. In Switzerland (some places) epileptics and idiots are called *Rauschkinder* (jag children).

Blastophthoria appears to be a purely hypothetical entity. When a generation is skipped, as when a normal mother, daughter of an alcoholic, gives birth

to a degenerate, we have to assume that blighted germ plasma can pass through a sound parent. If this is true, we can never be certain that a degenerate inherits directly from a degenerate parent, for both may be covictims and may have received the same blighted germ plasma from some one higher up. When the blastophthoric doctrine is contrasted with the "spontaneous" theory of degeneracy, the latter seems to show up much stronger. From the Mendelian viewpoint, the appearance of degenerates in a sound stock would resemble the appearance of new species. When sound and tainted individuals intermarry, the progeny should comprise both sound and tainted individuals. If the germ plasma or fountain source is tainted, how can there be any sound individuals? In the 1,200 Jukes there was a very large per cent. of healthy, normal subjects, good citizens. Eugenists would thus cut off good and bad alike, and hence nominally should believe in blastophthoria.

The statement is sometimes made—dogmatically as far as I know, but doubtless founded on statistics—that blood slightly tainted purifies itself in succeeding generations. Hence if a person in any way inferior marries into a sound stock, the taint if present at all in the progeny soon disappears. In such a sound stock, natural degeneracy would be remote. But if the stock were about to degenerate, intermarriage with the tainted would precipitate it. This point would have to be taken into account in breeding. There should be tests for sound stock far removed from degeneracy—normal fertility, ability to suckle, normal vigor, freedom from abortions, menstrual irregularities, etc., and a host of other requirements. If a man with a slight ancestral taint should marry, it should be in such primitive stock. Degeneracy can hardly supervene all at once in a family. One generation ought to show a slight inferiority over its predecessor such as could be readily demonstrated by applying standards. In human breeding approaching deterioration has always been recognized, and attempts have been made to neutralize it by outside alliances.

It has been stated that ten per cent. of idiopathic epileptics undergo no mental deterioration from first to last. These must therefore differ radically from the ninety per cent. who undergo mental failure. The latter test is used to differentiate epilepsy from hysteria, which of itself seems to indicate that such "benign" epilepsy must not be identical with the malignant form. Recoveries from epilepsy should belong to the benign type, but this need not follow, for cures could be effected, perhaps, before deterioration sets in. No special data in regard to causation and prophylaxis have been found for benign epilepsy. Grubbe terms this form of epilepsy "degenerative," the reason being obscure. He must mean that it is *prima facie* evidence of simple degeneracy.

According to Alzheimer, it is in epilepsy in those of sound stock that we are most likely to find constant lesions—sclerosis of the cornu of Ammon and marginal gliosis. This naturally suggests a special type of disease—a constant effect produced by the action of a single cause on a locality of least resistance. The single cause would have to be a bacterium or a toxine, with the chances much in favor of the latter. The toxine would be endogenous, obvi-

ously, and could be explained by intestinal autointoxication, errors of metabolism, or disorders of the ductless glands. But if such a toxine could cause cortical lesions in the healthy it should do so all the more readily in neuropathic subjects, syphilitics, the tuberculous, etc. These factors may therefore end by becoming mere accessories. The histological finds of Alzheimer are naturally not reckoned with the macroscopic lesions. Alzheimer says nearly all epileptics have a histological basis, while, as already stated, only one third show macroscopic changes.

Therefore from this viewpoint we are justified in attempts to prevent the autointoxications. A survey of modern literature shows the predominance of the autotoxic theory in some form, even though one wishes to discount the significance of so called autointoxication in an attempt to avoid a form of modern scientific cant; the material is very suggestive in metabolism study. Alexander, in England, believes firmly in the pernicious character of colonic putrefaction. Various resources for keeping the colon irrigated have had prompt and sustained good results in my hands. Lane, of England, performs ileosigmoidostomy; LaPlace, of France, and Alvé, of Peru, have performed appendicostomy and retrograde flushing. Doumer, of France, was so much impressed by results obtained in epilepsy in treating constipation with electricity that he reported the cases before the Academy of Sciences (Paris), Ebstein, in Germany, in a learned paper traced an intimate connection throughout the ages between gastrointestinal disturbances and convulsive affections as a class. Epilepsy is no exception to this law, whatever its nature.

Axtell, an American surgeon, has found over thirty cases of acute angulation and flexion of the sigmoid in epileptics, causing mechanical obstruction. This all goes to suggest that in all possible candidates for epilepsy it is not enough simply to diet and evacuate the bowels. The whole colon should be examined, using all known resources. Many specialists recognize only mechanical causes of constipation. Let us suppose that in certain individuals certain substances are formed in the colon—powerful bodies, like neurin and cholin. Like certain drugs, they have a selective affinity for particular cells. They are exquisitely neurotropic, like wood alcohol, for the optic nerve or the endotoxins of syphilis, for the cortex and posterior cord. There are two ways of attacking this problem. First by diet—the future will soon see successful attempts to feed invalids exactly the nitrogenous compounds they require. Inert and toxic combinations will be left out. Second, less by "regulating the bowels" than by discovery and removal of mechanical obstacles. Possibly the ideas of driving putrefactive bacteria out of the intestine by introducing hostile germs may be made to cooperate.

Most unbiased authorities agree that if syphilis, tuberculosis, and alcohol cause epilepsy, it is impossible to determine to what extent they operate and how they effect this result. But in any case, abundant influences are at work to antagonize each one of these hostile agencies so that nothing further can be done in behalf of epilepsy.

It is evident that prevention of epilepsy in the potential subject cannot differ from the general hy-

giene of confirmed epilepsy. Among the "candidates for epilepsy" the "one attack" subjects must be included, for they have not yet been proved to be epileptics. Other candidates must be judged by their inheritance in part, but Vogt finds that the majority of those who ought to be epileptics have never become so—a strange inheritance irony. Despite their ancestry they may be quite normal or at most only a little nervous. It therefore would be a hardship to submit all these children to strict discipline. In crossed heredity the latter might be justifiable. As a rule, though, it would be best to wait for evidences of the epileptic character. It is an open question whether children with the spasmophilic constitution should be regarded as potentials. According to Birk they represent two very different types. If there is a doubt the child should be given the benefit of it. (See Vogt and Scholz.)

The epileptic character should be familiar to nurses, governesses, teachers, school physicians, etc. It is described at length by many writers upon this subject. One needs, however, to distinguish sharply between these characteristics which belong to the preconvulsive makeup and those really a part of the disease or as sequela of the deterioration inseparable from the well established convulsive disorder. When it has been decided that a child has the epileptic character, or rather characters—for there are different types—he is placed under a regimen (which must tend, to a certain extent, to irritate him). He should be disciplined, dieted, kept from exciting scenes (like moving pictures), for attacks, which would be certain to appear, may be precipitated or intensified by effects which in themselves may act as excitants.

CONCLUSIONS.

From the foregoing remarks one is made aware that the prevention of epilepsy is closely bound up with: 1. A more precise and intensive study of family stock from which the disease is recruited; 2, birth injuries and accidents must be still further eliminated; 3, the rearing of neuropathic individuals must be given more definite and painstaking attention; and, 4, proper metabolism in potentially epileptic individuals must be still more energetically safeguarded.

84 EAST FIFTY-SIXTH STREET.

OVEREATING AS A CAUSE OF ACUTE APPENDICITIS,*

With a Theory as to the Mechanism Involved.

By EMIL NOVAK, A. B., M. D.,
Baltimore,

Associate Professor of General Practice, Johns Hopkins Medical School.

Recent years have seen great strides in the development and extension of our knowledge concerning the diagnosis and treatment of appendicitis. This cannot, however, be said of the etiology of the disease, concerning which comparatively little of a definite nature is known even at the present day. While of subordinate importance from the standpoint of

treatment, the causation of appendicitis, as of all other diseases, is of prime importance as regards possible prevention. Aside from the general importance of the subject, my interest in it has been stimulated by a recent personal encounter with the disease. In this brief paper I shall confine myself entirely to one aspect of the question, i. e., the causation of some cases of appendicitis by certain causes reverting to the digestive canal, and especially by overeating.

The great number of theories which have at various times been adduced to explain the production of appendicitis is only one proof of the indefiniteness of our knowledge. All authors upon the subject, however, appear to be fully agreed upon the very great importance of the digestive disorders as causes. I shall quote only two of the leading authors. In his textbook on the *Vermiform Appendix and Its Diseases*, Kelly states, in speaking of the influence of disorders of digestion: "These have the most important influence in determining an acute attack of appendicitis. In many cases there is a history of chronic constipation and indigestion. Sometimes an acute attack comes on shortly after a hearty meal of unsuitable food." Deaver, in *A Treatise on Appendicitis*, makes the following emphatic statement: "Of the exciting causes of appendicitis, from the clinical point of view, disturbances of digestion are the most important. Such is the preeminence of these in the etiology of appendicitis, and with such constancy have they been observed, that it is unhesitatingly asserted that appropriate inquiry will elicit a history of such disturbances in almost all cases."

There have been a great many interpretations of the manner in which digestive disturbances may lead to the production of appendicular inflammation. A leading rôle is ascribed by many to constipation, which is said to lead to a marked increase in the number and virulence of the intestinal bacteria, while, at the same time, it is apt to be associated with a condition of greater or less distention of the cecum, these two factors being strong predisposing influences to the initiation of an inflammatory process in the appendix. The rôle of constipation is, however, discredited by some of the best investigators of the subject, such as Deaver, who states that in the majority of cases there is no history of constipation preceding the attack. In this connection it may be suggested that, whereas appendicitis is much more common in men than in women, the reverse is true of constipation. There are some, again, who believe that distention of the cecum brings about appendicitis, by forcing, through pneumatic pressure as it were, particles of intestinal contents into the lumen of the appendix. Numerous other digestive causes of appendicitis, both acute and chronic, have been suggested, but I shall confine myself to the special cause indicated by the title of my paper.

My own observation of the disease has served to impress me with the fact that not a few cases of acute appendicitis are directly associated with dietary indiscretion in the form of overeating, and hence I have concerned myself with an effort to find a satisfactory explanation of the mechanism involved in this group of cases. That instances of this type are by no means rare is shown by the fact

*Read at the Annual Meeting of the Maryland and Delaware Medical Faculty at Maryland, Baltimore, April 24, 1922.

that I have seen many within the past few years, including a number in the circle of my immediate friends. In one of these cases the attack followed an oyster roast, in another a banquet, the pain in both cases ensuing within a few hours after the dietary indiscretion. In both instances the appendix was found to be acutely involved, gangrenous in one and distended with pus in the other. In a number of other cases the patient associated the attack of appendicitis with an unusually heavy meal. This was my own experience, for my attack came on very soon after an exceptionally and indiscreetly hearty dinner. At operation, some twelve hours after the onset of pain, the appendix was found to be already distended with pus. These cases are merely illustrative of a considerable group in which the attack of appendicitis appears to be indubitably associated with overeating. Every surgeon has encountered a number of such cases, and all authors speak of the frequency and importance of this association. Kelly

states, in this connection, that "a common history in the account of events immediately preceding the attack, is that the patient had partaken of an unusually hearty supper and a few hours later was awakened from sound sleep by agonizing colicky pain in the abdomen, accompanied by vomiting."

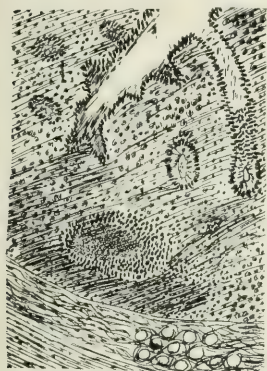


FIG. 1.—Section of wall of appendix, showing preponderances of lymphoid tissue in submucosa.

In order to study intelligently the mechanism of its production by overeating, one should have a clear conception of the principles underlying the pathogenesis of appendicitis in general. It is now commonly agreed that this disease is always an infectious process, the invading organism being most frequently *Bacillus coli communis*, although occasionally other organisms may be concerned. There are some who believe that, in cases of the suppurative type, the colon bacillus is associated with one of the well known pyogenic group, such as the streptococcus. However, in view of the well known tendency of the colon bacillus to become virulent under certain conditions, it does not seem to be necessary to make such an assumption. No part of the intestinal canal is as rich in bacterial organisms as the cecum. As already mentioned, these organisms are increased during constipation, and even more, according to Moynihan, after the use of strong purgatives.

It may be said, speaking generally, that every case of appendicitis represents a disturbance of the equilibrium which is normally maintained between these intestinal bacteria on the one hand and the local and general defensive agencies of the body on the other. In those animals which do not have an

appendix, its place seems to be filled by a collection of lymphoid tissue in the wall of the cecum, which is frequently elongated. It is only in man and the anthropoid apes, and one or two other types of animals, that a distinct appendix is found. Many



FIG. 2.—Showing the superior mesenteric vessels emerging from behind stomach, the ileocolic branch of the artery being traced to the cecum and appendix.

authors have called attention to the close analogy which exists between the appendix and the faucial tonsil. Like the latter, the appendix contains a great deal of lymphoid tissue, and, like the tonsil, it is in close relation with a cavity in which bacteria are especially prolific. The accompanying illustration (Fig. 1) shows the preponderance of lymphoid tissue in the structure of the appendix. It is well



FIG. 3.—Stomach turned up and pancreas cut across, showing superior mesenteric vessels; artery to left of the vein.

known that, as a rule, the lymphoid tissues of the body are particularly liable to infectious processes, and it has been shown that the adenoid tissues of mucous membranes are very vulnerable to infections from its surface. In addition to this, it must be remembered that the appendix is, in itself, a vestigial structure; not only is it a vestigial structure, but it is also undergoing further degeneration, so that this, in itself, would seem to make it *locus minoris resistentiae*.

The whole problem of the cause of inflammations of the appendix, therefore, seem to resolve itself on the one hand into a study of those conditions which bring about an increase in the virulence of the organisms which are native to the cecum, and on the other hand a study of those conditions which bring about a lessening of the resistance of the appendix to invading organisms. It becomes at once apparent that there are many different agencies which are capable of producing one or the other of these two principal effects. The condition of the appendix remaining the same, it is not surprising that constipation, for example, occasionally brings about an inflammation of the organ by markedly increasing the number and virulence of the organisms in the large intestine. In the same way, it is not to be wondered at that the appendix not infrequently is involved in general infections, such as influenza and rheumatism. A number of cases in which appendicitis and rheumatism were closely associated were recorded some years ago by Finney, although many other authors have called attention to the frequent association of these two diseases. As a matter of fact, this relationship, together with the frequent coincidence of appendicitis and tonsillitis, speaks very strongly for the analogy existing between the appendix and the tonsil—an analogy which is thus shown to be clinical as well as histological.

In the present discussion I propose to confine myself to a group of cases in which appendicitis appears to be due to a weakening of the resistance of the appendix rather than to any actual or absolute increase of virulence on the part of the intestinal bacteria. By way of introduction it may be well to review the blood supply of the appendix, with which we shall be directly concerned in this discussion. The appendix is supplied by the ileocolic artery, which is a branch of the superior mesenteric. The latter arises from the abdominal aorta behind the pancreas, about a half inch below the origin of the celiac axis. From this origin the superior mesenteric passes down behind the stomach and pancreas, and, crossing the vertebral column, arches into the mesentery, supplying the small intestine practically throughout its entire extent. The superior mesenteric vein, by means of which the blood is returned from the small intestine and also from the appendix, accompanies the artery rather closely for a distance. Behind the stomach, however, it diverges from the artery somewhat, passing up on the right of the spinal column to join the splenic vein, and thus form the portal. The point which I wish especially to emphasize, and which is well shown in the accompanying illustrations (Figs. 2 and 3), is that the superior mesenteric vessels are in close relationship with the

stomach, passing behind and then below the viscus.

Now, what is the application of these facts to the causation of appendicitis by overeating? After a very heavy meal the stomach contains several pounds of food. The capacity of the stomach, in moderate distention, is said to be from five to eight pints, or, rating a pint as a pound, from five to eight pounds. It certainly seems logical, therefore, to believe that a stomach much distended with food could exert considerable pressure upon structures in its immediate neighborhood. Anyone who has had occasion to open the abdomen of a dog immediately after it has been given a heavy meal can bear witness to this fact.

During the past few weeks I have been engaged in making a study of the anatomy of the stomach and its immediate surroundings. This has led me to the belief that the superior mesenteric vessels, more than any other structures, would be subjected to these pressure effects. From the standpoint of its position it is especially the artery which would seem to be exposed to pressure by the distended stomach, inasmuch as, in its course across the vertebral column from left to right it is placed directly between the latter and the stomach, the pancreas alone being interposed in a part of its course. The vein being situated entirely to the right of the vertebral column is less exposed to the compressing action of the stomach. On the other hand, from the standpoint of its structure, the vein would seem to be much more liable to compression than the artery, on account of its thinner and more collapsible wall. Another possibility must be borne in mind. Not only are the superior mesenteric vessels exposed to the direct pressure of the stomach against the posterior abdominal wall, but by virtue of the fact that they form an arch under the stomach, in their passage to the mesentery, they are also, it would seem, exposed to compression as a result of a sagging down of this viscus when overloaded. It is possible that this effect is enhanced by the relation of the vessels to the ligament of Treitz, which holds the duodenojejunal angle quite immovably fixed. As to just what form of compression actually occurs, it seems quite impossible to say, but the anatomical studies which I have made impress me with the fact that interference with the superior mesenteric circulation is very possible when the stomach is overdistended with food.

What is the result of such a circulatory disturbance upon the small intestine and the appendix? First, as to the intestine, it may be said that the first effect would be a marked increase in the peristalsis. It has been satisfactorily shown, especially by Mall and Salvoli, that any interruption to the circulation of blood through the intestinal wall produces a more or less decided alteration in the peristaltic activity. Mall states: "My own experiments show that ligation of the superior mesenteric artery invariably sets up a violent contraction of the small intestine." Again: "My experiments on the living animal or on the isolated intestine in normal salt solution at 37° C. invariably show that closure of the superior mesenteric vein causes violent contractions of the whole small intestine." If it be the superior mesenteric artery which is affected by overdistention of the stomach,

the resulting anemia of the intestinal wall is a strong excitant of the muscular activity; if, on the other hand, it is the superior mesenteric vein which is compressed, we have to deal with a venous hyperemia instead of an arterial anemia. As far as the effect on the peristalsis is concerned, however, there is, according to Mall, no difference between these two forms of circulatory disturbances, inasmuch as peristalsis is much exaggerated either by deficiency of oxygen or an excess of carbon dioxide. The movements of the intestinal canal associated with normal peristalsis are painless, but the pathologically increased peristalsis brought about by circulatory disturbances such as we are now considering is associated with a greater or less amount of pain of a crampy or colicky nature. As is true of most other conditions of the small intestine, this pain is most commonly felt in the umbilical or paraumbilical regions. Although we are not directly concerned with this in the present discussion, it may be said that this perception of the intestinal pain in the epigastric or umbilical region is explainable by the well known hypothesis of Head.

Now, the first symptom in an attack of appendicitis is pain—pain which is felt most commonly, at the beginning of the attack, in the umbilical region; next most frequently in the epigastrium; and least commonly in the right iliac fossa (Deaver). So constantly is pain an inaugural symptom in appendicitis that, according to Moynihan, its absence may be looked upon as definitely excluding any possibility of the appendix being at fault. Not for several hours, in the majority of cases, is the pain distinctly localized over the appendix. I have never been very forcibly impressed with the current explanation of why the initial pain of appendicitis is felt in the pit of the stomach. Kelly quotes (author not named) as follows: "When the ileum and ascending colon have a common free mesentery the discomfort and pain from appendicitis are felt in the pit of the stomach, or in the paraumbilical region, which is the segmental area corresponding to the point of origin of this portion of the mesentery. In healthy individuals there is no sensation during the process of digestion, and intestinal tumors may progress without pain until perforation and peritonitis occur. Strong intestinal peristalsis may only produce a sensation of rumbling, but when the parts of the stomach which have no mesentery, or those fixed to the parietes by peritoneal reduplication or adhesions, are overdistended, there will be a tension upon the nerves in the subserosa, and each contraction will cause colicky pains." It seems difficult to believe that all cases of appendicitis, including those of perhaps mild catarrhal nature, should result in tension upon the subserosa. Furthermore, the segmental somatic area corresponding to the appendix is not in the pit of the stomach, but over the appendix itself (Head). On the other hand, if we assume that the introductory pain of appendicitis originates in the small intestine, as a result, for example, of a circulatory disturbance, it is easy to understand why the pain is so frequently felt in the epigastrium, inasmuch as this is the somatic area corresponding to the intestine. The secondary localization of the pain over the appendix Lennander explains as due to in-

volvement of the neighboring parietal peritoneum, although here, again, the hypothesis of Head appears to afford a more plausible explanation.

So far I have said nothing as to the effect of circulatory disturbances, such as we are now considering, upon the appendix itself. It is quite evident that this effect must be of a profound nature, inasmuch as the appendix is a structure of much less resistance and vitality than the small intestine. This fact I have already emphasized. Whether the interference with its blood supply be arterial or venous, in either event it is calculated to exert a very decided and harmful influence upon the appendix walls; if arterial, the appendicular tissues are deprived of their full share of oxygen; if, on the other hand, there is a venous hyperemia, oxygenation is interfered with, while, at the same time, the excessive amount of carbon dioxide brings about a local asphyxia. As I have already said, either type of circulatory disturbance is profoundly injurious to the appendix, as may be illustrated by comparison with the effects of similar circulatory disturbances upon the kidneys. If the renal artery be shut off for a time, the vitality of the kidney epithelium is so much interfered with that the secretion of urine ceases; if, however, it is the renal vein which is blocked, in spite of the excessive amount of blood in the kidney tissues, the deficiency of oxygen and excess of carbon dioxide bring about such an impairment of the vitality of the epithelial cells as to stop the secretion of the urine.

If, then, the resistance of the appendix is so decidedly diminished, under such circumstances as we are now considering, it is not surprising that the organisms which swarm in the cecum and appendix assume a relative virulence far in excess of that which characterizes them under a normal condition of affairs. The most important of these organisms is *Bacillus coli communis*, a normal inhabitant of the intestinal canal. As a result of the onslaught of these organisms upon the poorly resisting appendix, a more or less severe type of appendicular inflammation is precipitated.

Only recently a theory has been suggested by Robertson, according to which appendicitis is caused by vascular disturbances in the appendix as a result of exaggerated muscular activity in the colon and cecum. He states that "Muscular contraction in the colon and cecum, whether of the circular of these or of the longitudinal bands, must be associated with a simultaneous contraction of the muscular walls of the appendix. While the normal muscular contraction and relaxation of the appendix act only to support circulation, when spasmodic in nature it overdoes the matter and produces vascular disturbances. According to the intensity of the spasm will depend the degree of mucous membrane varicosity and edema, and thus will be determined the varying degrees of inflammatory action." He does not explain, however, the factors concerned in bringing about the great increase in muscular activity of the colon and cecum. If this really occurs, is it not caused in many instances by the circulatory disturbance due to pressure on the superior mesenteric vessels by a heavy stomach, as I have indicated? My own impression is that the appendicular involvement may be explained by the interference with the circu-

lation, although Robertson, as will be noted, assumes that the disturbance is due to a spasmodic contraction of the muscular tissue in the wall of the appendix itself. There is room here for interesting experimental study, which I trust to be able to carry out in the near future.

CONCLUSION.

In closing, I wish again to emphasize that this brief discussion of the etiology of appendicitis has to deal with only one group of cases—those which are obviously associated with dietary indiscretion in the form of overeating. While the explanation which I have offered of one group of cases cannot as yet be verified by any positive evidence, I believe it is rendered very plausible by anatomical and clinical consideration. It is no doubt true that appendicitis is just as protean in its etiology as in its clinical manifestations—that it is often due to mechanical obstruction of the appendicular lumen, sometimes to constipation, occasionally to traumatism, and often to other causes. At all events, I make bold to submit the following statements:

1. A considerable number of cases of appendicitis are caused by overeating.
2. As a result of overdistention of the stomach, the superior mesenteric vessels, lying immediately behind this viscus, may be subjected to compression.
3. If such compression occurs, there is produced a decided interference with the intestinal circulation.
4. The first effect of such a circulatory disturbance is the excitation of more or less violent peristaltic activity in the intestine, thus explaining the pain usually felt in the epigastrium at the onset of an attack of appendicitis.
5. Another effect, direct or indirect, of this disturbance of circulation is exerted upon the appendix, the resistance of which is diminished to such an extent that it often falls a prey to the action of the ever present *Bacillus coli communis* and other intestinal organisms. A more or less severe attack of appendicular inflammation is thus precipitated.
6. The moral is plain enough: Don't overeat!

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LABYRINTHITIS AND CEREBELLAR ABSCESS.*

Differential Diagnosis.

By IRVING WILSON VOORHEES, M. S., M. D.,
New York.

During the past decade otology has entered upon a new era. This era began with the study of the symptoms of those complications of middle ear and mastoid disease, which arise whenever suppurative processes break through their narrow confines and invade adjacent structures. One of the most important of these complications is labyrinthine suppuration, since it not only gives rise to violent symptoms, but destroys the hearing, and by its invasion of the brain may bring about a rapidly fatal issue.

The diagnosis of all labyrinthine and cerebral complications of chronic middle ear suppurations depends upon an accurate and exhaustive functional test of both the vestibular and cochlear apparatus. One reason why the Austrians and Germans have outstripped us in the interpretation of dangerous aural symptoms, is that they pay special attention to the elucidation of objective signs of aural disease. Moreover, their attention was aroused and their interest is constantly stimulated by the great number of patients who come to them annually from countries and provinces of the north, south, and west, where poverty, neglect, and remote distances from great medical centres have combined to produce the very worst disease conditions. Many patients who visit the continental clinics are extremely ill when they arrive after making a two or three days' journey in a crowded third or fourth class railway coach; while our patients for the most part secure efficient medical aid before extreme danger manifests itself.

It is impossible and perhaps unnecessary to describe here in detail the various functional tests; suffice it to say that their importance should be much more emphasized in America than at present in order to bring about more exact diagnosis and to enhance the value of our clinical studies and reports.

One of the most important symptoms of labyrinthine disturbance is nystagmus. Nystagmus consists of a rhythmic associated movement of both eyes in a given plane. This movement is slow in one direction and rapid in the opposite direction—the slow component being of vestibular origin; the rapid component of cerebral origin.

Upon irritation of the vestibular apparatus, nystagmus takes place. This is brought about by the fact that the vestibular nerve, after passing through the vestibular ganglion, enters Deiter's nucleus. The cells of Deiter's nucleus send their axones through the posterior longitudinal bundle to the nuclei of the abducens and oculomotorius, and in this way call forth the nystagmus. Further, the cells of Deiter's nucleus send their axones into the spinal cord through the vestibulospinal path, and these are the fibres which produce those disturbances of equilibrium which arise simultaneously with the nystagmus.

If we destroy either the right or left labyrinth, there arises, as is well known, very strong rotatory and horizontal nystagmus toward the sound side. Movements of the head increase the nystagmus the first two or three days. Recently Bárány was able to show in one case that turning the head to the diseased side strengthens the nystagmus toward the sound side. It is unfortunate that the influence of head movements upon nystagmus have not been exactly studied. In cases in which there is still some reaction by compression and aspiration of air in the external canal, exactly the same strong nystagmus to the sound side is found as in total destruction. Moreover, Rutin has repeatedly observed very strong nystagmus to the sound side in serous labyrinthitis, when labyrinthine function was still present on the diseased side. Certainly, a marked diminution of function brings about strong

nystagmus to the sound side. As is known, spontaneous nystagmus toward the sound side gradually diminishes in intensity from the moment of labyrinthine destruction. After labyrinthine exenteration, nystagmus usually disappears in from two to three days, but in some cases it may persist unchanged for a long time. Bárány is under the impression that this is especially true where slight meningitis is present. The appearance and disappearance of spontaneous nystagmus after labyrinthine destruction depend for the most part upon central conditions. Voss has furnished proof of this in one case in which in a unilateral labyrinth destruction a semicircular canal in the sound side was wounded through operation and this labyrinth was apparently immediately put out of commission. Nystagmus to the opposite side, that is, to the side without a labyrinth, followed, just as it does in an individual with two sound labyrinths, one of which becomes functionless.

The direction of the apparent turning of the surroundings corresponds usually with the direction of the nystagmus. For instance, a patient during labyrinth irritation perceives the apparent turning of the surroundings directed toward the side of the disease, but after destruction of the labyrinth, turning is perceived in the opposite direction, namely, toward the sound side. In rarer cases, the patient perceives during the dizziness accompanying experimental rotation, apparent turning of the entire body. During severe attacks of dizziness, nystagmus of labyrinthine origin is very intensive, rotatory, sometimes, with a horizontal component, but after a few hours the intensity of the nystagmus usually decreases markedly, and in uncomplicated cases the nystagmus, a few days later, is of smaller stroke and finally vanishes. An attack of dizziness ordinarily lasts a short time; but in some cases it persists for several hours, and may continue for one or two days. The patient is obliged to remain in bed. The slightest movement of the body, even the attempt to assume the erect posture in bed, leads to severe increase of dizziness. Symptoms accompanying severe dizziness are subjective noises, such as ringing, whistling, etc., and nausea with repeated vomiting. After the decline of a severe attack of dizziness, a slighter and more constant dizziness is present for several days. Gradually this feeling of dizziness goes over into a disturbance of equilibrium. Finally, however, the patient complains neither of dizziness nor marked disturbance of equilibrium, and only an exact test can determine the presence of any unsteadiness due to labyrinthine destruction.

We make a diagnosis of labyrinthine suppuration if, in a case of middle ear suppuration of suppurative inflammation of the brain membranes, attacks of turning dizziness and sudden deafness, with loss of vestibular irritability, occur. Under such circumstances the diagnosis offers no difficulties, but the less stormily the labyrinthine symptoms begin, the longer the symptoms exist. If a complete loss of function of the inner ear is not determinable, therefore, diagnosis of the pathological condition of the labyrinth is exceedingly difficult. The complicated structure of the labyrinth and the fine functional

differentiation of its constituent parts can cause an almost inconceivable variety of clinical symptoms of labyrinthine suppuration. The diagnosis and therapy of labyrinthine suppuration have the fixed purpose of protecting the sufferer from highly dangerous endocranial complications of labyrinthine origin. In spite of the current interest in this highly important chapter of ear disturbances, all questions are not sufficiently answered with respect to indications for treatment. The exceedingly variable clinical course of labyrinth suppurations is doubtless in great part responsible for this condition. The end results of purulent invasion into the labyrinth may be set down as follows:

1. Recession of all symptoms and *restitutio ad integrum*.
2. Recession of all symptoms, except the return of labyrinth function, which may remain completely destroyed.
3. Increase of symptoms and death from diffuse meningitis or brain abscess.

The course of uncomplicated labyrinthine suppuration extends over about two to three months, if we count the time from the beginning of the labyrinth symptoms to the end of the labyrinthine suppuration when the spontaneous nystagmus has become quite trifling; that is, directed toward both sides, toward the right upon extreme view toward the right, and toward the left upon extreme view toward the left.

Testing of disturbances of equilibrium during an experimentally produced nystagmus is carried out after irrigation of the ear with warm or cold water. One produces a caloric nystagmus, which must usually be stronger than is necessary for the caloric reaction. Then one asks the patient to stand and tests him for the Romberg symptom. When the right ear is irrigated with cold water, nystagmus is produced toward the left, consequently the patient must fall toward the right, that is, in a direction away from the nystagmus. There are people who are so strongly inclined to fall that one can hold them upright only by summoning all one's strength; others again show only slight vestibular reactions which scarcely can be recognized by the unpractised. There are, however, some normal individuals who do not stagger in the slightest, even during the strongest nystagmus.

Suppurative inflammation in the cavities of the labyrinth one may designate, in so far as the surrounding bone is not attacked by the inflammation, as labyrinth empyema. The collection of pus in the endolymphatic spaces is called endolabyrinthitis, and that in the perilymphatic spaces as perilyabyrinthitis. By suppurative paralabyrinthitis one understands suppurative inflammation of the bony labyrinthine capsule and of the petrous bone in the immediate neighborhood.

One may divide labyrinthine suppuration into diffuse and circumscribed. By diffuse labyrinthine suppuration, we mean a condition in which the suppuration has extended to all the cavities of the labyrinth; that is, to the semicircular canals, vestibule, utricle, saccule, and to the cochlea. If a part of the cavity is not affected by suppurative inflamma-

tion, then one speaks of circumscribed labyrinthine suppuration. One can expect a circumscribed suppuration only in the acute or subacute stage of a labyrinthine suppuration. The type of chronic labyrinthine suppuration is diffuse, extending throughout the entire labyrinth. In the case of chronic labyrinthine suppuration or of labyrinthine cholesteatoma, thin, bony partitions in the labyrinth (crista vestibuli, scala, modiolus, and lamina spiralis) are destroyed. Gradually, also, the part of the petrous bone lying between the labyrinth and dura is destroyed. The end result is pachymeningitis externa and extradural abscess. Finally, with or without fistulous rupture through the dura, endocranial complications of the middle fossa may be caused by labyrinthine suppuration. When they occur, they arise from fistula or labyrinthine suppuration at the summit of the superior semicircular canal. The typical endocranial area of extension of labyrinthine suppuration is the posterior fossa, therefore more than eighty per cent. of otitic cerebellar abscesses are to be traced back to labyrinthine suppuration (Gustav Alexander).

According to the duration of suppurative labyrinthine inflammation one distinguishes acute, subacute, and chronic. With respect to the condition of surrounding parts, one has to distinguish: 1. Labyrinthine empyema, when there is a collection of pus in the interior of the labyrinth, but in which the surrounding bone is unchanged; 2, labyrinthine suppuration, with suppurative paralabyrinthitis, if the bone in the neighborhood of the diseased labyrinth is diseased at the same time; and, finally, 3, labyrinthine suppuration, with suppurative paralabyrinthitis and fistula formation, if the soft parts of the labyrinth are diseased and a pathological communication has been established between the labyrinthine spaces and the surrounding cavities; that is, interior of the skull, middle ear, etc. Suppurative labyrinthitis is always infectious, in proof of which one can always demonstrate pathogenic microorganisms, microscopically and by culture.

Acute labyrinthine empyema begins with marked hyperemia of the surrounding parts of the labyrinth; very shortly the perilymph and endolymph become affected; and finally there is destruction of the membranous labyrinth. The canals through which the labyrinthine spaces ordinarily connect with the surrounding region, namely, the aqueductus vestibuli and aqueductus cochleæ, and the lymph paths along the nerve canals of the petrous bone, become closed by fibrinous masses, the nerve terminals in the final stage of inflammation become necrotic, and the entire labyrinth loses its function permanently. Further, labyrinthine empyema may remain stationary for several months. In favorable cases healing gradually takes place through absorption of the pus and from bony organization through formation of connective tissue. In other cases the empyema breaks through externally into the middle ear, or internally into the endocranium. The middle or posterior fossæ are the areas most frequently invaded. If the softening of bone around a fistula spreads out to other parts of the petrous bone, then caries or necrosis of the labyrinthine capsule occurs, and finally, in some cases, especially

in chronic labyrinthine tuberculosis, sequestration of the petrous bone occurs.

CEREBELLAR ABSCESS.

In the course of chronic middle ear suppurations, cerebellar abscess develops in the majority of cases as a result of chronic or acute diffuse labyrinthine suppuration. The paths of infection are as follows:

1. Suppurative inflammation of the mastoid process continued to the sigmoid sinus, and from there into the posterior fossa.
2. The inflammation extends from the middle ear cavity by way of the oval window to the vestibule, and from there to the inner ear along the course of the nerve fibres by way of the internal auditory meatus into the cerebellum.
3. Suppurative middle ear inflammation, with fistula on the promontory, leading to infection of the cochlea. Endocranial fistula of the labyrinth, with direct access of pus to the posterior fossa.
4. Extension of the suppuration from the middle ear by way of fistula of a semicircular canal, usually the horizontal, with subsequent fistula through the posterior semicircular canal into the posterior fossa.
5. Transplantation of a suppurative middle ear inflammation to the posterior fossa through the facial canal.
6. Middle ear suppuration, with or without fistula, may lead to labyrinthine suppuration. The extension of the labyrinthine suppuration to the posterior fossa takes place through the aqueductus vestibuli and the ductus and saccus endolymphaticus.

General symptoms of cerebellar abscess. In the early stage there is physical and psychical unrest, and the patient is easily fatigued. There is sleeplessness in spite of the use of soporifics and annoying occipital headache. Vomiting of the type known as cerebral is very frequent. Moreover, attacks of dizziness are very common. Tenderness to pressure, as well as pronounced stiffness of the neck and sensitiveness to percussion of the occipital region, are frequent. In advanced cases there are marked general weakness, decrease of muscular strength, depression, loss of appetite, sallowness, and laxity of the skin of the body. Through long existing fetid middle ear suppuration, the patient is usually weak from insufficient nourishment, and may be anemic. Cerebellar ataxia is especially important. It consists in striking disturbances of co-ordination of the muscles of the trunk and of the lower extremities, sometimes also of the upper extremity on the side of the disease (hemiataxia). This ataxia is seen upon standing, upon walking forward or backward, but is sometimes concealed by the disturbances of equilibrium, due to an already present labyrinthine disease. Cerebellar ataxia is more manifest upon examination of the coordination of the extremities and by walking sideways.

A cerebellar symptom of great significance is abducens paralysis, or paralysis on the side of the disease, caused by edema of the brain or through pressure of the abscess upon the abducens, producing double vision. More rarely, disturbances of the

oculomotor nerve and paralysis of the movement of the eyeball are found. Lumbar puncture is usually cloudy and, microscopically, particles of pus are to be seen. The culture of the lumbar fluid is sterile in the majority of cases. In the minority of cases, pathogenic microorganisms are present. The occurrence of muscular cramps in the face, neck, and extremities always means that the cerebellar abscess has gone over into a diffuse meningitis.

In almost all cases it is possible to diagnosticate disease in the posterior fossa through exact examination of the patient. The experienced operator will be further guided by the operative findings in the labyrinth, the condition of the dura mater and of the sigmoid sinus, and will seek for and drain the abscess.

Bárány's pointing test. The subject closes his eyes and touches the pad of the supinated index finger, then rests his arm upon his knee and raises his arm again until his finger touches that of the examiner. If nystagmus exists toward the right, the subject does not touch the finger, but points beyond it, toward the left. This is true for normal cases only, abnormal cases show diminished or absent pointing reaction.

Upon carrying out this test it is absolutely necessary that the investigated person know nothing of the manner in which he performs it; for this reaction is of truly cortical origin and therefore is influenced by suggestion and autosuggestion. One must avoid such an occurrence by keeping the subject in ignorance of his mistakes. Whenever, therefore, a mistake is made, the investigator moves his own finger so that it shall meet the finger of the subject, who will then not realize that he has changed the position of his arm.

For trying out the reaction movements in the wrist joint, the subject places his right forearm over the back of a chair and holds it firmly with the left hand. Now the subject extends his wrist joint and with stretched out index finger, the remaining fingers being closed in the palm of the hand, is instructed to touch the examiner's index finger, held in the same manner along its entire length. Then he bends his wrist joint as far as possible downward. The joint is again extended and the process repeated as often as one wills. In this test the entire movement is confined only to the wrist joint. If horizontal nystagmus exists toward the right, then the subject, with head upright, points past the finger, toward the left. It is to be noted that many normal, intelligent persons show no deviation, or only slight deviation during the nystagmus, which evidently depends upon the great exactness of the muscle and joint sensations of this joint. In ignorant persons one finds the deviation very frequent.

DIFFERENTIAL DIAGNOSIS.

It is not so much a question whether cerebellar abscess or labyrinthine suppuration is present, but whether a labyrinthine suppuration exists alone, or in association with cerebellar abscess.

A differentiation is impossible if the suppuration has attacked the eighth nerve in the inner ear canal, since through the inflammatory processes in the previously undiseased eighth nerve, symptoms simi-

lar to a fresh labyrinthine suppuration may be produced. In such a case the diagnosis sometimes becomes possible if after resection of the labyrinth the symptoms remain unchanged, or after a slight remission begin again. If one holds to the rule that at each labyrinthine resection exposure of the dura in the middle and posterior fossæ must be carried out, it may be possible to determine at operation conditions which could not be recognized clinically.

A patient with cerebellar abscess can walk and is not conscious of his disability, but shows a tendency to fall forward and run. He cannot walk sideways (Neusser's symptom). There are changes of pulse and subjective sensations if he moves from the prone position in bed to the upright position (Schmidt). Most important is the nystagmus which appears early. It is differentiated from labyrinthine nystagmus in that the latter is directed to the sound side, decreases from day to day, and is rotatory, with a small horizontal component. Cerebellar nystagmus is directed to the diseased side, increases from day to day, is rotatory, with strong horizontal component, and is inconstant; that is, shows a changing character. Coexistent with homolateral paralysis in cerebellar abscesses are dizziness, vomiting, nystagmus, and disturbances of equilibrium.

The falling test. Disturbances of equilibrium may be transitory or permanent. Temporary disturbances of equilibrium, which continue hours or days, have been seen chiefly in persons in whom a remote action took place upon the cerebellum through hydrocephalus. Permanent disturbances of equilibrium are observed in diseases of the vermis. Here falling always occurs toward the diseased side. In two cases in which the disease of the vermis had begun at a very early age, Bárány observed a compensation, evidently due to the cerebrum. One case was a tumor of the right vermis, operated upon by Fedor Krause, in which Krause extirpated an enormous tumor, including the vermis and both hemispheres. Subsequently the boy patient could stand, even during the time he was obliged to wear a dressing, and showed very trifling ataxia of the extremities. Here the cerebrum had evidently gradually assumed the functions of the cerebellum during the slow development of the tumor. It is known that partial loss of the cerebellum does not necessarily cause permanent disturbances of balance. A test of the vestibular reactions in such cases would be very interesting.

Testing of the reaction movements of the body is carried out in a manner analogous to Romberg's investigation. Here we may differentiate, 1, spontaneous disturbances, and, 2, disturbances of the reaction movements during nystagmus. If the patient sways during Romberg's test, then one has to look for spontaneous nystagmus, to determine whether there is any relation between the direction of the swaying and the direction of the nystagmus. If the stroke of the spontaneous nystagmus is toward the left, the patient falls by upright position of the head toward the right, and it may be demonstrated that turning the head changes the direction of falling, so that when the head is turned upon a vertical axis toward the left shoulder, the patient falls forward,

and, when the head is turned toward the right shoulder he falls backward. In such a case it is highly probable that a disease of the peripheral labyrinth or of the vestibular nerve exists before its entrance into the medulla oblongata. If, however, there is no manifest relation between the direction of falling and the direction of the spontaneous nystagmus, and if the falling is not influenced by turning the head, then the falling is either of hysterical or cerebellar origin.

Falling, due to a neurosis, is usually quite easily diagnosed. One places the patient with feet together and eyes open, and he does not stagger. The physician now says that he is about to test the pupillary reaction and asks the patient to open and close the eyes repeatedly. One sees then that the patient's attention is diverted by a longer closing of the eyes, and that no swaying arises. Bárány has repeatedly succeeded in demonstrating neurotic disturbances of equilibrium in this simple manner. Cerebellar disturbances of equilibrium manifest themselves frequently in that the tendency to fall takes place in limited regions of the body, and in that the trunk and limbs do not work together in unison (*asynergie cérébelleuse*, Babinski). Further, tremor of the entire body frequently occurs in these patients. Testing the falling reaction in accident cases often presents difficulties in that neurotic stigmata may be mixed with cerebellar stigmata.

PROGNOSIS OF CEREBELLAR ABSCESS.

If a cerebellar abscess remains unoperated upon, there results either a rupture into the intradural space or into the fourth ventricle. In either case, death follows from suppurative meningitis. If a labyrinthine suppuration is also present, and this is the case in about eighty-five per cent. of all cerebellar abscesses occurring as a complication of chronic middle ear suppuration, then the general symptoms of diffuse labyrinthine disease, that is, attacks of labyrinthine dizziness, vomiting, disturbances of equilibrium, spontaneous nystagmus, or fistula symptom, etc., are either to be determined from the history or from examination of the patient.

The following case illustrates the sequence of suppurative labyrinthitis, suppurative meningitis, and cerebellar abscess:

Case 1. Patient, male, 40 years, admitted to the Medical Department, Vienna, July 21, 1910. History: Always well. For ten years, discharge from the right ear, said to be due to damp dwelling. At times the discharge ceased. For about eight years he suffered repeatedly from dizziness, but no headache until about eight days before admission, when the headache was particularly severe. Three days before admission he vomited once and was troubled with dizziness for three or four days.

Examination. Right ear, drum membrane about normal. Right ear, sinking of the posterior wall; thick pus in the middle ear. Left ear, drum membrane normal. Test for labyrinthine disease with Bárány's noise apparatus. Caloric reaction about normal. Turning reaction not possible (patient too ill).

Course. Pain upon movement of the head, no vomiting. Right facial paralysis demonstrated by the Hering test. The patient remained in bed and received no special treatment. On October 1st, the patient died.

Autopsy. The patient died of a cerebellar abscess, which had ruptured into the fourth ventricle, causing suppurative meningitis.

flexes also. No clonus; no Babinski; temperature 38.5° C.; pulse 76. No difference in sensibility; sensorium slightly dull. Kernig present on both sides. Dermographia. Eyegrounds normal.

July 31st, the operation by Doctor Rutin (right ear), began with typical skin incision and showed the bone to be sclerotic, the antrum filled with a yellowish cholesteatoma about the size of a hazel nut, which had partly destroyed the posterior canal wall. In the horizontal semicircular canal there was a fistula about the size of a hemp seed filled with a grayish red granulation. The facial nerve was completely exposed in its entire horizontal and descending portion. The oval window was empty. In the labyrinth operation, the dura of the posterior fossa was laid free by means of the chisel. The labyrinth probe passed through without difficulty. The promontory was chiseled off. No fluid was present. Temporary dressing was applied. Lumbar puncture showed completely cloudy fluid. Removal of the temporary dressing followed and incision of the dura in the posterior fossa, from the labyrinth to the sinus. The dura was normal, but thin in the region of the saccus endolymphaticus. Exposure of the dura in the middle fossa showed it to be normal.

August 1st. Rotary nystagmus to left; headache; sensorium clear; no fever; no dizziness.

August 2d. Headache; nystagmus same; no dizziness. August 3d to 5th. General condition better; left rotary nystagmus weaker; pulse 56; no fever.

August 6th. No nystagmus; pulse 84; no headache for two days. Felt comfortable but weak. Pupils dilated; reacted to light and accommodation; left better than the right. Almost complete facial paralysis, right. No disturbances of sensibility; other brain nerves normal; eye muscles normal; no sign of stiff neck; dermographia present; no Kernig. Patient sat up with support. Ataxia in both upper extremities; no ataxia in lower extremities; abdominal, patellar, and Achilles reflexes normal; no Babinski; leg muscles not sensitive to pressure; no dizziness; dressing was changed and wound opened. Beautiful granulation upon the dura of the posterior fossa. Incision not visible, but some pus in the posterior part of the labyrinth.

August 10th. To-day severe pains in the back of the head; pupils normal and reacting well; nystagmus, right and also left rotary. The nystagmus toward the left, which had almost disappeared since the labyrinth operation, had again increased. Apathy; pulse 60; patient was weak; bedridden; neck not stiff and not painful to passive movement. No dizziness; dorsal decubitus. The diagnosis of cerebellar abscess was made and the patient was sent to the operating room at 8 o'clock in the evening. Dressing changed without narcosis. Incision into the dura of the posterior fossa at the site of the previous incision. Three incisions into the cerebellum negative. A fourth incision with a broad curved knife behind the sinus produced several drachms of thick, not fetid pus. Drainage with a curved cannula held in position by sutures.

August 11th. Condition improved. No nystagmus; no headache; dressing changed; some pus upon resection of a long probe, curved drain. On the same day report from the pathologist: "No pus cells, no bacteria demonstrable. The solid part consists of granular detritus."

August 12th. Dressing changed; no pus, but the abscess cavity still very deep; curved drain; other wounds very pretty. Nystagmus, left rotary, greater than right. No dizziness; no headache; head movements free; nerves normal.

August 13th. Same condition. Dressing changed. No pus; abscess cavity deep. Left rotary nystagmus greater than right. No dizziness; no headache.

August 15th. Dressing changed; exploration with forceps, no pus, abscess cavity still deep as in the beginning at least four cm. Nystagmus the same; no headache; no dizziness. Sat up alone in bed. Allowed out of bed in the air fifteen minutes for the first time.

August 16th to 18th. Dressing and drainage in the same manner. Drain removed this date. Felt well; no headache; no dizziness; no nystagmus; pulse 90. The course of the disease from the first day following the operation was completely without fever.

August 30th to October 1st. Dressed in the outpatient department.

October 4, 1910. Patient readmitted since he appeared

sick. Examination showed frontal headache; dizziness; pulse 68. Nystagmus right horizontal greater than left. Neck freely movable; pupils normal, reacted well; no ataxia; negative nerve findings except trifling hyperesthesia of the left lower extremity. No fever.

October 5th. Second operation, by Doctor Ruttin; incision into the almost healed scar. Exploration of the site of the old incision through the dura of the posterior fossa. The previous abscess appeared to be completely healed. The forceps penetrated into tissue, which seemed more resistant than brain tissue, but below this spot a large abscess holding somewhat more than a drachm of thick, yellowish green, fetid pus was found. Introduction of a drain which was held in place by a curved probe sewed in.

October 6th. Headache had not subsided; especially strong in the forehead. Nystagmus right horizontal greater than left. Dressing changed; removal of drain; no pus; introduction of wick gauze into the abscess cavity. Bacteriological findings of the abscess, pus and "a large number of bacteria with chains of cocci and anaerobic bacilli."

October 7th. Marked improvement; no headache; no nystagmus; no dizziness; pulse 68. Change of dressing every other day subsequently; fairly normal wound healing. At each dressing the abscess was explored with forceps and drained. There was always some pus present.

October 23d. Eyegrounds normal.

November 10th. Drain was taken away, since no pus had been found in the abscess cavity for several days; patient's condition good.

November 12th. Temperature 39.3° C.; pulse 104. A retention abscess was thought of, but since the patient had no headache, no nystagmus, no dizziness, no vomiting, and coughed somewhat, examination of the chest was made and led to suspicion of pneumonia.

November 13th. Chest findings on the right side below and behind, dullness for about the extent of three finger breadths; over this area marked vesicular breathing; voice fremitus somewhat increased; the left apex also involved.

November 13th to 17th. Decline of temperature by lysis. Diagnosis, bronchopneumonia. With the exception of a slight angina, the patient made an uninterrupted recovery without fever, so that he was discharged on December 21st. He still appears at the clinic from time to time and is considered completely cured.

REMARKS ON PRECEDING CASE.

The patient was admitted with symptoms of meningitis. Since the functional test showed a complete loss of function of the right labyrinth, it had to be assumed that there was present a meningitis of labyrinthine origin in the posterior fossa. The labyrinth operation was carried out, and the posterior fossa was exposed, after which lumbar puncture, performed at the same sitting, showed a purulent fluid. The dura of the posterior fossa was incised without expecting to find an abscess, since neither from the clinical symptoms nor from the relatively trifling alteration of the dura could one suspect such a condition. After the operation, strong nystagmus took place to the sound side, as we see this usually after operative extenteration of an already destroyed labyrinth. Nystagmus, however, in a short time (that is, after six days) completely disappeared. When, on the tenth day after the operation, other symptoms (occipital headache, apathy, pulse 60, and weakness) appeared, nystagmus again took place toward both sides and was especially strong toward the diseased side, one was obliged to assume the presence of cerebellar abscess, especially since suppurative meningitis had not been progressive. A fairly large abscess was found in the right cerebellum. After opening the abscess, nystagmus continued toward the sound and diseased sides, but gradually diminished, and twenty days later had completely vanished. One

month later considerable nystagmus was again present toward both sides. Since headache, dizziness, and a relatively slow pulse were present, one had to think of a retention abscess.

In the diagnosis of cerebellar abscess, only the most exact examination of the intensity, duration, direction, and relation of supposed cerebellar nystagmus to typical labyrinthine nystagmus can give a clear picture. This holds true also for other symptoms of endocranial complications. In the present case, for example, before opening the first abscess there was occipital headache, but complete absence of dizziness. After opening the second abscess, frontal headache and dizziness began, the cause of which is not readily explainable.

It is to be hoped that the study and recording of all clinical data in cases like the foregoing will lead us to more definite and exact conclusions in the preoperative stage of aural disease.

14 CENTRAL PARK WEST.

AUTOTHERAPY.*

The Natural Autogenous Toxine Complex in the Treatment of Disease.

BY CHARLES H. DUNCAN, M. D.,
New York.

The human body is a self regulating mechanism. It automatically restores normal equilibrium and cures itself of many diseases. Restoring normal conditions is the all important factor in the treatment of disease. Any severe infectious disease in which develop toxins, from which the patient suffers and tends to recover without external medication, is cured, we believe, by a process within the body known as autoinoculation, or the patient cures himself autotherapeutically.

Autotherapy, then, is self therapy. It makes little difference as far as the cure is concerned whether the toxins *escape into healthy tissues*, and by this natural means raise the power of the serum, and increase the activity of the leucocytes to overcome the invasion of microorganisms, or whether the physician places them in healthy tissues, the same reaction takes place in either instance, the disease tends to be cured with its own unchanged toxins, or the patient is autotherapeutically cured. But when the physician places the toxins in healthy tissues, he steals a march on the slower natural process of cure; he does merely what slow Nature is attempting to do, and possibly would do later on. He autoinoculates the patient before the slower natural process takes place, if it would take place, and thus cures the disease, or aborts it in its incipency. The system is not then so taxed by the toxins of the disease as it would be had the physician waited for slower autoinoculation to

*The writer is well aware that this paper contradicts much that is held to be true by those best qualified to judge in such matters. It is based on clinical experience, the court of last resort in determining questions relative to the therapeutic value of any preparation. It is not within the range of possibilities either in regard to time, means, or capacity, for any physician thoroughly to investigate all of the avenues of thought opened up in enumerating the principles of autotherapy. The best the writer can do is to point out the way that others, who have more opportunity, may take up the work along their various specialties and work out the special method for each disease along the lines suggested.

caused during the course of the disease, nor is the patient reduced by the fever. The time of the sickness is shortened, and health is preserved.

Again, in a severe infectious disease, when auto-inoculation takes place by the natural processes within the body, we believe it is because the toxins of the disease escape into the *blood stream*. Now experience in the laboratory in the preparation of antitoxines shows conclusively that more antibodies are developed when the toxins are placed in the subcutaneous tissues rather than in the blood stream, for these reasons, autotherapy, or the physician's method of assisting Nature to perform a cure, has distinct advantage over the natural processes of cure.

Autotherapy is a new method of assisting the healthy tissues in curing disease in the sense that it has never been understood and used scientifically before. The natural toxins are new weapons the writer has placed in the hands of the physician for the cure and prevention of disease. Giving them is founded on Nature's method of cure, but it is quicker in action, and develops more antibodies. It is the best method of developing active immunity or of restoring normal equilibrium.

The latent, potential energy, inherent in healthy tissues, of resisting disease, is a power that is associated with, and a part of all active, healthy, human cell life from its inception. So autotherapy, or curing disease by the power within the tissues themselves, dates back to the beginning of all organized cell life. Nature is the first autotherapist. We are all autotherapists, humiliating as it may be to acknowledge it; it is this natural autotherapy that is exploited by the time honored custom of applying hot fomentations, Bier's hyperemia treatment, etc.

Most animals assist in bringing about a natural cure by placing the exact toxins of the disease in healthy tissues, by licking their sores. The dog licks and cures his wounds. The only place he has a bad infection is on the head, where, from anatomical reasons, he cannot lick.

The opsonic index is raised when the staphylococcus or streptococcus from a purulent infection is placed in the mouth. The skin is one of the sewers of the body, and it is through the skin that the toxins of many internal diseases are often eliminated. In diseases away from (and unassociated, or unconnected in any way with) the alimentary canal, placing the toxins on the tongue is placing them in healthy tissues away from the seat of the disease. The healthy tissues resist these toxins, as they tend to resist a sublethal dose of any toxine, the formation of antibodies that are exactly antagonistic to the toxine resulting. The antibodies to the toxins of bacterial skin lesions are the specific antibodies to the disease.

Autotherapy is the modern interpretation and acceptance of many ancient medical sayings, such as "the hair of the dog will cure mad dog bite"; "snake bile will cure snake bite"; "the oil in which the scorpion has been killed will cure scorpion bite", and many more of the same kind. Cure of disease with its own poison (or the substance that caused the symptoms of the disease) has been mentioned by medical writers of all ages. The sporadic

cure made by these pioneers in medicine have blazed the way for a fuller understanding. Briefly stated, the principle on which autotherapeutic cures are made is as follows: The tissues tend to eliminate the toxins of a disease in the pathological discharges. The physician separates the toxins in the discharge from the extraneous matter and places them in healthy tissues. The healthy tissues react against these toxins. The resistance they develop to these toxins is directly antagonistic to them and to the disease. The physician mechanically separates, or filters out the toxins from the end product of the disease, and injects them hypodermically, with this object in view. The Berkefeld filter strains out the toxins from the microorganisms and extraneous matter, and without in any way changing their therapeutic value.

GENERAL RULE FOR AUTOTHERAPY.

When the pathological exudate or the end product (or a dilution of the same) of any localized, loosely localized, and possibly nonlocalized infectious disease is filtered with a Berkefeld filter and the filtrate injected hypodermically, or placed in healthy tissues, antibodies specifically corresponding to the disease will tend to be developed.

A corollary to this general rule is: *In extraalimentary and extrapulmonary diseases, if the crude pathological end products are placed in the mouth specific resistance to the disease will tend to be developed.* The live pathological, causative, and complicating microorganisms appear to be especially prompt and curative when given in this manner.

Physicians have given almost everything under the heavens to cure disease. But the writer was the first successfully to employ live causative, pathogenic microorganisms as a therapeutic agent. It is not the microorganisms *per se*, but the fresh nascent, bacterial toxins with the associated tissue toxins that are most curative.

About twelve months ago the writer made a preliminary report of cures of sepsis by this new method. (See *Medical Record*, September 10, 1911; *Lancet-Clinic*, November 4, 1911, and nine other medical papers.) These articles have been abstracted and copied by many other medical papers on the continent of Europe and in America. Since then he has received voluntary testimonials from many independent physicians from all parts of the United States, who are using autotherapy successfully in their practice. These testimonials offer a preponderance of clinical evidence that it is one of the best therapeutic agents we have at our disposal for treating many infectious diseases.

Autotherapy offers a virgin and practically untrodden field for therapeutic investigation. The serious nature of many diseases that have been cured by autotherapy is not disputed. Progressive results may confidently be prophesied in the treatment of many infectious diseases by employing its principles. Just how many diseases in which it eventually will be proved to be useful, clinical experience and laboratory tests alone will tell. Nobody who has conscientiously tried autotherapy in severe infectious diseases now doubts its great therapeutic value. Autotherapy is not a cure all, neither is any other therapy. We shall take up the

diseases cured by autotherapy in the chronological order of their development.

In purulent infections it is especially prompt and curative in the *early* and *later* stages of the infection. The technique of its application during the intermediate stage is not so simple. Often the minimum dose must be employed if the best results are to be obtained.

TREATMENT OF FRESH WOUNDS.

If a fresh wound is placed in the mouth, purulent infection will be aborted, and there appears to be good clinical evidence that tetanus and hydrophobia may be aborted in the same way. (See *Lancet-Clinic*, November 4, 1911.) If the discharge from a fresh wound is placed in the mouth, the wound will usually heal by first intention, and there will be no further trouble of any kind.

The writer would suggest that the following technique be employed for all fresh wounds suspected of being septic. This is especially applicable to the treatment of compound fractures.

Dress the wound daily for six days. At every dressing cut out about a square inch of the stained gauze immediately over the wound, place it in a four ounce bottle, shake it well, and give a teaspoonful of the decanted mixture by the mouth every four hours. Rarely will a wound become purulent under this treatment. The first inoculating or parent microorganisms are usually comparatively few in number; they must multiply extensively before pus can be seen. By following the procedure outlined above, we may abort the infection or cure it in its incipency.

Too often we hear of surgeons or physicians infecting their hands during an operation, and dying of sepsis. If the physician will remember then and there to suck the wound, and suck it afterward whenever there is irritation in it, there will be no more deaths from this cause. For the wound will heal by first intention.

In punctured and gunshot wounds, where foreign material, as cloth, wood, etc., are driven into the tissues, if the material is removed before antiseptics are applied, and placed in the patient's mouth after he has come out of the anesthesia, there will, in all probability, be placed in the mouth some of the microorganisms that entered the wound, and we know when this occurs there will be a tendency to prevent infection. This is applicable especially to wounds of the brain and lungs, for here infection usually means death.

Upon investigation the writer finds the dog catchers are conscientious in sucking their wounds from dogs' teeth, and they never have purulent infection, tetanus, or hydrophobia follow their injuries. The hands of many of them resemble nutmeg graters, due to old scars resulting from the bites of animals.

PURULENT INFECTION.

For the detailed technique for treating purulent infections see *Medical Record*, September 16, 1911. In the later stage of the disease, when the area of infection is well walled off, placing a drop or two of crude pus in the mouth every hour, till three doses are taken, is especially prompt and curative. It may be given in a little water or on sugar. This is applicable to boils, abscesses, furuncles, pus-

tular acne, and to many of the large class of diseases of the so called furuncle group, etc. The most remarkable cures the writer has ever seen have been of advanced cases of sepsis.

In one of the large emergency hospitals in New York, where the writer is operating surgeon, abundant opportunity for proving the therapeutic effect of the foregoing has been afforded. It is distinctly contrary to all modern methods of wound treatment, and yet wounds usually do become free from pus quickly by this method.

The autotherapeutic treatment of wounds is not recommended to the exclusion of the aseptic treatment; asepsis is ideal and should be used where possible. It is merely an additional, simple, and effective safeguard the writer has placed at the surgeon's disposal.

PUERPERAL SEPSIS.

The writer has the record of a number of cases of puerperal sepsis, and of septic abortions cured by this method, both by himself, and by other physicians who are interested in the development of this new therapy. The technique the writer has employed successfully in treating such cases is as follows: When the temperature rises, the abdomen becomes tender, and the discharge becomes foul smelling, face red, etc., cut out about a square inch of that part of the vulva pad that is most stained. Place it in a four ounce bottle of water and shake well. Of this give the patient a teaspoonful (of the decanted solution) every four hours for four doses, then stop. The temperature dropped in from twenty-four to forty-eight hours in several cases where it was tried. The writer has had no failures where this technique was employed. Be sure the temperature does not result from trauma or shock.

Lightning seldom strikes where it is expected. The veterinary surgeons of New York and New Jersey have taken up autotherapy with unexpected enthusiasm and vigor. The writer read a paper on autotherapy during the summer before the Kings County, and New Jersey and New York State, Veterinary Medical Associations. At these meetings papers were read on the subject of autotherapy and many cures of many diseases were reported by members of these animals' societies.¹ One of these papers by Doctor Mangan, a veterinary surgeon connected with the street cleaning department of New York city, was published in the *Veterinary Review* for July, 1912, their official publication.

At these meetings many veterinary surgeons said they were using autotherapy successfully in their practice. All were enthusiastic over the results; one had cured twenty animals by means of autotherapy, many of which were otherwise incurable. Several reported they had cured diseases that are peculiar to horses by employing autotherapeutic methods alone. Among the diseases reported to have been cured are distemper, purpura, strangles, pneumonia, purulent infections, abscesses, old sinuses, etc. The veterinary surgeons have not been slow in recognizing that here is a new therapeutic agent for many diseases—the autogenous toxins; and a new, prophylactic immunizing agent—the

¹Our best information concerning the therapeutic value of many biological agents have come from animal experimentation. The veterinarians have the advantage of us in that they can be more free in the application of the tests; so far they are unanimous in vouching for the specificity of autotherapy.

heterogenous natural toxins—of the greatest value. The cure of many of these severe and otherwise in-curable diseases in animals cannot be attributed to vaccination, hypodermic or any other extraneous cause.

All of the diseases mentioned as cured by placing the crude discharge in the mouth, may be cured by the other general and more elegant autotherapeutic method of filtering the discharge or a dilution of the discharge disease and injecting it hypodermically. The method of treating gonorrhea comes under this heading.

GONORRHEA.

The efforts of many investigators in biological therapeutics to find a specific for acute gonorrhea have not been successful. The writer uses autotherapy successfully in the treatment of this disease. The technique consists in irrigating the urethra with about an ounce of distilled water. This is placed in a well corked bottle and well shaken. It is allowed to stand for twelve hours with occasional shaking. It is then passed through the Berkefeld filter and about twenty minims are injected hypodermically. This is repeated daily. A fresh supply for each injection should always be made. Rarely will the discharge continue longer than ten days and it will often cease within three or five days. The acute inflammation will often subside in twenty-four hours. If given early enough it will abort the disease. I have stopped the discharge in many instances, when the treatment was begun early, in three days. If the physician gives the gonorrheal toxins obtained from the infecting consort near the time of coition, gonorrhea will be aborted. In gonorrheal urethritis the filtered toxins may be given by the mouth with equally good results, ten drops of the filtered toxins every four hours.

In gonorrheal ophthalmia the toxins must not be placed in the mouth, for the eye drains into the nose and throat and these tissues are involved. The discharge must always be placed in healthy tissues. In gonorrheal ophthalmia the eye should be washed out with distilled water. This is placed in a well stoppered bottle, shaken well, and allowed to stand for twelve hours before filtering to dissolve out the soluble toxins. It is then filtered and about ten minims are injected hypodermically. This should be done at least once daily. When the reaction sets in stop medication for forty-eight hours.

If there are any contraindications for the use of other medication in connection with the toxins, the writer does not know them.

It may be well to pause here and state in order that it may not be overlooked that in treating diseases pathogenetically the writer does not recommend using the toxin complex to the exclusion of other therapeutic measures of known value. Although in his best cases he depended solely on the autogenous toxin complex to the exclusion of any other medication. The writer diagnosed most of his cases with the microscope; Dr. Henry T. Brooks, of New York, has diagnosed several

origin, such as diabetes, rheumatism, some forms of pancreatic, hepatic, pelvic, intestinal, and even some forms of mental diseases for the development of specific discharges or toxins to be used in the treatment of these diseases.

An artificial point of least resistance for such a purpose has never been previously suggested. A point of least resistance would tend to attract the bacteria from internal, inaccessible parts to the sterile, superficial area, where we should often be able to obtain them, and therefore be able to cure by re-inoculating as already described. The writer asked Dr. Henry T. Brooks, former pathologist of the Post-Graduate Medical College and Hospital of New York, if he thought there would be any efficacy in this proceeding. His answer was "undoubtedly."

SKIN LESIONS.

Whenever there is a skin lesion, either idiopathic or traumatic, it should be treated autotherapeutically, that is, either the discharge or the excretions from such lesion should be placed in the mouth, or the filtrate injected in the manner already described. Calcification of the arteries, hardening of nerve tissue, etc., are now regarded as the effect of a chronic toxemia. Putrefaction is generally supposed to be due to putrefactive bacteria. Ptomaines and other toxins are often the direct or indirect result of one or more of a vast number of microorganisms. The healthy tissues react against the tissue toxins as well as against the bacterial toxins. As the horse tends to build up a high resistance to toxins by having them placed in healthy tissues, so the comparatively healthy tissues tend to build up a resistance to the toxins of a disease from which the patient suffers. By building up a resistance to the toxins of the disease, we build up the resistance to the disease.

Hunt diligently for eruptions, or skin lesions, or pathological discharges of the body with this object in view, and the results will often repay you for the labor involved. These are often the attempts of the tissues to rid the body of the toxins and microorganisms within, or an external manifestation of an internal trouble. If the skin lesion is local in character, placing the discharge in the mouth will often tend to cure it.²

Altman has made mention of his work of seventy-eight different forms of cutaneous bacteria, of which number fifty-six are cocci, and we have proved when the staphylococcus and streptococcus are placed in the mouth in diseases caused by them not associated with the alimentary canal, their toxins are especially prompt and curative.

Some of the most common and stubborn skin affections are known to be due to these cocci, as furuncles, carbuncles, impetigo contagiosum, coccigenous sycosis, pemphigus, erysipelas, and some forms of eczema, etc. The writer has cured certain forms of these diseases, and sees no reason why the other forms due to other microorganisms may not be cured by the following technique.

If it is not possible to obtain enough of the discharge for medicinal purposes, there are two methods for obtaining it, although each disease should be studied by itself with this end in view. We may

²There may be occasions when this method should be used, but the writer does not know them, except in such cases.

A POINT OF LEAST RESISTANCE

In the *Lancet-Clinic* from November 4, 1911, the writer recommends making an artificial point of least resistance for such diseases as are known to be toxic in character and possibly due to bacterial

at times grow a culture of the offending microorganism from the patient's own blood, oxalated or not to suit the individual needs. When this is done the culture should be mixed with sterile water in a bottle, let stand for twelve hours with occasional shaking, and given by the mouth, or filtered in the manner already suggested and given hypodermically. This is distinctly an autotherapeutic proceeding. The power of the serum is usually low to this microorganism, and for this reason the patient's own blood is often an ideal culture medium, and the only wonder is this inexpensive good medium was never employed before for autotherapeutic purposes.

Another method that may occasionally be employed is to place over the lesion a piece of sterile, absorbent cotton every day till sufficient of the excretion has soaked into it. Then place the collection of these small pieces of cotton in a two ounce bottle of distilled water, shake well, and allow to stand for a few hours, then either filter with gauze and give by the mouth, or pass through the Berkfield filter and inject hypodermically. Preserve and save some of this for a slight return of the trouble.

CASE. The writer cured a skin lesion on the back of both hands of ten years' duration in two weeks by having the patient lick and suck it every time it itched or felt irritated. It very closely resembled the dermochromes of Lupus erythematosus, as shown in the work of Jacoby and Pringle, but it was much more extensive. The back of both hands from the tips of the fingers to the middle of the forearms were covered with crusts. The skin was cracked, red, and itched and burned. The only relief the woman was able to obtain was by keeping the eruption greased. She could scarcely close the hands on account of the pain. It interfered with her housework, and the patient had become discouraged with previous treatment, and it was only after she had seen a severe case of pustular acne in an acquaintance cured by autotherapy by the writer that she applied for treatment.

Original and ingenious schemes may often have to be employed in obtaining the causative microorganisms in the various diseases. A novel means to this end was employed successfully in one case of incipient pulmonary tuberculosis with dry cough, and no sputum. Emetic doses of apomorphine were followed by bronchial congestion, and the development of sufficient sputum for use in the manner described.

Care must be exercised in the selection and management of these cases that harmful results do not follow. The cause of certain failures in the use of this method is due, the writer believes, to a general constitutional negative phase. Under such circumstances the minimum dose of Pasteur should be utilized. An artificial point of least resistance may be made by a subcutaneous stitch, the actual cautery, or possibly by injecting twenty minims of chinolol one half of one per cent. Rigid aseptic technique should be employed in developing the point of least resistance.

Now in regard to the repetition of the dose. Diligent inquiry among intelligent patients has elicited the fact that when another dose is required, there is usually an indication for it in the affected part. It feels irritated. There is a sensation of unpleasantness in it. The mind is directed to it, and then if another dose is given, this irritation is soon relieved.

Many deep and severe wounds, even in the joints, wounds from fish knives, and bites from animals,

when placed in the mouth and sucked at once after the accident, will result in healing by first intention. There never need be any cause for worryment on account of a wound becoming septic when treated in this manner, for when it is placed in the mouth, it will heal either by first intention, or by granulation if there is no apposition of the skin edges.

Biological investigators have never fully grasped the important fact that the unmodified substance that causes the symptoms of a disease can often be utilized to cure that disease, even though they recognize that this is the way a natural or spontaneous cure is brought about, in infectious diseases. Bacteriologists have been mainly working with the body of the bacteria, or their toxins, artificially elaborated, with the object of removing, or reducing the toxic element, and preserving the therapeutic properties. They have utterly failed to grasp the idea that *the toxic element developed during the course of a disease is the substance that causes the symptoms of the disease*, and that if these combined toxins are placed in healthy tissues, the tissues will tend to react to them, and that this reaction is the specific reaction to the disease. If autogenous toxins are too toxic, diluting them properly reduces their toxicity, but does not destroy their therapeutic effect.

WRIGHT'S VACCINES.

Sir Almroth E. Wright was the first of modern biological investigators imperfectly to grasp the idea of the great therapeutic value of the autogenous vaccines (or a substance that caused the symptoms of the disease), but Wright lowered the therapeutic value of his autogenous vaccines from being a part of the exact remedy (the exact remedy for a disease is the toxine complex of that disease), by the elaborate process which it undergoes during its preparation. Its therapeutic value is lowered, first, by heat; second, by being grown in a foreign culture medium; third, by being grown outside the body tissues; fourth, by time; fifth, by being grown under entirely different conditions; sixth, his autogenous vaccines do not include the tissue toxins that correspond to each bacterial toxine; seventh, nor do they include the toxins of the other microorganisms that frequently complicate severe infections. He explicitly states in the opening paragraph, describing this method: "Isolate in culture media the causative microorganism." Eighth, Sir Almroth is not always certain that the right microorganism is isolated. For these and many other reasons that will be pointed out later, a vaccine made according to his method is of altered or lowered therapeutic value compared to the autogenous toxins mentioned in this paper.³ It has remained for autotherapy to grasp, elucidate, and utilize the important truth contained in the statement that *the natural curative reaction of a disease, is the reaction against the exact toxins developed in that individual patient, or, the reaction against the toxic complex*. The writer was the first to perfect the principles that underlie the cures made by autotherapy, and by so doing he has placed it on a firm, scientific basis. Within wide limits it may be

³The theory advanced by the writer regarding cures made by autotherapy receives a little support in the able and exhaustive work on *The Pathology of Immunity*, by Dr. Conrad S. Hodgson, in the Croonian Lectures for 1912, delivered before the Royal Society of Surgeons.—*Lancet*, June 15, 22, 29, and July 6, 1912.

said, the toxine is the cause, the complaint, and the cure of disease. Rill developed the doctrine of agglutinins, and showed that in every infected area there are causative microorganisms and their toxins, and that there are also tissue toxins that correspond to each bacterial toxine, such as enzymes, ferments, and toxic results of chemical changes in the protoplasmic molecules, and he further showed that the pathogenic activity of a bacterial toxine is intensified *when in the presence of its corresponding tissue toxins*, and that it is the tissue toxins that cause wound fever in clean wounds. In other words, *healthy tissues react against tissue toxins, as well as against bacterial toxins*. His work was a laboratory determination, and was not employed for therapeutic purposes, in the manner suggested by the writer.

It is the bacterial *toxins* and not the bacteria *per se* that causes a curative reaction in the tissues.

When a sublethal dose of a toxic substance is introduced into healthy tissues, the tissues tend to develop resistance that is specific, or exactly antagonistic to it. If the toxins are the toxic waste products of a disease from which the patient suffers, the tissues, in developing specific resistance to them, develop specific resistance to the disease. No other toxic substance is the exact substance that *causes the symptoms* from which the patient suffers, so the reaction against any other toxic substance will not be the exact reaction to the disease. And for this reason, it cannot be the ideal curative agent.

In the laboratory we prove our toxins on the guineapig, and symptoms are the result. We introduce toxins of disease into the horse, and symptoms or a proving of these toxins, and resistance to, or antitoxines of these toxins are the result. Disease may be said to be the proving of one or more toxins, or the language of, or the manifestations of toxins. Symptoms are the expression of the action of these toxins on certain tissues. The cure of disease is brought about by placing the exact toxins that cause the symptoms in healthy tissues.

There is no certainty that two patients suffering with the same disease will have the same symptoms. If their symptoms are sufficiently alike, the toxins of one will tend to cure the other. If they are not sufficiently alike, the toxins of one will have no therapeutic effect whatever on the other and will tend to be harmful.

(To be concluded.)

DEFECTIVE VISION IN CHILDREN.

A Word to the Practitioner.

BY ALBERT C. SAUTTER, M. D.,
Philadelphia

The systematic examination of the eyes of school children has brought a number of practitioners to the border lines of ophthalmology, and while obviously only a superficial knowledge on the part of the examiner is required in this work, to the thinking and observing student of medicine questions must sometimes arise which seem difficult to an-

swer offhand, and if his interest has been sufficiently aroused to stimulate a search through the standard textbooks, even then he may not always be rewarded for his efforts. Textbooks are comprehensive, but they do not adapt themselves to answering briefly questions of practical interest, questions which might arise in the mind of the general practitioner who has never had the time to consider ophthalmology seriously. To such, therefore, and to the family physician whose counsel is not infrequently sought first, this paper may perhaps be of interest.

The usual causes of defective vision in the young may be considered under three headings:

1. Errors of refraction.
2. Defective vision associated with faulty position of the eye.
3. Opacities of the refractive media (generally corneal).

1. *Errors of refraction.* Most cases of impaired vision for distance in either young or old may be attributed to some error of refraction. It is beyond the purpose of this paper, however, to enter into a detailed discussion of the various types of refractive errors to which the human eye is subject. Suffice it to say, that these errors, being generally due to inherited ocular malformation, are about as numerous in children as in adults. But since the usual type of abnormal refraction is of the variety dependent upon abnormal shortness or flatness of the eye (the hyperopic or so called farsighted eye), a malformation which within certain limits may be optically corrected by an internal lenticular adjustment (accommodation), defective vision in children is of less frequent occurrence than in adults in whom this natural means of adjustment with advancing years becomes progressively less potent. When visual impairment in children is due to ametropia, it usually signifies the presence of considerable astigmatism or a nearsighted (myopic) refraction.

Astigmatism is caused by imperfect curvature of the cornea or lens, and in the great majority of cases is distinctly a congenital anomaly. Myopia, using the word in its broadest sense, occurs in this country in only about nine per cent. of cases. It is generally not present at birth, but manifests itself about the eleventh or twelfth year, and is the result of abnormal elongation of the globe. While in all eyes a certain amount of lengthening accompanies the natural growth of the eye, in only a small percentage does this extend beyond the normal dimensions, and in these eyes there is frequently an inherited predisposition to abnormal stretching of the globe. The German race is particularly liable to this form of ametropia. In rare instances myopia is attributable to increased convexity of the lens or cornea, especially of the latter.

Occasionally poor vision is found in eyes with practically normal refraction, clear media, and negative fundus findings. These eyes are congenitally deficient and there may be other signs of faulty development or of subnormal mentality. Again, defective vision may be only apparent, the result of hasty or inaccurate tests for which neither the school doctor nor the dispensary physician, with the limited time at his disposal, should be too severely

censured, though more attention to certain details is to be recommended.

To obtain the best possible vision in one of these young patients it is necessary first of all to gain the child's confidence by kindly and tactful approach. Nothing is gained by hurrying the patient. In very young children the kind of test card to be employed should be determined by bringing the patient within a few feet of the test cabinet, the mental status in each particular case being then determined by a few pertinent questions. Number cards and illiterate cards must frequently be resorted to. Bringing the little patient in close proximity with the cards inspires self confidence; memorizing of letters is impossible during the brief time required for this determination, and the reading test from the regular six metre distance then becomes an easier task and a more trustworthy test of visual acuity.

A red line just above the six metre line in use in some of our hospital dispensaries, contributes to facilitate the examination. The child is instructed to read the line of letters or symbols under the red line, and since most children have normal or nearly normal vision, the test thus becomes considerably abbreviated and the patience of the examiner is not encroached upon too much. It is an excellent plan, though not always feasible, to have some one near the card point at the letters one at a time, and often by this procedure several more lines will be read than if the child is sent adrift on its own responsibility. There are children who deliberately simulate defective sight, but these, I believe, are quite in the minority.

Regarding the testing of children wearing glasses, it should be remembered that defective vision, even with the correcting glass, does not necessarily mean a wrong correction; it may simply represent the best possible vision which can be obtained in that eye. Indeed in high grade ametropes normal acuity of vision with glasses is the exception.

Or it may happen that the vision obtained without the correcting lens, is slightly better than with the glass in front of the eye. This also does not always indicate a wrong refraction. If a binocular reading test is made in many of these cases with the same correcting lenses full normal visual acuity will be revealed. These cases belong to the hyperopic class who, in order to obtain clear distant sight with their glasses, are compelled to relax their accommodation, this relaxation being more readily accomplished when the two eyes are used simultaneously.

In high grade ametropes and in myopes asthenopic symptoms are frequently not in evidence. This is due to the fact that vision can be very little, if at all, improved by accommodation; consequently there is no incentive to constant ciliary stimulation. In low grade ametropes, on the other hand, with normal or nearly normal vision asthenopic symptoms, even in children with their powerful ciliary muscles and elastic lenses, occur with rather surprising frequency. In these cases clear vision is easily secured by accommodation, but the tonic contraction of the ciliary muscle which this necessitates may lead reflexly to eyestrain symptoms. Impairment of the general health and a nervous tem-

perament undoubtedly predispose to these symptoms.

It goes without saying that all cases of defective vision due to errors of refraction, and all cases exhibiting asthenopic symptoms, should be "refracted" with the aid of a reliable cycloplegic, preferably atropine.

It has been suggested that the general practitioner should fit himself for this work. However, I rather question the advantages accruing from such a division of labor, refraction requiring time and concentration, requirements which of necessity must often be lacking in the daily life of the average practitioner of medicine. In the refraction of children a thorough understanding of retinoscopy is *sine qua non*, and while some practitioners are privileged to master this art, I may be pardoned for venturing the belief that in the majority of instances, in spite of the best intentions, only a rudimentary working knowledge is ever obtained. Moreover, no physician who is unable to use an ophthalmoscope intelligently has the moral right to prescribe a cycloplegic. Therefore we see that comprehensive refraction, refraction of the living optical instrument, will never consist in merely trying out a certain number of lenses before the eye, but requires knowledge and experience which can be acquired only by specializing in the broadest sense of the word.

2. *Defective vision associated with faulty position of the eye.* Defective vision is the rule in squinting eyes unless the squint is an alternating one. The impairment of vision is generally pronounced, ranging from about one third of the normal to the recognition of hand movements. This visual decrease, commonly designated amblyopia, is nearly always permanent, the tendency being rather to get worse than better. While these eyes usually show a high refractive error, correcting lenses do not result in much, if any visual improvement, and the ability to read book print with such an eye is practically never obtained. It is an unfortunate complication to say the least.

High refractive errors predispose to the development of squint, especially when one eye is more affected than the other. All authorities agree as to the importance of early refraction in the successful treatment of squint cases. In hyperopes with convergent squint, the usual variety of squint, the wearing of full corrective lenses brings about relaxation of accommodation, and since the function of accommodation is so intimately related to that of convergence, a diminution in the convergence impulse follows. Refraction, therefore, aims at securing parallelism of the visual axes which favors the development of binocular vision and the prevention of an amblyopia from disuse (amblyopia ex-anopsia), squinting patients, to evade diplopia, preferring to exclude the squinting eye from the visual act by mental suppression of its retinal images.

It is unfortunately true that in a large proportion of cases which come for treatment this amblyopia is already well established, and careful questioning will elicit the statement that the squint has been present for a year or more, but that nothing was done because it was thought the child would grow out of it. It is not so difficult to straighten

eyes by operation, but to restore vision in these amblyopic eyes is usually impossible.

The younger the patient, the more favorable the prognosis. I have had little difficulty in retinoscoping and keeping glasses on children two years of age with most encouraging results. Others report favorable results in infants as young as five months. Patients should of course be kept under observation, and if glasses fail, other measures must be resorted to, to preserve, if possible, the vision in the deviating eye—either by partial or complete exclusion of the sound eye or by stimulation of the fusion sense by specially devised optical instruments.

Much has been accomplished by the general practitioner in the prevention of ophthalmia neonatorum, and while his attention has been called now and then to the evils resulting from neglected treatment of squint cases, the fact that the eyes in this class usually show no startling external changes, perhaps encourages a tendency to regard these cases less seriously, although vision in these deviated eyes is frequently much worse than in those with corneas scarred by ophthalmia neonatorum. It is indeed fortunate for the patient that only one eye suffers.

There are certain cases of squint in which the affection is congenital or secondary to congenital amblyopia, corneal scars, etc., in which refraction and appropriate ocular treatment is of little value, but this is a question for the ophthalmologist to decide.

3. *Opacities of the refractive media.* These are generally situated in the cornea, representing the scars of previous phlyctenular disease, ophthalmia neonatorum, parenchymatous keratitis, or traumatism. Circumscribed scars or macule, frequently near the limbus and often so delicate as to require oblique illumination for their demonstration, are indicative of previous phlyctenular disease. A more or less poorly defined haze in the central portion of the cornea is suggestive of a former parenchymatous keratitis, not an unusual manifestation of congenital lues, but occasionally traceable to a tuberculous infection. The so called scrofulous diathesis is considered to be at the bottom of phlyctenular inflammation. The colored eye is especially predisposed to such inflammation.

Ophthalmia neonatorum, when it does not result in complete destruction of the eye, leads to ulcerations which heal with the formation of opacities which are usually less transparent than the scars produced by phlyctenular lesions. Sometimes these opacities mark the site of ulcers which had perforated, as shown by the attachment of the iris to the cornea at this point; the pupil in these eyes being dislocated, and, instead of round, often triangularly oval in shape.

Linear or punctate scars are suggestive of traumatism. When scars occur in the pupillary region vision generally suffers, the degree of impairment depending upon the size and density of the opacity. Rays of light passing through the opaque portion of the cornea are not regularly refracted, but are scattered in all directions, just as if they originated from the opacity itself, in other words, a diffusion of the light rays ensues, and the denser the opacity, the more the resulting

diffusion. An irregular astigmatism is a frequent complication.

If astigmatism can be demonstrated, it should if possible be corrected, and sometimes vision may be considerably improved. In many cases, however, refraction is absolutely useless; and since many of these eyes look normal to the casual observer, it is not infrequent to have such cases referred to hospitals year after year for correction of defective vision. A note from the specialist to the school authorities explaining the cause of lowered vision in these cases might prove helpful for future reference.

Amongst the less common causes of defective vision may be mentioned congenital anomalies involving other ocular structures, traumatic and non-traumatic affections of the optic nerve, and internal ocular structures.

While it is important to know that other causes exist, recollection of the usual causes enumerated above will, I think, suffice to explain defective vision in the great majority of children.

1421 LOCUST STREET.

THE PROGNOSIS IN GALLSTONE DISEASE.*

BY E. MACD. STANTON, M. D.,
Schenectady, N. Y.

The study upon which this paper is based was undertaken with the idea of collecting and analyzing some of the available data which have a direct bearing on several of the unsolved questions concerning the general prognosis of gallstones as they are observed from the viewpoints of the general practitioner and the surgeon.

That we still lack a true perspective of the disease, based upon a solid foundation of reliable data, is proved by the fact that there is at present the greatest divergence of opinion among the medical profession. On the one hand we have those, including possibly the majority of general practitioners, who look upon gallstones as little more than an extremely distressing condition liable to long periods of symptomless quiescence and only seldom really endangering life. On the other hand we find many, chiefly surgeons, who consider gallstones to be one of the really dangerous diseases of the abdominal cavity.

Gallstones are of frequent enough occurrence so that it should be possible to settle by indisputable statistical facts at least the more important practical truths concerning the general prognosis of this disease. That this is not altogether possible at the present time is due largely to the prolonged course of the disease and the difficulties encountered both in the diagnosis and in the tracing of large series of cases over considerable periods of time.

FREQUENCY.

Gallstones are essentially a disease of adults and are found with increasing frequency during each succeeding decade of life. Autopsy statistics, to be of real value as an indication of the frequency of

*Read before the Rochester Academy of Medicine, Nov. 14, 1914.

gallstones in the general population, should be collected and analyzed in such a way as to show the incidence per mille in males and females during each decade of life. I am not aware of any sufficient statistics analyzed in this way, but, allowing for this defect, we have very considerable data dealing with the general frequency of gallstones.

In 19,974 autopsies reported from Erlangen and Munich,¹ there were 1,652 cases of gallstones, a frequency of 7.8 per cent. In 11,333 post mortem examinations of adult subjects at Guy's Hospital,² gallstones are recorded in only three per cent. This is the only large autopsy series with which I am familiar which shows an incidence much under seven per cent.

TABLE I.

Gallstone Pathology—Bender Laboratory Autopsies.

Total number of autopsies.....	14,607	
Number of subjects over thirty years of age.....	14,711	
	Number.	Per cent.
Total number with gallstones.....	120	..
Stones in gallbladder. No not worthy complications.....	66	55
Gallstones with complications—total cases.....	54	45
Stones with marked chronic cholecystitis.....	12	10
Suppurative cholecystitis.....	3	2.5
Cystic duct obstruction.....	10	8.3
Common duct obstruction.....	12	10
Extensive adhesions (old).....	12	10
Chronic pancreatitis.....	14	11.7
Acute pancreatitis.....	3	2.5
Pancreatic cyst.....	1	.8
Carcinoma primary in gallbladder or ducts.....	6	5

The Bender laboratory records³ show that in 1,667 autopsies performed in the vicinity of Albany, gallstones were found in 120, or 7.2 per cent. (See Table I.) Of the Bender laboratory post mortems, 1,075 were on subjects over thirty years of age, and of these 11.1 per cent. had gallstones. As the autopsies were not obtained from any particular class of patients, I believe that the Bender laboratory figures represent quite fairly the autopsy incidence of the disease in this part of the country. The average age of the gallstone cases in the Bender laboratory autopsies was fifty-six years.

Mayo,⁴ in 1,244 women operated upon for uterine myomata, found gallstones in ninety-two, or 7.1 per cent.

It was formerly thought that the stones found at autopsy had been for the most part "silent" and had produced no symptoms during life, but this is now known to be due to the fact that autopsy patients cannot relate their symptoms. In our own work we have frequently found entirely unsuspected gallstones when operating for other conditions, but on questioning the patients afterward we have never failed to elicit a clear history of gallstone symptoms definite enough to have warranted a diagnosis had the facts been ascertained before the operation. Similar observations have been made by Moynihan, Mayo, and many others.

MEDICINAL CURES.

It is a generally recognized fact that there is practically no such thing as a medicinal cure in the sense of an actual disappearance of the stones. Occasionally the stones may ulcerate their way into

an intestine, or even through the abdominal wall, to be discharged externally, but these are pathological curiosities in no way affecting the general prognosis. It is undoubtedly a fact that small stones may pass through the ducts into the intestine, but it is also undoubtedly a fact that the cases in which *all* of the stones pass in this way are so few relatively as to have no effect upon the general prognosis as regards a true cure. By a medicinal cure is meant a relatively symptomless quiescent period which may extend over a long or short period of time. Under the most favorable conditions (Carlsbad⁵) this condition of "lasting latency" is given as the result of treatment in seventy-two per cent. of the general gallstone patients. Sixty-three per cent. of common duct cases are credited as cures, but only about ten per cent. of the hydrops cases yield to the Carlsbad treatment.

The Carlsbad statistics are based upon very large series of carefully studied cases, and the reports of the different physicians at Carlsbad agree closely as to general results, but there is no doubt but that the Carlsbad statistics represent the best medical results, which are on the whole far superior to the average obtained in general practice. Furthermore, a careful analysis of the results reported from Carlsbad by Fink, Ritter, and others, leads inevitably to the conclusion that the Carlsbad physicians and the American surgeons have a widely different conception of the term, cure, as applied to gallstone disease.

MEDICAL MORTALITY.

I know of no really reliable data concerning the immediate prognosis of symptom producing gallbladder disease. Hospital statistics concerning this question are so meagre as not to be available for any reliable conclusions. From Carlsbad one may obtain an abundance of figures, which are of value largely in so far as they show how utterly worthless medical statistics may be if too literally interpreted. Thus Ritter⁶ states that among 189,765 cases treated for an average period of four weeks each, there were but eighty-nine deaths, a mortality rate of 0.046 per cent. This is really a splendid showing, for if it is literally true, then even the middle aged gallstone patients at Carlsbad must live on with a life expectancy of a little over 166 years. These figures do, however, point inevitably to the conclusion that the acute exacerbation of gallbladder disease is seldom necessarily fatal, a fact which should always be borne in mind by the surgeon when he is attempting to determine the safest and best time to operate.

Life insurance statistics give some indication of the prognosis in the class of cases which are supposed to have presented no symptoms other than one or two attacks of biliary colic, and they do show that the life expectancy is considerably impaired, even in this class of cases. Thus one company, between 1870 and 1907, had a death rate of 131 per cent. (100 per cent. normal) in "risks" insured after having had attacks of biliary or gallstone colic.

Our own histories show ninety cases seen by Dr. C. G. McMullen and myself during 1907-08-09, in

¹A. Ritter: *Münchener medizinische Wochenschrift*, liii, 2, p. 1603, 1906.

²Guy's Hospital Reports, xlix.

³For the use of the Bender Laboratory records I wish to thank Doctor Bernstein, director of the laboratory, and also my assistant, Doctor Deeds, for much of the clerical work necessary in analyzing the records.

⁴Journal of the American Medical Association, lvi, 1021-1024, 1911.

⁵F. Fink: *Berliner klinische Wochenschrift*, 42, 1905.

⁶*Münchener medizinische Wochenschrift*, lvi, 2, 1603, 1906.

which the symptoms were definite enough to warrant a diagnosis of gallstones, but which were not operated in. Of this number, six patients are subsequently known to have died medical deaths with the chief symptoms directly referable to the gallbladder region. This proportion, 6.6 per cent. of gallstone patients dying medical deaths due to gallbladder complications within three years is apparently higher than would be found in ordinary practice, but it probably approximates the medical prognosis to be expected in the class of cases seen by the surgeon in consultation. In our own experience, however, it does not represent the truth as regards the cases in which we had advised operation, because four of the deaths were in patients so old and feeble that we did not at any time consider an operation advisable.

Autopsy statistics are of value only in so far as they show the relative proportion of gallstone cases which ultimately produce conditions capable of causing death. As they include all cases, the relatively symptomless as well as those having active enough trouble to lead to a diagnosis, it is evident that active symptoms producing gallbladder disease, such as the physicians and surgeons are called upon to treat, must give an ultimate death rate due to the stones, considerably higher than that shown by autopsy statistics compiled without reference to previous clinical history.

In the 19,974 autopsies reported from Erlangen and Munich there were 1,562 cases of gallstones with sixty-two deaths due to the gallstones and their complications, excluding patients dying after operation, a medical mortality rate of four per cent.

These figures have been widely quoted, but I believe that they are distinctly misleading even as regards the data analyzed. In the first place the operative mortality was largely limited to medically hopeless cases, and it is not proper to charge all of these deaths to the operation. In the second place, these statistics cover a period when pathologists were decidedly reluctant about considering gallstones as an actual cause of death. Thus out of sixty-three patients dying with stones in the gallbladder, only five deaths are recorded as being in any way due to the gallstones, and out of thirty cases of empyema and cholangitis only eight deaths are recorded as being due to the gallstones.

Table II gives an analysis of the gallstone mortality in the Bender laboratory post mortem series. The mortality is high, but the figures probably represent approximately the truth according to our present conception of the disease. However, the average age of the patients dying as a direct result of the gallstone was over fifty-seven years, so that these figures do not prove that the gallstones greatly shortened life.

TABLE II.

Primary carcinoma of gallbladder or duct with stones	4
Gallstones apparently the fatal condition, but death directly due to other causes:	
Common duct cases	4
Hypoxia, etc., cholecystitis and pancreatitis (2)	3
Total	7
Total deaths directly or indirectly due to gallstones	26.4

Total deaths due to the gallstones.

Died after gallbladder operation, coronal lesions not stated	4
Primary carcinoma of gallbladder or duct with stones	6
Gallstones apparently the fatal condition, but death directly due to other causes:	
Common duct cases	4
Hypoxia, etc., cholecystitis and pancreatitis (2)	3
Total	7
Total deaths directly or indirectly due to gallstones	26.4

TABLE III.

Gallstone Pathology as Found at Operation in Seventy Cases.

Stones in gallbladder, no noteworthy complications	27
Op. failed in four cholecystitis only	12
Gallstones removed but not fatal associated upon at same time for other surgical conditions	15
Gallstones with secondary complications	43
Stones impacted in cystic duct	18
Chronic diffuse cholecystitis	19
Common duct stones	2
Empyema of gallbladder	11
Extensive adhesions	15
Chronic pancreatitis	5
Acute pancreatitis	2
Pancreatic cyst	1
Cholangitis-cholelithiasis	1
Carcinoma of gallbladder	1

Table II gives a synopsis of the gallstone pathology as found in the Bender laboratory post mortem examinations.

SURGICAL PATHOLOGY.

Before attempting to judge the results of surgical treatment, it is well to review briefly the pathological conditions found in the class of cases which come to operation. For this purpose I have recently analyzed the gross pathological findings in 540 operative gallstone cases—470 from the service of my former chief, Dr. A. J. Ochsner, and seventy cases operated in by my associate, Dr. C. G. McMullen, and myself in Schenectady. As the two series give parallel findings in all essential particulars and agree with the published data of other operators, I shall use our own cases as a basis for my conclusions. (See Table III.)

In twenty-seven (thirty-nine per cent.) of our operative cases the gallstones were confined to the gallbladder with no noteworthy complications due to the stones. However, it is worthy of note that fifteen of these uncomplicated gallstone patients were also suffering from other surgical conditions, so that only twelve (seventeen per cent.) of the uncomplicated gallstone cases came to us for operation solely because of the discomfort produced by the stones.

A study of the pathology and symptoms in a considerable number of operative cases has convinced the writer that it is the more or less continuous discomfort produced by the complications which really causes most patients to seek surgical relief rather than the acute attacks of gallstone colic. Unless the medical profession becomes convinced that serious complications are to be sooner or later expected in a large proportion of cases, and that these complications can be safely and surely avoided by operative interference, so that early operation is strongly urged upon the patients, gallbladder surgery must, probably, always deal largely with the complicated cases.

In both Doctor Ochsner's and our own series chronic cystic duct obstruction was the most common complication which brought the patients to operation, and this is the same class which yields the poorest results under the Carlsbad treatment. Next to cystic duct obstruction, adhesions producing more or less continuous discomfort are probably the most

potent factors in compelling patients to seek operation.

SURGICAL CURES.

Tables IV and V give a concise summary of some of the more important data concerning the end results obtained by operative treatment. The term

OPERATIVE MORTALITY.

That the operative mortality in gallbladder surgery is not necessarily high has been abundantly proved by the masters in this line of work. Mayo,⁷ in 4,000 operations, reports an average mortality of 2.75 per cent. In 2,920 the disease was local

TABLE IV—SUMMARY OF REPORTED RESULTS.

Surgeon	Date of report	Number of cases	Cured No. %	Improved No. %	Not improved No. %	Stones overlooked No. %	Secondary operations No. %	Post-operative fistula No. %	Persistent symptoms No. %	Adhesion like symptoms No. %	Stomach symptoms No. %	Recurrent calculi No. %
Taite ¹	1889	52	51 98	1 ..	..	..	..	..	1 ..	..	..	0 ..
Stones uncomplicated in gallbladder												
Kehr ²	1904	350	311 89	..	..	9 2.6	..	11 3	..	12 3.4	..	1 ..
McWilliams ³	1906	69	45 65	7 10	16 23	7 10	12 ..	6 9	7 10	4 7	4 7	1 ..
Kehr	1908	885	..	84.9	..	16	23	..	5	..	8.7	..
Munroe ⁴	1909	172	..	79	..	..	..	..	..	6	2.2	..
Ochsner-Stanton ⁵	1911	245	209 85	..	9 15	6	3 1	5 2	7 3	1 ..	10 4.2	3 1

¹Presbyterian Hospital.

TABLE V—END RESULTS—GALLSTONE CASES.⁶

Pathological Diagnosis	Total No.	Cured No.	%	Satisfactorily improved No.	%	Improved No.	%	No better No.	%
All cases	245	194	79	15	6	21	9	15	6
Stones uncomplicated in gallbladder	107	96	90	5	4.6	5	4.6	1	1
Stones in cystic duct	32	29	90	..	..	..	..	1	..
Stones in common duct	19	13	70	2	10	2	..	2	..
Stones with cholecystitis	27	23	85	2	7	1	..	1	..
Stones with empyema of gallbladder	12	12	100	..	..	..	..	..	..
Stones with chronic pancreatitis	11	10	91	..	..	..	..	..	..
Stones with extensive adhesions	19	16	84	..	..	3	..	..	..
Stones with coincident pelvic operations	42	28	66	4	10	6	15	4	10
Stones with other miscellaneous operations	16	13	81	2	..	1	..	..	..
Stones with fistula into duodenum	1	1	..	..	..	..	..	..	..
Stones with gastric ulcer	3	..	..	..	..	..	..	1	..
Stones with carcinoma of stomach	1	1	..	..	..	..	..	..	..
Stones with chronic medical complications	1	..	..	..	..	1	..	..	..
Stones overlooked	3	..	..	..	..	..	..	3	..
Cured by second operation	5	5	..	..	..	..	..	..	..

¹L. Taite: *Edinburgh Medical Journal*, xzv, 305, 1889.

²H. Kehr: *Münchener medizinische Wochenschrift*, 1904, li, 602; 1908, clv, 2073.

³C. A. McWilliams: *NEW YORK MEDICAL JOURNAL*, 1906, lxxiii, 1109.

⁴J. C. Munroe: *Boston Medical and Surgical Journal*, 1909, clx, 359.

⁵E. M. Stanton: *End Results in Gallbladder Surgery*, *Journal of the American Medical Association*, lvi, 441-444, 1911.

⁶Anatomical diagnosis at operation; stomach not operated on; results well four years later.

cure used in the surgical sense means a complete and permanent cessation of all symptoms referable to the biliary tract or region of the operative interference. A personal study of the end results in 245 operative cases has convinced me that we can safely estimate the complete cures at over eighty per cent., while the majority of the remaining patients are so greatly benefited as to be well pleased with the operative relief. In addition, I would emphasize the following points:

1. The most favorable cases in all respects are those in which the stones are still confined to the gallbladder. The results are all that could be desired in approximately ninety-five per cent. of these patients.

2. The most important principle of gallstone surgery is the complete removal of the stones, with the least possible damage to the biliary tract. Overlooked stones are probably the most important single cause of uncured patients.

3. If, as a result of the operation, all obstructions within the biliary tract are removed, a cure is almost certain to result.

4. No evidence was found in the cases studied by me to show that cholecystectomy should ever be the operation of choice in gallstone cases, unless there is chronic cystic duct obstruction, or the gallbladder is so diseased as to make a cholecystectomy technically safer and easier to perform than a cholecystostomy.

5. Every effort should be made to guard against postoperative hernia.

and confined to the gallbladder and cystic duct, with an operative mortality of 1.8 per cent. In 2,165 of these, cystostomy was performed with a mortality of 1.5 per cent. In 755 cases, cystectomy was performed with a mortality of 2.4 per cent. In 492 cases, in which the common duct was involved, the mortality was eight per cent.

That these figures represent the best rather than the average results, is shown by referring to Table VI, which shows that in thirty representative American hospitals during 1908-09, 1,051 operations resulted in eighty-seven deaths, 8.2 per cent. In twenty-five New York State hospitals during 1909-10-11, in 637 operative cases there were fifty-three deaths, a mortality of 8.3 per cent. Hospital reports have their failings, but they are the most

TABLE VI—OPERATIVE MORTALITY IN GALLBLADDER SURGERY.

Clinics	Operations	Deaths	Per cent.
St. Mary's (Mayo), 1909	589	13	2.2
St. Mary's (Mayo), 1910	654	13	1.9
Hospitals			
Thirty American, 1908, 1909	1,051	87	8.2
State Hospitals			
Twenty-five New York, 1909, 1910, 1911	637	53	8.3

reliable surgical mortality statistics that I know of, and if we combine enough of them they do show real truths. I believe that they do represent quite accurately the average as distinguished from the exceptionally good operative mortality.

There can be no doubt that eight per cent. is too high an operative mortality, and that if gallbladder surgery is to become permanently popular with the public and the general practitioners the average mortality must be reduced to at least half that

shown in Table IV. The mortality rate of the occasional operator will probably be reduced only when the public realizes that the gallbladder mortality and end results of the amateur or occasional operator are positively unpardonable. Many surgeons of recognized ability aver that their high mortality is due to the desperate cases they are called upon to treat, but a close analysis of their deaths, whenever they are reported, yields convincing proof that most of these deaths are due either to bad judgment as to the time of operation or to unnecessarily prolonged and complicated operative procedures.

SUMMARY AND CONCLUSIONS.

Gallstones are found at autopsy in approximately ten per cent. of subjects past thirty years of age, but this figure is probably too high for the earlier decades of adult life and too low for the later decades. To be of practical value as indicating the real frequency of gallstones autopsy statistics should be collected in such a way as to show their frequency in males and females during each decade of life.

Both autopsy and clinical evidence is against the assumption that gallstones are particularly dangerous as regards life except in those already enfeebled by old age.

Notwithstanding the formidable pathological changes often found at operation during the period of acute exacerbation of gallstone disease there is overwhelming clinical evidence to the effect that the acute attack is only very rarely actually dangerous. This fact should always be borne in mind by the surgeon who should strive to select the safest period for operation. Emergency operations are as a rule life saving and are not justified if a safer operation can be performed during a quiescent period.

A medical cure consists in a relatively symptomless quiescent period while by a surgical cure is meant a permanent relief from the symptoms and complications of the disease.

Surgical end results are on the whole very satisfactory—almost ideally so in the early uncomplicated cases. If the surgeon can assure a low operative mortality gallstone cases should be operated at the first safe period after the diagnosis is made.

Gallstone surgery will not become generally popular until the average operator has learned to have a really low operative mortality. At present the operative mortality in the hands of those really qualified to do this work is satisfactory but in the hands of the average operator it is entirely too high.

ALBUMIN DETERMINATION.

In the Urine in the Diagnosis of Kidney Lesions.

By W. WARREN, M. D.,

In the ordinary every day work of diagnosing kidney lesions the cystoscope is naturally used; but in a clinic as large as that of Doctor Swinburne, at the Good Samaritan Dispensary, it is not at the same time a fairly accurate method must be

employed whereby these cases can be recognized. Symptoms are of little avail. Even if the patient is of fair mental ability, it is impossible to obtain a history whereby the pathological lesion can be located even grossly.

The reflexes between the bladder and kidney are so intimately associated that disease of one may produce symptoms referable to the other. For example: The marked bladder symptoms in cases of tuberculosis of the kidney, even where the bladder shows no macroscopic lesions are well known. A case of acute inflammation of the prostate with strangury and frequency may simulate stone in the bladder. A patient with pyelonephritis came under my observation. He had been treated with bladder irrigations for a year. At operation six stones were removed from the right kidney. In this case all symptoms were referable to the bladder.

All genitourinary surgeons have had cases with pain in the right side in which a diagnosis of appendicitis had been made only to find the cause of pain to be stone in the kidney or ureter. What is easier than to test the urine for albumin (during one of these attacks of pain), and if present to examine the urine for microscopic blood?

In pyuria it is most important to know from what portion of the urinary tract the pus enters the urine. Here there are many possibilities and at times unusual conditions. The pus may originate from any part of the tract. It may, however, enter the urinary stream from some point outside the tract—as in a case observed some time ago. A cripple complained that his urine became cloudy when he lay upon his left side. Upon examination the cloudiness was found to be due to pus which entered the bladder through a sinus communicating with an abscess of an old right hip disease.

In considering cases of kidney lesions from a surgical standpoint, they may be divided into those of infection, those harboring a foreign body, or those of new growth. The first group, that of infection, is the most important, as cases of pyuria are most common. Since the time of Bright, albumin has been associated, in the minds of physicians, with lesions of the kidney. But apparently in kidney surgery little use has been made of this fact. As a rule, all cases of suspected kidney involvement are cystoscoped at once.

Of all the albumins found in urine, we are interested for practical purposes only in the serum albumin which is coagulable by heat and is indistinguishable from the albumin found in the blood plasma. Nucleoalbumin, serum globulins, albumoses, or Bence Jones bodies are of great interest, but rarely demand attention, being more functional than anatomical. The many so called causes of albuminuria will, in my opinion, as time goes on, all be explained by changes in the parenchyma of the kidney or to the presence of blood in the urine, pus exerting very little influence in this regard. As pointed out above, the albumin is probably the same in both cases, one entering the urine by means of a lesion of the vascular system, the other through changed parenchyma.

In cases of doubtful kidney lesion, where the urine is clear (that is in medical cases), or with a urine slightly turbid from blood, manifestly the albumin output is of little surgical diagnostic value.

Thus, in cases of uninfected stone or new growth of the kidney the albumin is of little diagnostic aid. But cases of kidney infection are where the albumin content plays the important rôle. It may be argued at once that as albumin is due to changes in the kidney parenchyma, why should albumin be present in cases of pyelitis? Here the same argument holds, as in all kidney lesions there is no pure type. Pure pyelitis never exists. No one holds to a pure interstitial nephritis. If the infection of a kidney is due, as a rule, to back pressure of the urinary stream, or to the presence of a foreign body, and is, in the majority of cases, hematogenous, how can the pelvis without the parenchyma be infected?

All authorities who have given serious attention to this question, agree that the ratio of albumin content to the amount of pus in the urine is the most important criterion in differential diagnosis. In cases of cystitis, where the pus sediment is several cm. high, the albumin content is never more than 0.1 to 0.15 per cent. On the other hand, if this pus is derived from an infected kidney, an amount of pus sediment in the urine only one and two mm. high will give an albumin content of from 0.1 to 0.15 and more per cent.

Thus, in cases of kidney infection where the amount of pus is minute, the albumin content is always greater than in cases of infection of the bladder, no matter how much pus there may be in the latter. This fact holds only in urine free from blood.

The following table, taken from Dr. Henry T. Brooks's book on *Clinical Microscopy*, schematically expresses the ratio of albumin to pus:

	No infection of kidney. Albumin (percentage).	Kidney infected. Albumin (percentage)
I. Maximum degree—numerous pus cells in litre glass.....	0.1	0.3
II. Moderate degree—pus sediment about 0.5 cm. high.....	0.06	0.2
III. Slight degree—pus sediment 1 to 2 mm. high.....	Just distinctly recognizable	0.1
IV. Minimum degree, recognizable almost only by microscope.....	Not recognizable	Distinctly recognizable

This table is only approximate and is of no value where blood is present in the urine; the determinations were made by Esbach. Exceptions may be taken by some to this hard and fast rule, for example, in cases of profuse purulent urethral discharge. The urine in these cases shows a high albumin content, but here, as in all acute inflammatory exudates, there is a large amount of blood which is easily recognizable under the microscope. Many similar examples can be mentioned.

In this differential diagnostic work it is of the greatest importance to examine the urine catheterized from the bladder, thus, as a rule, excluding the pus originating in the prostate and urethra. There are cases where the pus may flow back from an infected prostate through the muscle of Bell and thus enter the bladder urine. In most of these cases there is a urethral discharge which will guard against error. In our work, where urine contains pus of doubtful origin, only the urine catheterized from the bladder is examined as a routine. The importance of this is well shown in the following case:

CASE I. A patient suffered for three years with attacks of recurrent intermittent pyuria. They followed excessive activity, began with a chill and were followed by high fever. During the attacks, which lasted about a week, the patient was confined in bed. The urine voided during one of these periods was free from blood, but contained a large amount of pus. The albumin content was over 0.2 per cent. A diagnosis of kidney infection was made and cystoscopic examination advised. On introduction of the cystoscope only clear urine was drawn. Aside from congestion of the prostatic area the bladder appeared to be normal. The urine drawn from the left kidney contained casts, albumin, etc., typical of an old nephritis. The urine from the right kidney was normal. Prostatic secretion obtained by massage was filled with pus; thus the case was easily explained. The pus had entered the urine from the prostate, the albumin from an old diffuse nephritis of the left kidney.

Cases of suspected kidney infection, where the urine from the bladder contains pus, and the albumin content is too low to explain a kidney infection are met with. For example:

CASE II. A patient, forty-two years of age, had had pus in his urine since an attack of typhoid two years ago. Catheterized urine was free from blood, but contained a large amount of pus. Albumin content was very low (a minute trace with nitric acid). The cystoscopic examination showed the bladder walls to be normal in appearance, the bloodvessels easily seen, and the trigonum slightly congested. Two golf holed openings symmetrically placed in the region of the ureters were seen. Catheters were introduced their full length into each opening. Urine containing a large amount of pus, flowed in steady drops from each catheter, which gave the impression that the kidney pelvis had been catheterized. Kidney infection could not be explained with such a low albumin content. A large amount of pus with a very low albumin content pointed only to a bladder infection.

A skiagraph taken with a metal stylet placed in one of these openings, showed it to be coiled upon itself. At a later examination normal ureters with normal urine were located just about the golf holed openings. This easily explained the urinary findings; the golf holed openings were the entrance to the congenital diverticula which had been infected at the time of typhoid—and, as is known, diverticula are rarely ever freed from an infection.

CONCLUSION.

To summarize: The albumin content in its relation to the amount of pus in the urine is the greatest gross aid in diagnosing kidney infections.

The albumin content in the most marked cases of cystitis does not exceed 0.15 per cent. Therefore, in pyuria of doubtful origin, where the urine is free from blood, an albumin content of more than 0.15 per cent. in the great majority of cases shows that the kidney is involved. With a small amount of pus and an albumin content of 0.15 per cent., it can safely be assumed that the kidney is infected.

117 EAST SIXTY-SECOND STREET.

PNEUMONIA IN OPEN AIR SANATORIA.*

By HARRY LEE BARNES, M. D.,
Wallum Lake, R. I.,
Superintendent, State Sanatorium.

It has been a common belief among sanatorium physicians that croupous or lobar pneumonia occurs less frequently among tuberculous patients in open air sanatoria than among the general population. It has also been a common belief that exposure to cold

*Read before the American Climatological Association at Hartford, Conn., June 11, 1912.

at age periods which furnish only 36.6 per cent. of all cases of lobar pneumonia in the community.

The death rate from all forms of pneumonia for the registration area in 1910 was 147.7 per 100,000. As only 22.3 per cent. of the normal death rate for all forms of pneumonia occur between the ages of ten and fifty years, the sanatorium death rate for all forms of pneumonia may be estimated as 22.3 per cent. of 147.7 or 32.9 per 100,000. According to the reports received it actually was 213.51+ per 100,000. Aspiration pneumonia, following hemorrhage, unquestionably accounts for a good part of this excessive total of all forms of pneumonia in sanatoria.

SUMMARY.

1. Twenty-nine sanatoria for tuberculosis, from records equivalent to observation on 13,582 patients for one year, reported thirteen cases of croupous or lobar pneumonia with five deaths, or a mortality rate of 36.81 per 100,000 population.

2. The mortality from lobar pneumonia in the United States registration area census of 1910 was 46.37, and if allowance is made for a different age distribution in sanatoria from that of the general population, the death rate for lobar pneumonia in sanatoria should be about 16.97 per 100,000 population.

3. Thirty-eight and four tenths per cent. of the cases of lobar pneumonia ended fatally, the high mortality probably being due to preceding tuberculous disease.

4. If allowance is made for the high mortality rate of the cases, and for the underreporting of lobar pneumonia, in the census, due to "pneumonia undefined" reports, it appears likely that the incidence of lobar pneumonia is about the same in the sanatoria as in the general community.

5. The total death rate from all forms of pneumonia in sanatoria is 213.51+ instead of 32.9 per 100,000 as would be expected, the excessive death rate being largely due to aspiration pneumonia.

6. The impression that lobar pneumonia is rare in sanatoria for tuberculosis is due to the small population under observation, and to the fact that sanatorium patients are at ages which furnish but 36.6 per cent. of the lobar pneumonia cases.

7. This investigation furnishes no evidence that the incidence of lobar pneumonia is influenced by the open air life in sanatoria. Were the population of the world put on the open air régime at all times and seasons, it does not appear that the incidence of croupous or lobar pneumonia would be materially increased or diminished.

SIMPLE PERINEAL ENUCLEATION OF THE PROSTATE GLAND.

By J. M. WHITE, M. D.,
Meridian, Miss.

The method of perineal enucleation of the prostate gland has been, on account of its position for drainage, a favored operation, yet because there are difficulties in the way there have been instruments constructed to bring the prostate into reach, retractors, etc.

Most of the operations require an incision into the bladder. This helps, I think, to make this operation a grave one. Now my plan requires only

two or three instruments, a knife and a sound in the bladder. The sound being introduced into the bladder, an incision is made, beginning about one fourth inch in front of the anus, in the median line, and extending up to near the scrotum, through skin and fascia; then the knife is thrust deeply to the prostate. It is then withdrawn and the hand of the operator is well lubricated with sterile glycerin or liquid

petrolatum. His two fingers are introduced to the prostate and the wound is dilated as widely as possible by them. If need be, the tissues are in-



FIG. 1.—Schematic incision.

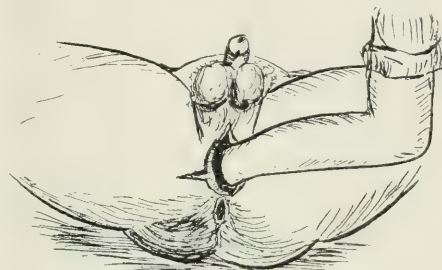


FIG. 2.—Introduction of hand of operator.

cised transversely. Then the entire hand, well anointed, is introduced into the incision. Now a knife is introduced and, guided by the fingers, two

incisions are made through the capsule anteroposteriorly on each side of the urethra. The knife being withdrawn, the finger first enucleates the middle lobe through these incisions, being careful to keep intact the urethra, then the lateral lobes are enucleated by the fingers.

The advantages of this operation are its simplicity, as it requires no instruments to bring

the prostate into reach, it needs no retractors, it is not required even to have the bladder pushed down, and, by the touch of the fingers, the urethra is kept intact.

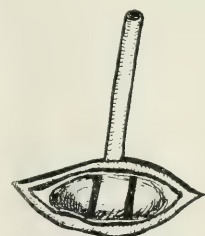


FIG. 3.—Incision made through the capsule anteroposteriorly on each side of the urethra.

Acute Follicular Tonsillitis.—For young children who have not learned to gargle, Chapin and Pisek (*Diseases of Children*) advise as a very efficient local application, to be used on a swab every two or three hours, the following:

R Tincture of iodine,miv;
Argyrol,gtt. iij;
Water, q. s. ad.3ss.

M.

Abstracts and Reviews.

SURGERY OF THE BONES AND JOINTS.

By JOHN B. MURPHY, M. D.

We may divide the subject of the surgery of the bones and joints into five groups for discussion as follows: 1. Fractures in the most dangerous positions, near joints; 2, ununited fractures; 3, the reproduction of bone; 4, the arthritides—neglected or mismanaged cases; 5, the repair of the evil results of the arthritides.

One of the commonest fractures near a joint is the Colles' fracture of the wrist. This fracture is as a general rule, fraught with evil results, owing to the failure to accomplish its reduction. Reduction is not made because the two fragments are serrated and hold one another firmly. It can be accomplished readily if the deformity is markedly increased, that is, if the fragments separated by dorsal flexion of the wrist; then by making downward traction with palmar flexion the lower fragment comes into perfect position where it will be spontaneously maintained. If the reduction is thus done and is complete, it matters not how the further treatment is carried out, for no dressing is really required, as the muscles hold the bones together and the serrations prevent their slipping. Pott's fracture is another which is not properly reduced, but the greatest source of failure is not this deficient reduction, but the lack of efficient maintenance of the position after reduction. The important feature of Pott's fracture is the rupture of the inferior tibiofibular ligament. This must heal without lengthening for lengthening results in lateral mobility of the joint with ultimate breaking of the proper support, and the patient finally comes to walk upon his internal malleolus. Proper reduction is to be accomplished by overreduction of the fracture and its fixation with the foot in the extreme position of abduction. When the fracture is complicated by a fracture of the tibia and the distal end of the tibia there is a luxation of the foot backward. Reduction by traction of the foot forward is impossible, but if the deformity is increased by plantar flexion of the foot, the upper surface of the astragalus becomes a skidway and the foot will readily slide forward into position. Further reduction of the Pott's fracture is the same as has been described. The foot is to be fixed in supreme adduction and flexed plantarily, to an acute angle with the leg.

Impacted fractures of the tuberosities of the tibia must be treated by converting them into comminuted fractures, and fixing the leg in a position of abduction or adduction, as the case may be, depending upon which tuberosity is injured.

There are three factors which introduce difficulties into the treatment of fractures of the neck of the femur. They are: 1. The difficulty of securing immobilization; 2, the interposition of the joint capsule, or of some other soft structure between the fragments; 3, the possibility of absorption of the

neck. The first can be overcome only by mechanical means through an open operation. The second also requires an open operation. The third cannot be foretold except by radiographical observation. When, if the fracture is near to the head, absorption is likely, while if it is near to the shaft of the bone such a result will not follow. The occurrence of absorption can be obviated by open operation, also by fixation of the small fragment to the large after the freshening of the ends of both so as to bring the small bone into contact with living osteogenetic tissue. If this is done recovery will be perfect. The fragment will be absorbed when the fracture is near the head because the blood supply is thus cut off, for it is to be remembered that the vessels which nourish the bone pass down into the neck and then turn back toward the head to supply it. In fractures of the neck of the femur the legs must be put up in "superlative double abduction," by which it is meant that both lower extremities are to be abducted as far as possible, and thus fixed. It is impossible to abduct one leg and maintain it in this position.

In the regeneration or transplantation of bone there are two points which it is essential to observe. First, the operation must be absolutely aseptic, and cannot be done in an area of inflammation. Second, the fragment to be regenerated, or the transplant, must be brought into intimate contact at some one point with freshened living bone to supply the osteogenetic properties. Transplants and separated fragments ultimately become totally replaced by new bone which follows in along the old Haversian canals. Osteogenesis will fail unless contact is had with living bone!

We may make use of the ability to replace bone for the following purposes: 1. To replace dead bone; 2, to replace bone diseased, but by a non-malignant process; 3, to restore bone destroyed by infectious processes; 4, to replace bone removed for malignant growth. In all these conditions, it is best, wherever possible, to preserve the original periosteum of the diseased or removed bone. If this is done the new bone which follows along the transplant will ultimately grow to assume the form of the original normal bone which it was intended to replace. Subsequent to the restoration of bone by implantation it is both possible and advantageous properly to implant the muscles of the part into the new bone.

Passing on to the discussion of the arthritides, there is a strange difficulty in getting the average surgeon or physician to accept the view that every nontraumatic joint inflammation is a metastatic process. The common acute arthritis called rheumatism is metastatic just as much as is a pyemic joint. The reason for the failure of this idea to gain acceptance is, that in the case of rheumatism the primary focus of infection may not be observed, or it may have disappeared prior to the development of the arthritis. There is a curious inconsistency in the fact that if there develops an acute joint inflammation without a chill it is called "rheumatism," if it comes on with a chill it is "pyemia." The inflammatory process is found in one of two regions in the joint, either in the synovial membrane itself or in the ends of the bones. This is the reason

for the inability to obtain the organisms in cultures taken from the joint fluid, even where pus is present.

The development of the joint metastasis never occurs at once after the primary infection, but always requires a period of incubation. In the case of the gonococcus this is from eighteen to twenty-two days, the streptococcus of grippe from eleven to thirteen days, for typhoid eighteen days or more, and in other infections the time is constant for each variety of infection.

The treatment of these acute metastatic joint infections, with pus development, must be immediate and thorough if the joint is to be preserved as a motile structure. The infection and destruction of the synovial membrane may develop in the short time of twenty-four hours to such an extent that the resulting healing will lead to complete ankylosis. Not only does the inflammatory process itself destroy the membrane, but the pressure within the joint hastens this process to a very great extent. Hence the treatment must follow two lines, the tension must be reduced and kept low, and the infection must be attacked. The first is best accomplished by aspiration of the joint. This is adopted rather than incision, for if the synovial surface is exposed to the drying action of the air for more than a few minutes there results a destruction of the membrane which leads to ankylosis. In some instances it may become necessary to incise the joint and wash it out, in which case the joint must be closed completely and without a drain, if it is to be saved. Following the aspiration the cavity should be injected with a five per cent. solution of carbolic acid, iodine in one to 1,000 solution, or better a solution of formaldehyde, two per cent. in glycerin. Both aspiration and injection may have to be repeated several times. In all treatment of these acute joint infections the position of the joint must be carefully maintained so that should ankylosis result the limb will be useful and the deformity the least possible. The surgeon may not be able to prevent ankylosis, but he most certainly can prevent deformity, and for this he must be held absolutely responsible.

The directions for the treatment of acute joint inflammations of metastatic origin may be thus summarized: 1. Act at the earliest possible moment; 2. relieve the tension; 3. sterilize the joint, or increase the leucocytosis; 4. prevent deformity by the maintenance of proper position.

A DESCRIPTION OF THE ENTEROPTIC WOMAN.*

By RICHARD R. SMITH, M. D.,
Grand Rapids.

We may divide women presenting the condition known as enteroptosis into two distinct groups from an etiological and therapeutical point of view. The first is the acquired type. In this the patient will be found to have been robust and well nourished in early life and to have presented no ab-

normities of muscular development. Through the action of one or more factors, usually a combination of several, in her, however, has developed more or less marked enteroptosis. The factors which most frequently lead to the development of such a condition are marriage at a very early age, frequent child bearing, long hours of confining, laborious work, confinement to the house, deficient nutrition through insufficient food, and constipation. The second class may be termed the congenital, though this term does not accurately apply, for these cases are not strictly congenital, but rather developmental, the condition being acquired during the formative years, prior to and during the age of puberty. These women will usually give a history of prolonged early underfeeding coupled with deficient hygienic surroundings. These two factors are sufficient to bring about a marked deficiency in the muscular development of the person, which, in turn, leads to the development of enteroptosis from want of support.

While the first class of women started life well developed, the progress of the disease brings about a marked alteration in stature and appearance; particularly is this marked in the more advanced stages. The patient in the advanced stage presents obvious signs of loss of considerable adipose tissue; the muscles are weak, flabby, and lax; she is round shouldered, and her thorax is long with a narrow costal angle; the lower portion of her abdomen is more or less prominent. These women are usually pale and anemic.

The second class includes the tall, slender women who, as girls, were slender and much taller for their years than other girls, also considerably under weight while young. In them the features mentioned above are more pronounced, the round shoulders and narrow costal angle are extreme, the ribs run nearly vertically, the lower aperture of the thorax is very small, the lumbar spinal curve becomes almost obliterated, the extremities are disproportionately long, and, when puberty arrives, the widening of the hips is accompanied by a striking appearance of narrowing of the waist. In the adult woman of this type the muscles are all extremely lax and the lower portion of the abdomen is very prominent.

Some of the patients belonging to the first class are so far affected in the development of the condition that they cannot be distinguished from the worst examples of the second group. There is a great difference, however, in that the members of the latter class have nothing to build upon, while those belonging to the first class may rapidly regain much of their former good health, with improvement in general physical condition and in stature, under proper treatment.

The subjective symptoms are so well known that it will not be necessary to discuss them. It may be remarked, however, that mere loss of support of the intestines, or of portions of the intestine and stomach, is insufficient to account for all of these symptoms. Much is due to the absorption of the toxic products which are retained on account of the stasis produced in the intestinal passage of the food materials. Direct traction by heavy, overloaded sagging portions of the intestine on the mesenteric

*Summary of a lecture delivered before the Third Clinical Congress of Surgeons of North America, New York, November 13, 1912.

attachments may give rise to many reflex neurotic manifestations.

The diagnosis of enteroptosis in women cannot rest alone upon the striking general pictures given above, but must be based upon careful physical examination combined with radiographical observations upon the passage of a bismuth meal. The fact that occasionally we encounter a woman presenting most of the physical characteristics described for the enteroptotic woman, but who has good musculature and no enteroptosis, renders it obvious that we must not jump at a conclusion. On the other hand, comparatively severe cases of enteroptosis may, at times, be encountered in women who present but few of the ordinary physical changes which go to make up the gross characteristics already described.

Physical examination of the enteroptotic woman will reveal the presence of an abnormally low inferior border of the stomach, laxity of the abdominal muscles, and usually a readily palpable lower pole of one kidney. Other postures may or may not be present.

The bismuth meal will establish the lowered position of the stomach, its dilatation, and greatly delayed emptying, and will show any other intestinal postures which may be present. The bismuth will be found, usually, to require an abnormally long time for its passage through the small intestine and will frequently reveal the fact that the transverse colon is markedly prolapsed. One of the most characteristic features to be found by means of the radiograph is the great range of mobility of the stomach, which may be seen to fall to the most dependent portion of the abdominal cavity, varying with the posture of the patient.

Aside from the factors mentioned as contributing to the development of the condition, it must be mentioned that there is something quite unknown which acts in the individual case to determine just which of the portions of the gastrointestinal tract, and which of the solid abdominal viscera, are to become especially affected.

The treatment consists in improvement of the general hygiene, regulation of the diet, application of correct supporting crutches, regulated exercises, and the like.

Therapeutical Notes.

Treatment of Tetanus.—G. d'Hotel, in *L'Echo médical du Nord* for April 21, 1912, refers to two cases of tetanus of the cephalic type which terminated favorably after injection of antitetanic serum into the spinal canal. The essential point in the treatment applied is considered by the author to have been the placing of the patient in the reversed position, i. e., with shoulders low and hips high, for two hours after the introduction of the serum, thus allowing the latter to flow by gravity up the spinal canal until the medulla oblongata was reached and bathed, as it were, in the fluid. Cerebrospinal fluid was freely evacuated by lumbar puncture as a preliminary measure, and 20 c. c. of serum then injected. While recovery in these cases may have been somewhat of the anular spasmus were considerably diminished twenty-four hours

after the injection; hence the author believes that further trial of the procedure he describes is warranted and will probably lead to beneficial results. In a case of generalized tetanus in a horse, opportunity was offered to compare the effect of the recumbent posture in this species with the reversed posture in man. The animal rolled itself on the ground after the injection and remained on its back for fifteen minutes. Recovery occurred in a week.

Treatment of Chronic Influenza.—Franke (*Medizinische Klinik*) thinks bronchitis, asthma, gastrointestinal catarrh, osseous and articular affections, and neurasthenia may follow ordinary attacks of "grippe," owing to persistence of the infection in the system. These patients catch cold with extreme ease upon the least exposure, and it is necessary to warm them scrupulously to avoid chilling. They should be warmly housed, but should also take exercise out of doors, warmly clad. In the nervous form, bromides are useful, and for anemia arsenic is the most effective remedy. The following mixture often leads to remarkable improvement:

R. Liquoris potassii arsenitis, grs. lxxvj;
Tincturæ nucis vomice ʒviii;
Tincturæ valerianæ, ʒj.

M. Sig.: Ten drops in a large glassful of water after meals.

The dose is gradually increased up to thirty drops, three times daily; after maintaining this for a month or two the dose is then progressively reduced. To assist in strengthening the patient's powers of resistance very hot baths of short duration are useful.

Rectal Administration of Salvarsan in Children.—Weill, Morel, and Mouriquand, in *Lyon médical* for July 7, 1912, state that in view of the difficulties attending the intravenous administration of salvarsan in children, especially in cases of chorea, they have been trying out the rectal method. While most of those who have administered salvarsan by rectum to adults have given this procedure up because of weakness or slowness in the effects, cases of hereditary syphilis, prolonged, severe chorea, anemia, or afebrile infections in children do not require treatment as energetic as syphilitic adults. Moreover, intravenous medication would appear to be relatively less safe in children than in adults. In three cases recently treated by the authors—one of congenital syphilis and two of chorea, in children from ten to thirteen years of age—successive doses of 0.10, 0.20, and 0.40 gramme of salvarsan were given by rectum. The drug was prepared as though for intravenous injection, mixed with about 100 c. c. of 0.5 per cent. salt solution and 5 or 10 drops of laudanum, and slowly administered through a tube, 1.5 metre long, introduced as deeply as possible into the rectum. Care was taken to have the fluid retained at least four hours. In each case treated pronounced improvement was noted. The authors conclude that, barring emergency cases, rectal administration is the method of choice for giving salvarsan to children, since along with sufficient activity of the drug there is an entire absence of unpleasant reactions, local or general.

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CHARLES E. DE M. SAJOUS, M.D., LL.D.,
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THE BRITISH NATIONAL INSURANCE MUDDLE AND ITS LESSON.

With the decision of the British Medical Association on November 19th and 20th, the curtain fell on the second act of the great National insurance drama now enacting in Great Britain. The Representative Body (corresponding to the House of Delegates of the A. M. A.) decided by an overwhelming majority that "the regulations issued by the insurance commissioners and the latest proposals of the Chancellor of the Exchequer are unworkable and derogatory to the profession. As a consequence, the medical profession declines to take service under the act and regulations as at present constituted."

Seeing that national insurance is in the air—that Germany has had compulsory insurance (provocative apparently of much heartburning and strife) for twenty-five years, Denmark voluntary insurance for twenty years, and that quite recently Russia and France have instituted legislative action to that end, it behooves us to pay close attention to the struggles of our British confrères, and particularly to endeavor to understand the principles that underlie their attitude; for it is inconceivable that such bitter resentment and such uncompromising hostility to a scheme possessing such ostensibly laudable aims as the med-

ical provisions of the National Insurance Act seem to indicate, should be based on other than the most serious defects.

What, then, are the features of the act to which the medical profession in Great Britain so strenuously objects? First, it objects to the contributory capitation system of payment, which conduces, as the experience of club practice shows, to impossibly exacting demands, with the inevitable deterioration of the scientific quality of the work done and the consequent professional degradation entailed thereby. Second, under any such flat rate capitation payment, all aspiration is checked; for instead of the doctor's being able to acquire greater freedom and leisure for scientific work by contracting his clientele and raising his fees, his income will be strictly limited by the number of insured persons he is physically able to care for. Third, by the absence of any income limit in the case of "manual" workers and of those who attain to comfortable circumstances or even wealth, after becoming insured, an enormous number of persons who at present can and do pay the doctor a living wage, will henceforth be removed altogether from the field of private practice. Fourth, the conditions of service are to be determined in detail by local insurance committees, which are so constituted as to have a permanent majority of three fifths of the insured, chiefly representatives of the friendly societies, while the medical representatives may not exceed three sixteenths. The so called medical committees are a mere sham, since although they must in certain circumstances be "consulted" by the insurance committee. There is no obligation whatever on the latter to pay any attention to their views. To this is added the indignity of a vexatious committee of complaints, with lay preponderance, inviting strife and a humiliating system of official—and officious—inspection. Fifth, the profession, irrespective of political proclivities, does not trust Mr. Lloyd George.

The profession not unnaturally asks itself if autocratic powers of imposing and rescinding safeguards and obligations exist, what grounds there are for supposing that it will escape being intolerably "sweated" when once it has put its neck beneath the double yoke of administrative bodies consisting of a permanent majority of the traditionally hostile and oppressive "club" authorities, supported by an omnipotent and autocratic lay body like the insurance commissioners, who have the right to strike a medical man off the panel, thus practically debarring him from the exercise of the profession without assigning any reason, and all recourse to a legal investigation of the justice of the case being specifically denied to him.

And now, what seems likely to be the dénouement in the third act? Fourteen millions of persons, male and female, without any selection as to condition of health on insurance, are to be attended and medically cared for. Every service capable of being rendered by a medical man, "except specialist services and major operations," is included, as well as diseases of misconduct, miscarriage with all its attendant complications, and all services must be personally rendered. Clinical records are to be kept and be open to inspection, patients are to be visited up to any distance within three miles of the doctor's residence, and services entailing serious responsibility, and probably often attendance in court, are to be given free. It has been shown by the government actuary that the average annual amount of disabling sickness per capita is twenty-one days. This presupposes at least some fourteen medical visits in the aggregate for each insured person. One thousand insured persons for each doctor, therefore (calling for the services of 14,000 doctors), would entail 14,000 visits per annum, or over thirty-seven for every day in the year, without counting all the minor ailments attended to in office work, which would very likely total double that of the visits. The total income derivable therefrom for this worst of "sweated industries" at \$1.75 per capita per annum, would be \$1,750 per annum! "Abandon hope all ye who enter here" might well be written over the portals of the National Insurance Act. Is it a rash prophecy to suggest that in a very short time all the doctors will be patients, broken down in health and spirits, and the public will have to look after its own health and the doctors as well?

But let us suppose that terms cannot be arrived at, what then? On January 15, 1913, the government will have been for six months collecting compulsory contributions under the act, under a pledge that from that date they will give free to every insured person all necessary medical aid, personal and material. Their alternatives are the much lauded State whole time medical service, and the return to each insured person, either directly or through his society, of the quota (\$1.75) allotted for medical benefit, leaving him to make his own arrangement with the doctor. It is possible that a committee, some of whose members might be appointed, first, because it would be prohibitive in cost, and second, because while there might be some differences, the great mass of practitioners would not likely justify themselves by entering it. The government might, however, appoint a limited number of whole time medical men for a few large industrial centres, form panels in other classes of communities, but be forced to work the act, and in the remaining localities hand

back to the insured their \$1.75. But the discontent and revolt that must inevitably ensue from such a scrap system are obvious. What class of men, in the face of a united profession, would undertake the whole time service, and how would they endure the ostracism, professional and social, that they would justly bring upon themselves? True, it would press hard on a certain number of practitioners in such localities, who would thus be robbed of their living; but the more fortunate members of the profession could not desert the comparative few of their loyal colleagues, and a large guarantee fund is in existence and is steadily rising. And how far would his \$1.75 help the poor insured person in his first serious illness or accident?

The moral for the medical profession of every country is that it should familiarize itself now with all the social problems that are coming to the front in this new era of changing social outlook, in order that when such problems enter the field of practical politics, its counsel may be sought and its aid welcomed, rather than an attempt made to commandeer its services.

LOCAL AND REMOTE COMPLICATIONS FOLLOWING BULLET INJURIES TO THE NERVES.

The immediate complications of bullet injuries to the nerve trunks occur in the form of shock and commotion. The general symptomatology presented is well known, but the same cannot be said of the local symptoms. These may become exaggerated and give rise to distinct pathological phenomena, to which we desire to call attention. The paralysis often results in deviations of the limb and this in turn causes deformity. Quite infrequently tonic contractions or spasm of the paralyzed muscles have been encountered.

Hyperesthesia to pain may give place to the sensation of deep seated, dull pain, or to very sharp burning pain, retaining a high degree of acuity. This has been termed *causalgia*. It was formerly more frequently met with than it is to-day and was not encountered in the recent wars.

When the hyperesthesia is prolonged, the centres may become exalted and propagate the *erethism* in all directions, the subject falling into the so called state of *sensorial tetanus*. The patient rapidly loses his energy and strength, while suicidal ideas not infrequently arise. An hysterical neurosis develops, which may last months or years, and in the end may require resection of the injured nerve.

Traumatic epilepsy is a late accident of bullet wounds to the nerves, and is observed more especially following a lesion of the sciatic. Contrary to

ordinary epilepsy, peripheral traumatic epilepsy manifests itself by spasm of the wounded limb, and this at length becomes generalized. Chorea is less common than epilepsy, but has been observed, while traumatic hysteria from nerve injury by bullets does not appear to have attracted any attention.

Distant paralyses may arise some time after the receipt of the trauma, and are both persistent and incurable. These late paralyses, combined with muscular atrophy, undoubtedly originate from profound changes in the cord, such as an ascending myelitis, either diffuse, or circumscribed at some point. The hemiplegic type of these paralyses by propagation is the most uncommon, and for pathogenic reasons paraplegia is frequent.

THE SECRETARY OF THE TREASURY AND THE PUBLIC HEALTH SERVICE.

The annual report Mr. MacVeagh has just submitted to Congress clearly demonstrates that the opinion of some to the effect that the Secretary of the Treasury takes no active interest in public health work—indeed, that he is inimical to present conditions—is unwarranted. While expressing his gratification that the last Congress saw fit to enlarge materially the active functions of the Public Health Service, he earnestly urges, in view of the immense field of operation it covers, its own independent work, and the material help it contributes to municipal health boards—to which we would add the aid furnished to investigators by its splendid publications—that Congress continue its good work by an immediate and adequate financial provision for the enlarged service. No one who has followed, as we have, the wonderful development of the Public Health Service and gauged its value to the country as a whole, can but approve the attitude of Secretary MacVeagh, and with him express the hope that there shall be no further delay in providing the relatively small appropriations necessary to enable the service to carry out the improvements decided upon.

The belief of some people that economy and greater efficiency would be secured by consolidating the Public Health Service with certain other bureaus is shown, and rightly too, to be fallacious. Such a service requires individuality if a vigorous life is to be insured; its head must assume the responsibilities of its own clearly defined functions, and concentrate his attention upon these alone if they are to be carried on with full efficiency. To associate it with other bureaus would simply serve to forfeit its independence and compromise its usefulness. It would not absorb, but would be absorbed. Elements of weakness and decay would be

introduced in the midst of a wonderful development which nothing now obstructs.

RARE CASE OF VULVOVAGINAL MYIASIS.

Pieter, of San Domingo, reported to the Société de médecine et d'hygiène tropicales, according to *Presse médicale* for November 20, 1912, a curious case of vaginal parasitism. One of his patients was an aged woman pauper who suffered from a purulent vaginal discharge. Digital examination disclosed the presence of ulcerations, but an apparently healthy uterus. Hot water injections brought out a large number of living larvæ of *Chrysomia macellaria* (Fabricius), and the usual after treatment quickly stopped the discharge.

IODINE FOR USE IN EMERGENCY.

H. W. Spaight writes to the *Lancet* for November 23 1912, that he has had a manufacturer put up the solution of iodine in a glass capsule, which can be safely carried in the bag or pocket for use in emergency operation cases. The iodine solution is enclosed in a capsule surrounded by a layer of lint in the manner in which amyl nitrite is carried. When required the glass is crushed between the fingers, which need not be stained if care is used, and the saturated lint is brushed over the required part.

CONJUGAL GENERAL PARESIS.

Laignel-Levestine and Mercier, in presenting to the Société de psychiatrie at Paris on November 21st (*Presse médicale*, November 27, 1912), a married couple suffering from general paresis of the insane, remarked on the rarity of the double condition, greater even than is generally believed. In the case under discussion it was the wife who had infected the husband and, in the opinion of the presenters, this was the usual order of things in conjugal paresis.

Obituary.

ELLSWORTH ELIOT, M. D.

of New York.

Dr. Ellsworth Eliot died at his residence, 48 West Thirty-sixth Street, New York, on December 9th, in his eighty-sixth year, of bronchitis. He graduated from the academic department of Yale University in 1849 and from the College of Physicians and Surgeons, New York, in 1852. He entered the army during the Civil War as surgeon and was present at the battle of Antietam. He served for a time as interne at Bellevue Hospital and was later consulting physician at the Northeastern Dispensary for many years. Doctor Eliot was president of the County Medical Society in 1872 and was also trustee and registrar of the College of

Physicians and Surgeons. He retired from active practice some fifteen years ago. Doctor Eliot was a warm friend of the NEW YORK MEDICAL JOURNAL and, in his active days, a frequent contributor to its pages. He is survived by a son and a daughter.

NATHAN G. WARD, M. D.,
Philadelphia.

Dr. Nathan G. Ward died at Elizabeth City, N. C., on December 4th, while on a trip taken to hasten convalescence from an illness; he will be buried in that town, his place of residence for several years before he went to Philadelphia. He graduated from Jefferson Medical College in 1893, and until 1905 was in charge of the department of nose and throat diseases at that institution, which he left in order to become professor of the same subjects at Temple University. He was attached to the Samaritan and Garretson Hospitals, and was a contributor to the NEW YORK MEDICAL JOURNAL on matters connected with his specialties.

Medical Law.

THE RIGHT TO PRACTISE MEDICINE AND SURGERY.

By the medical act of Kansas it is among other things provided that:

Any person shall be regarded as practising medicine and surgery within the meaning of this act who shall prescribe or who shall recommend for a fee, for like use, any drug or medicine, or perform any surgical operation of whatever nature for the cure or relief of any wounds, fracture, or bodily injury, infirmity, or disease of another person, or who shall use the letters "Dr.," "Doctor," "M. D.," or any other title in connection with his name which in any way represents him as engaged in the practice of medicine and surgery, or any person representing or advertising himself by any means or through any medium whatsoever, or in any manner whatsoever, so as to indicate that he is authorized to or does practise medicine or surgery in this State, or that he is authorized to or does treat the sick or others afflicted with bodily infirmities. . . . Nor shall anything in this act apply to the administration of domestic medicine nor to prohibit gratuitous services.

By the succeeding action it is provided:

From and after the 1st day of September, 1901, any person who shall practise medicine and surgery or osteopathy in the State of Kansas without having received and had recorded a certificate under the provisions of this act, or any person violating any of the provisions of this act, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall pay a fine of not less than fifty dollars nor more than two hundred dollars for each offense, and any person who shall violate this act shall have his name placed on a blacklist, and his name shall be published for services rendered. It shall be the duty of the secretary of the State Board of Registration and Examination to cause this act to be enforced.

In the case of *State v. Corner*, 127 Pacific Reports 1, the supreme court of Kansas had presented to it for determination the question whether a violation of this act created a continuing offense or whether each specific act was a new and separate offense.

The court, in its opinion, reviewed many similar acts in most of which it had been determined that a series of violations constituted one continuing offense; among others it referred to the *dentist* act of Kentucky, where one Wilson was prosecuted

under three indictments, each covering the same period of time, but naming different patients. In this case the Kentucky court was impressed by the fact that if each specific act constituted a separate offense, every time an unregistered dentist pulled a tooth he would be subject to a fine of from \$50 to \$200, and that in a short time they would aggregate so large a sum as to make payment impossible, and as a result that he might be in jail a large part of his life, whereupon it was concluded that the several acts constituted one continuing offense.

The Kansas court disapproved of the conclusion of the Kentucky court and, in commenting upon it, said:

The fact that every time an unregistered dentist pull a tooth the patient's life may be endangered by an unclean operation does not appear to have occurred to the court.

The Kansas court held that each separate treatment of a patient constituted a new offense. In expressing the views of the court upon this subject Mr. Justice Burch said:

By virtue of the legislative definition, to prescribe for a fee, any drug for the relief of any disease of another person is to practise medicine. It is not necessary that this be done frequently, customarily, or habitually. One isolated instance is sufficient, and the penalty is affixed to each offense. The same is true of surgical operations and other specific acts denounced by the statute. Beside this, any fair consideration of the mischief which the legislature sought to remedy leads to the conclusion that the State board of medical registration and examination was not created for the simple purpose of attaching its badge to professional careers. The life, health, and financial resources of individual men, women, and children were to be protected from ignorance and imposture. Each act of unlicensed practice may be fraught with danger. Every repetition is a new peril, and, instead of applying to a continuous course of conduct, the statute specifies and condemns each impulse, to the very end that it may not unite with others in swelling a common stream of action.

As to the unlawful maintenance of an office and use of the term "Doctor," etc., the court entertained a different view. In referring to this the same justice said:

When the defendant opened an office with a doctor's sign over the door, he established a place, the criminal consequence of which merely persisted. Any attempt to split up this persistence into distinct periods of time would be purely arbitrary. But there is nothing arbitrary in taking separate account of the separate cases of the different individuals treated by the defendant on June 15th.

II. PUBLIC HEALTH REGULATIONS.

In the case of *Hassard vs. Lehane*, 135 N. Y. Supplement, 711, the decedent's widow began an action against a coroner's surgeon for performing an autopsy on deceased, without legal authority, as she averred, for so doing. In the trial court a judgment was rendered for plaintiff, from which an appeal was taken.

It appeared from the evidence that the defendant received from the coroner's clerk a list of cases for investigation, including the decedent's, who was reported as having met his death by falling from a vehicle. The defendant went to the hospital where the remains were, examined the records, and talked with the house surgeon. He was told that deceased was found by a policeman in a drug store, whither he had been carried from the street by a citizen who had disappeared; that there were no marks of violence upon him; that he had died about two

hours after reaching the hospital; that the house surgeon had been unable to account for the death, and that there was a question of suspicion about it.

This situation the defendant reported over the telephone to the coroner, who directed the defendant to make a "complete" autopsy.

The defendant acted upon this direction and discovered the immediate cause of death to be hemorrhage from a ruptured spleen, but was unable, without a microscopic examination, to discover whether the rupture was traumatic or due to disease. Upon making a further report to the coroner he was directed to make a microscopical examination of the spleen. In order to carry out this direction he removed the spleen from the body and sent it to a laboratory for examination.

Upon the trial, the trial judge instructed the jury that defendant was justified in dissecting the body, but not in the removal or detention of any part of the body. The statute pertaining to the subject is as follows:

The right to dissect the body of a human being exists in the following cases: . . . 2. Whenever a coroner is authorized by law to hold an inquest upon a body, so far as such coroner authorizes dissection for the purposes of the inquest, and no further. . . . [Section 213, Penal Law (Consol. Laws 1909, c. 40), derived from section 308, Penal Code, as amended by chapter 500, Laws of 1889.]

When in the city of New York any person shall die from criminal violence, or by a casualty, or suddenly when in apparent health, or when unattended by a physician, or in prison, or in any suspicious or unusual manner, the coroner shall subpoena one of the coroner's physicians, who shall view the body of such deceased person externally, or make an autopsy thereon as may be required. It shall be the duty of the physician to whom such subpoena is so issued to make the inspection and autopsy required, and to give evidence thereto at the coroner's inquest. The testimony of such physician, and that of any other witnesses that the coroner may find necessary, shall constitute an inquest. [Section 1773 of the Consolidation Act (chapter 410 of the Laws of 1882).]

In passing upon the application of this statute to the facts in the particular case, Mr. Justice Miller, of the Appellate Court, said:

The ordinary purpose of a subpoena is to compel the attendance of a witness, and of course is not necessary if the witness voluntarily attends. If the word subpoena in said section 1773 is not to have its usual meaning, its use was not felicitous. The word summons would have been more appropriate. At any rate, we think a formal subpoena was not indispensable to the protection of the coroner's physician. The question was whether the coroner actually directed the dissection of the body and the microscopical examination of the spleen, and the uncontradicted evidence is that he did. It was for the coroner to determine whether the death occurred under such circumstances as to justify an inquest and an autopsy. It was the defendant's duty to obey the direction of the coroner and to ascertain the cause of death. Obviously, he was concerned only with the medical side of the case and was not required to interpose his judgment against that of the coroner as to whether the deceased had died from criminal violence, or by casualty, or suddenly when in apparent health, or when unattended by a physician, or in prison, or in any suspicious or unusual manner. His duty was to make an autopsy as may be required, which we think is to be construed as though it read as may be required by the coroner. If therefore the coroner directed the dissection of the body and the subsequent microscopical examination of the spleen, those directions, unless exceeded by the defendant, constituted a complete defense.

The judgment of the trial court was therefore reversed and the case sent back for a new trial.

News Items.

Portland Medical Association.—At the annual meeting of this association, held on the evening of December 6th, Dr. Harold A. Pingree was elected president, Dr. W. A. Williamson and Dr. Alfred Mitchell, vice-presidents, and Dr. R. B. Moore, secretary and treasurer. The paper of the evening was read by Dr. A. S. Thayer.

Eastern Medical Society.—The annual oration of this society was delivered on Friday evening, December 13th, by Dr. Joseph C. Beck, clinical professor of laryngology, rhinology, and otology in the College of Medicine of the University of Illinois, his subject being "The Pathological Significance of Chronic Suppuration of the Nose, Throat, and Ear."

The Lister Memorial.—One of the most liberal donations to the Lister Memorial Fund is that of the Hon. W. F. D. Smith, who gave \$2,500. Lord Rosebery has given \$250, and the total amount so far collected is about \$18,250. It is interesting to note among the contributors to the fund a great many who are not members of the medical profession.

A New Clinic at Johns Hopkins Hospital.—A clinic for the study of digestive disorders will be opened shortly at Johns Hopkins Hospital. It will be in charge of Dr. Thomas R. Brown, but will be a part of the regular medical clinic of which Dr. Llewellys F. Barker is the head. Doctor Brown returned from Europe recently, where he had spent a year studying the methods used in clinics on digestive diseases in some of the important hospitals on the Continent.

Southern Minnesota Medical Association.—This association held its annual meeting in Mankato on December 4th and elected the following officers: President, Dr. Allan B. Stewart, of Owatonna; first vice-president, Dr. Adolph G. Liedloff, of Mankato; second vice-president, Dr. Walter J. Richardson, of Fairmont; secretary, Dr. William T. Adams, of Elgin; treasurer, Dr. G. F. Merritt, of St. Peter. Owatonna was selected as the place for holding the semiannual meeting next summer.

Medical Association of the Greater City of New York.—A stated meeting of this association will be held in Du Bois Hall, New York Academy of Medicine, on Monday evening, December 16th. Dr. Howard Fox will read a paper on Experiences with Neosalvarsan, which will be discussed by Dr. John A. Fordyce and Dr. Faxon E. Gardner. A paper on the Single Dose X Ray Treatment of Skin Diseases, illustrated with lantern slides, will be presented by Dr. George M. MacKee, and among those who will discuss it are Dr. James M. Winfield, Dr. Fred Wise, and Dr. John Remer. Officers will be nominated, the election to take place next month.

Rush Society.—Through the initiative of the Medical Department of the University of Pennsylvania this society has been formed in Philadelphia, with aims similar to those of the Harvey Society of New York. It is proposed to present during each academic year a programme of not less than six nor more than eight lectures. The first lecture will be given in January, and arrangements are being made for three others before May 1st. At the meeting held on November 21st for purposes of organization, the following officers were elected: President, Dr. Richard M. Pearce; vice-president, Dr. Alfred Stengel; secretary-treasurer, Dr. William Pepper; councilors, Dr. A. E. Taylor, Dr. A. C. Abbott, and Dr. H. H. Donaldson.

Society of Carlsbad Physicians; a Prize Contest.—A literary contest, having for its subject, "The Treatment of Diabetes Mellitus, with Special Reference to Balneotherapy," has been instituted by the Society of Carlsbad Physicians in Carlsbad. The jury will be: Hofrat Dr. Ritter v. Jaksch, of Prague; Doctor Luethe, of Kiel; Doctor Orner, of Vienna; Doctor Schmidt, of Innsbruck, and Dr. Edgar Ganz, president of the society. It remains optional with the judges to award either one prize of 5,000 kronen, or two prizes of 3,500 kronen and 1,500 kronen, or three prizes of 3,500 kronen, 1,500 kronen, and 1,000 kronen. The competition is open to physician of all countries. Any language may be used. The time of contest expires December 31, 1913. Any further information may be obtained from the Society of Carlsbad Physicians, Carlsbad.

Pith of Progressive Literature.

CORRESPONDENZ-BLATT FÜR SCHWEIZER AERZTE

November 1, 1912.

1. HANS MEYER-RUEGG: Acute Edema of Cervix.
2. F. DE GUERVAIN: Exacerbation or Aggravation.
3. EDOUARD CLARE: Echinococcus multilocularis.
4. E. SOMMER: Radium Emanation Baths.

November 20, 1912.

5. GWARDER PEDOJA: Body's Own Transposition of Tissues.
6. A. BILHLER: Weber's "Sprudelbad."
7. F. BRANDENBERG: Epidemic of Acute Infantile Paralysis.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT.

October 3, 1912.

1. HOFFMANN: Treatment of Acute Failing Compensation Especially in Acute Infectious Diseases.
2. NOVAK, FORGES, and STRISOWER: Kidney Diabetes in Pregnancy.
3. STEIGER: Diabetes insipidus; Relation to Internal Secretion.
4. SCHAEFFER: Sources of Error in Determining Resistance of Erythrocytes after Method of Liebermann and Filling.
5. SCHROETER: Significance of Typhoid Bacilli.
6. LEWY: Osteopsathyrosis idiopathica.
7. KULENKAMPFF: Anesthetizing Brachial Plexus.
8. ROHMER: Transverse Tracheotomy.
9. JANKOWSKI: Closure of Diaphragm Defect by Liver.
10. RULÉ: Potentia generandi in Spite of Double Tuberculous Epididymides.
11. DEUTSCHLANDER: Infantile Spinal Paralysis.
12. DUROI: Pathogenesis of Glaucoma.

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13. KRAUSE: Pathology and Therapy of Tuberculous Meningitis.
14. KÜLS: Effect of Motion on Growing and Grown Organism.
15. NEUMANN: Right Heart and Effect on Electrocardiogram.
16. LINDEMANN: Type of Tubercle Bacilli in Spontaneous Tuberculosis of Apes.
17. HILNER: Blood Changes in Potassium Chloride Poisoning.
18. ROSENSTEIN: Chemotherapeutic Influence on Septic Processes.
19. ZALEWSKI: Axillary Temperatures; Significance in Surgery.
20. WOLF: Experiments with Narath's Varicocele Operation.
21. KAPFIS: Sterilization of Degenerated by Vasectomy with Retention of Sexual Glands.
22. SCHMID: Treatment of Atonic Hemorrhage.
23. GAMMELTOTT: Modified Syphilis Reaction.
24. WOLFSOHN: Serodiagnosis of Tumors by Complement Divergent Reaction of Dungen.
25. GRABLEY: Practical Criticism of High Frequency Therapy.
26. REIHI: Röntgenological Examinations of Larynx and Trachea.
27. LOHNSTEIN: Bladder Diseases.

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28. STRAUSS: Dietetic Treatment of Diabetes insipidus and Similar Polyurias.
29. MEYER and SCHMITZ: Nature of Tuberculin Reaction.
30. BAUER: Heart Disturbances in Endemic Goitre.
31. HENKEL: New Apparatus for Taking Venous Pulse.
32. LISSAUER: Pathological Changes in Pancreas in Chronic Alcoholism.
33. FRANKEL: Lordotic Albuminuria and Titration Acidity of Urine.
34. EINSIEDEL: Action of Opsonogens (Staphylococcus Vaccine).
35. JAROSCH: Combating Tuberculosis of Upper Air Passages by Means of Mallebren's Prophylactic.
36. FRITSCH: Action of Yohimbin.
37. BERGELL: Urinalysis.
38. COEBEL: Percussion Diagnosis of Fractures of Skull.
39. LIEK: Treatment of Threatening Traumatic Gangrene of Extremities.
40. REIZLAFF: Scarlet Red and Substitutes, Pellidol and Azodolen.
41. GERBER: New Scleroma Cases from East Prussia.
42. SAALFELD: Iodostarin.

October 24, 1912.

43. RITZ and SACHS: Serodiagnosis of Syphilis.
44. BIERBAUM: Treatment of Bacterial Infection with Salvarsan.
45. ECKERT: Present Status of Diphtheria Therapy.
46. RABINOWITSCH: Complement Binding in Typhoid.
47. MEYER: Spontaneous Appearance of Rumpel-Leede Phenomenon.
48. KASMEYER: Posttraumatic Pachymeningitis. Death Five Years after Accident.
49. PERB: Röntgen Examinations in Diagnosis of Colonic Adhesions.
50. OHLEY: Paratyphoiditis, Ulcerative Colitis, and Chronic Dysenteric Colitis.
51. WIETING: Treatment of Mandibular Fractures and Contractures.
52. PELTSHORN: Orthopedic Treatment of Poliomyelitis Paralysis of Children.
53. BLUMER and SCHWAB: Bone and Joint Transplantation.
54. HILLENBERG: Childhood Infection and Tuberculosis Problem.
55. JULY: New Screw Speculum and New Automatic Holder for Abdominal Wall.
56. KRECK: Thyroidin in Hyperemesis gravidarum.
57. BORNSTEIN: Oxygen Poisoning.

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58. ASCHOFF: Construction of Thrombus.
59. MÖLLERS: Type of Tuberculous Bacilli in Tuberculous Conjunctions.
60. STIER: Functional Differences in the Meninges and Their Relation to Intellectual Development of Humanity.
61. BOAS: Exclusion of Exogenous Blood in Examining for Occult Gastric and Intestinal Hemorrhages.

62. SINGER: Reflex Anomalies.
63. LAPPENHEIM: Modifications and Improvements of Instruments for Hemocytometry.
64. WERNER: Neosalvarsan in Malaria.
65. SAYNISCHE: Salvarsan and Mercury Combinations.
66. GRUNBERG: Neosalvarsan Treatment.
67. BRUNING: Amputations in Region of Lower Extremity.
68. DOBERTIN: Low Blunt Tracheotomy.
69. BRANDENBURG: Acute Laryngitis.
70. ORBAN: Occupational Poisoning in Relation to Liebermann's Blood Test.
71. BERGER and SCHWAB: Bone and Joint Transplantation.
72. ZERNIK: New Drugs and Specialties.
73. Preparation of Faultless Drinking Milk.

2. **Kidney Diabetes in Pregnancy.**—Novak, Porges, and Strisower observed in six cases of pregnancy a peculiar symptom complex which disappeared rapidly and thus confirmed the suspicion that it was a disease peculiar to it. It is characterized by marked sugar in the urine, with normal or even subnormal sugar in the blood, independently of a carbohydrate diet.

3. **Diabetes insipidus and Its Relation to Internal Secretion.**—Steiger analyzes a case of diabetes insipidus which, notwithstanding a weakness of concentration in the kidneys, and an enlargement and deepening of the sella turcica, must be classified as an idiopathic diabetes insipidus. He was able to demonstrate an increased sensitiveness of the sympathetic nervous system, particularly in its autonomic portion, on account of the decreased amount of urine after the administration of atropine and an increase after the administration of pilocarpine.

6. **Osteopsathyrosis idiopathica.**—Lewy discusses the various theories concerning the fragility of bone and the Röntgen plates obtained in osteopsathyrosis, osteogenesis imperfecta, osteomalacia infantilis, and rachitis. He then describes his case of a girl, five and a half years old (the patients are usually males), in detail. A wedge shaped osteotomy on a deformity of the tibia, after repeated fractures, gave an opportunity of microscopical examination of the bone. It revealed a lessened number of osteoblastic rows and a substitution of the red bone marrow by fibrous tissue. The administration of thyroïdin proved to be without effect.

7. **Anesthetizing the Brachial Plexus.**—Kulen-kampff injected novocain solution directly into the plexus brachialis in 140 cases; in a successful injection an immediate paresthesia in the region of the median and radial nerve is observed, and in from one to three minutes a motor and sensory paralysis of the arm follows. This method permits the major number of operations on the arm to be performed without the use of a general anesthetic. Its success depends upon the accuracy with which the nerve bundles are reached. If a paresthesia is first obtained a total and rapid paralysis follows. It is characteristic that the paresthesias increase during the injection, which consequently must be made against a certain pressure. Fine, short needles are used. Puncturing an artery is possible, but occurs seldom and is without after effect. The author has not noticed pains at the site of injection in his cases. A negative result is produced only when the injection is made without first obtaining the paresthesia. The causes for failure are set forth.

8. **Transverse Tracheotomy.**—Rohmer thinks that this method advocated by Frank is excellent for the skin, in respect to healing of the wound and

from the cosmetic point of view. But transverse tracheotomy makes the retention of the cannula between the rings of cartilage difficult, almost impossible. For this reason he recommends the old time longitudinal incision.

9. Closure of a Defect in the Diaphragm by the Liver.—Jankowski relates an interesting case of a gunshot wound which involved the right side of the thorax and, through infection, culminated in an empyema. At the operation a defect was found in the diaphragm, three by fifteen cm., which was so completely closed off by the liver that a secondary infection of the peritoneal cavity was prevented. This compression of the liver into the opening was most likely due to an increased intraabdominal pressure.

10. Potentia generandi in Double Tuberculous Epididymides.—Bull describes the case of a man, twenty years old, the father of three children, who has a double tuberculous involvement of both epididymides since childhood. Castration was performed on the right side, the operation showed a healthy testis, but a completely tuberculous epididymis. Judging from clinical experience, the same conditions must be present on the other side. The prostate and the bladder were also involved. The urine showed at times the tuberculous bacilli and guinea pigs injected with semen became tuberculous. The wife of the patient showed no diseased condition of the genitals. The children have a negative von Pirquet. Bull is quite certain of the parenthood of his patient, although, as he says, there is practically no way in which to prove scientifically that a man is really the father of his wife's children.

14. Effect of Motion on the Growing and Grown Organism.—Külbs found that young animals which were compelled to do a certain amount of physical exercise showed a relative and absolute increase of weight of the heart and other internal organs in comparison with those animals kept at rest. In fully grown animals the increase in weight was less. An increase in weight of the internal organs in young animals could not be shown if the period of exercise was followed by a longer period of rest. In the exercised animals the fat of the heart and the liver contained more lecithin, also a more intensive red coloring of the bony marrow as a result of increased function, in comparison with the fatty yellow marrow of the control animals.

22. Treatment of Atonic Hemorrhage.—Schmid recommends the injection of pituitrin or glandutrin directly into the musculature of the uterus in Cesarean section as a measure that has proved very satisfactory. This induced him to inject these hypophyseal extracts into the substance of the uterus by way of the cervical canal in atonic hemorrhage. Here likewise he obtained the very best results. He advises the injection of these substances as a prophylactic in Cesarean section, in all obstetrical operations, in curettages, and in threatening atonic uterine hemorrhage.

30. Heart Disturbance in Endemic Goitre.—Bauer says: 1. Clinical pathological hearts are often found in conjunction with endemic goitres which cannot be classed among the forms of goitre hearts described up to the present time. 2. The findings are characterized by an accidental systolic

murmur, usually over the pulmonic area, an accentuated second pulmonic, and an increase of the heart dullness to the left. The apex beat is not increased in intensity, the pulse not increased in rate, and noticeable subjective symptoms are absent. 3. These heart findings are most likely to be considered thyrotoxic and are called the torpid type of thyrotoxic goitre heart, in contradistinction to Kraus's erethistic type. 4. There are many transition forms between the normal dysgenital (chlorosis, pseudochlorosis) and dysthyrotic torpid and erethistic hearts.

32. Pathological Changes in Pancreas in Chronic Alcoholism.—Lissauer found these changes numerous, affecting principally the connective tissue and the parenchyma. In the interstitial connective tissue a chronic interstitial pancreatitis of varying degrees was found, in the parenchyma a fatty degeneration. Both changes must be etiologically due to chronic alcoholism since another cause could not be found. The pathological changes are parallel to the liver cirrhosis and the fatty livers in other chronic alcoholics. A diabetes may result from these changes.

33. Lordotic Albuminuria and Titration Acidity of the Urine.—Fraenke showed that in the number of children suffering with lordotic albuminuria an increase of titration acidity in the urine could be found, immediately or a few hours after the lordosis. The excretion of albumin after the harmful position could be avoided by the previous administration of sodium bicarbonate. In the case of a child having a lordotic albuminuria following a scarlet fever nephritis and in cases of scarlet fever nephritis, the alkaline treatment was without effect.

34. Action of Oponogens.—Einsiedel tried the effect of staphylococcus vaccine in the treatment of cutaneous lesions. In forty-three cases of furunculosis, six cases of furunculosis with acne, and thirty-three cases of acne alone, injections of oponogens were made in the immediate neighborhood of the inflammatory areas. In the cases of furunculosis there was a uniform improvement. In acne cases the results were changeable, as is to be expected in a mixed infection. For a lasting result a long continued treatment with sufficiently large doses, 50 to 1,500 million staphylococci, is necessary. The author is not yet prepared to say whether the injection of oponogen in cases of tuberculosis with mixed staphylococci infection is beneficial.

35. Mallebrin's Prophylactic in Tuberculosis.—Jarosch attributes the action of this drug to the fact that albumin chloride in watery solution painted on the mucous membrane of the pharynx and its neighborhood, unites with the proteids and an aluminum albuminoid is the result, which forms a coating over the mucous membrane. The hydrochloric acid is decomposed, forming immediately chlorine and oxygen, both, in the nascent state, being strong disinfecting agents. The prophylactic is given in all cases of inflammatory affections of the upper air passages, in gargle form. Inhalations of ten to thirty drops of the remedy to three tablespoonfuls of water are given a few times daily. There is an objective improvement in cases of pulmonary tuberculosis.

36. Yohimbin.—Fritsch calls our attention to the fact that this drug possesses a tonic action upon

the organic musculature of the uropoietic mechanism, and thus aids in moving the stagnating secretion in the senile prostate and strengthens the bladder sphincter.

39. Treatment of Threatening Traumatic Gangrene of the Extremities.—Liek applied the deep incisions of Noesske to avoid venous stasis in traumatic injuries of the extremities where only a thin bridge of skin connected the injured portion to the main stem. The deep incision with consequent suction treatment of multiple small incisions and moist warm applications were sufficient. All these measures appealed to him because of their simplicity and because no visible scars remained.

44. Treatment of Bacterial Infection with Salvarsan.—Bierbaum experimented on animals infected with the anthrax and the erysipelas bacilli by injecting salvarsan. The good effects are due to the proved strength of the salvarsan in raising the antibodies of the animals. Since the action of salvarsan is favorable in infections with these two bacilli, the author believes that salvarsan in this connection is worthy of much attention.

62. Reflex Anomalies.—Singer draws the following conclusions: 1. Asymmetry, weakness, or absence of the patellar reflex are pathological phenomena and point to a disease of the peripheral nerves or central organs. 2. The diagnostic use of the Achilles reflex is of just as much importance as that of the patellar reflex. Sometimes the first anomalies are to be found here. 3. Babinski's sign is of the utmost importance in disease of the pyramidal tract; its absence, however, does not prove conclusively that the tract is intact. 4. The general practitioner ought to be master of the technique of reflex examinations. If there is doubt, the constancy of the anomaly is the deciding factor.

ZENTRALBLATT FÜR CHIRURGIE.

November 9, 1912.

1. A. REICH: Repair of Defects in Abdomen by Transplantation from Auricle as Done by Koenig.

November 16, 1912.

2. W. ROEPKE: New Procedure for Gastrostomy and Plastic Operation on Esophagus.
3. E. MOSER: Attachment of Floating Kidney to Twelfth Rib by Means of Capsule.

2. Gastrostomy.—Roepke reports a case in which he formed a tube from a flap taken from the greater curvature of the stomach almost twenty-two cm. long, passed it through a tunnel beneath the skin to an opening below the left clavicle where the open end of the tube thus formed was secured. The result is said to have been very satisfactory.

3. Operation for Floating Kidney.—Moser reports two cases in which he attached the kidney to the twelfth rib by means of a flap taken from its capsule.

ZENTRALBLATT FÜR GYNÄKOLOGIE.

November 2, 1912.

1. H. H. SCHMID: Attempted Abortion in Absence of Pregnancy.
2. A. MUELLER: Attempted Abortion in Absence of Pregnancy. Poisoning by Absorption of Mercury Oxycyanide.
3. M. SCHWAB: Puerperal Fever; Relation to Deliveries in Home.
4. KUNTSCHE: Vacuum Cup in Obstetrics.

November 9, 1912.

5. F. ENGELMANN: Eclampsia.
6. W. STROGANOFF: Theoretical Foundations of Prophylactic Method of Treatment for Eclampsia.
7. C. CRÉDÉ-HORDER: Has Ophthalmia neonatorum Decreased?
8. G. WEIDENBAUM: Technique of Crédé's Prophylactic Method for Ophthalmia neonatorum.
9. P. CARLSSON: Facial Paralysis Following Spontaneous Delivery.

1. 2. Attempted Abortion in the Absence of Pregnancy.—Schmid and Mueller report such cases. Mueller's patient had injected a solution of mercury oxycyanide into the uterus. Some of the fluid was forced through the tubes into the peritoneal cavity, from which it was absorbed with marked symptoms of poisoning. The uterus was curetted, an incision made into Douglas's pouch with drainage. The patient recovered.

5. Eclampsia.—Engelmann discusses the subject at some length, taking up in detail the treatment to be employed and the reasons. He states that the results in his clinic have been considerably improved since premature delivery was abandoned; that in the last twenty cases in which premature delivery was not practised there was but one death. The treatment employed was as follows: Isolation of the patient and removal of all irritating substances, this to be done under chloroform; free venesection with subsequent infusion, this to be repeated; rectal injections of chloral; accelerating or inducing labor and instrumental delivery as soon as possible without special danger. The author holds that many conditions during the course of the eclampsia, as well as results obtained from definite therapeutic measures, would indicate that a physical change in the condition of the blood plays an important rôle in the pathology of the condition.

6. Treatment of Eclampsia.—Stroganoff believes that the prophylactic treatment of eclampsia rests on four main factors: 1. The removal or lessening of all external irritations; 2, lessening the irritability and warding off the attacks by the systematic use of morphine, chloral hydrate, and chloroform; 3, accelerating delivery, but not as a rule forcing it; 4, stimulating the vital processes of the body, lungs, heart, and kidneys. The action of the chloral seems to be that of a physiological antidote to the poison present. The mixing of several narcotics seems to increase their action and in that way permit of a decrease in the dose.

7. Ophthalmia neonatorum.—Crédé-Horder compares the figures of seventeen years ago with those of to-day in the consideration of the prevalence of ophthalmia neonatorum. Of 3,033 inmates of blind asylums thirteen per cent. had lost their sight through this cause; to-day, out of 3,309 inmates, 12.39 per cent., not much of an improvement. It must be combated by insisting on proper prophylaxis, such as is used in the obstetrical clinics. Inasmuch as such methods in no way injure the eye, they should be enforced.

8. Crédé's Treatment of Ophthalmia neonatorum.—Weidenbaum, in order to have always a fresh solution of silver nitrate, carries the substance in 0.2 gramme particles. When required one of these is dissolved in twenty c. c. of distilled water. This avoids the dangers of decomposition products.

9. Facial Paralysis Following Spontaneous Delivery.—Carlsson concludes that the paralysis is nearly always peripheral and that it depends upon pressure of the nerve at the outlet through the stylomastoid foramen. In most instances the pressure is exerted by the symphysis, in the minority by the promontory. The paralysis is usually noticed only in very narrow pelvis, and lasts, on an average, about eight days.

KLINISCHE MONATSBLETER FÜR AUGENHEILKUNDE.

LIEBIG, 1904.

1. The Munich, Germany, Yearly of Ophthalmology, and
 2. The Munich, Germany, Yearly of Ophthalmology, and
 3. The Munich, Germany, Yearly of Ophthalmology, and
 4. The Munich, Germany, Yearly of Ophthalmology, and
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 8. The Munich, Germany, Yearly of Ophthalmology, and
 9. The Munich, Germany, Yearly of Ophthalmology, and
 10. The Munich, Germany, Yearly of Ophthalmology, and

1. **The Diagnostic Value of Unilateral Choked Disc and Unilateral Exophthalmos in Brain Tumor.**—Mohr presents an extensive review of the literature on this subject, with the reported cases in tabular form, the result of which is to support the assertion of Leslie Paton, that positive conclusions as to the localization of the tumor cannot be drawn from the intensity of the symptoms in the fundus. This is contrary to the experience of Horsley, who found the more marked eye symptoms on the side of the tumor in ninety-five per cent. of his cases; of Middleton Martin, who found the same in seventy-four per cent.; of Williamson, in eighty-five per cent.; and Holmes, in seventy-five per cent. Pure unilateral choked disc is fairly rare. Mohr found it in only forty-one cases; in only 56.09 per cent. of these was the choked disc on the side of the tumor. When both nerves were affected the greater involvement is more commonly on the side of the tumor, in 70.8 per cent. In the rare cases of unilateral optic neuritis caused by tumor of the brain it was on the same side as the tumor in eighty per cent. Horsley's observations were that in the great majority of the cases in which hemorrhages appeared in the retina, these occurred in the eye on the same side as the tumor, but Mohr, from a study of the literature, finds the reverse to be true. Hence it does not appear to be practicable to draw definite conclusions from well marked retinal lesions alone as to the side on which the tumor is situated. In the few cases observed in which there was choked disc in one eye and optic atrophy in the other, the tumor was always on the side of the atrophy. The result was almost the same in cases of exophthalmos due to a tumor of the brain without entrance of the tumor into the orbit. In the fifteen reported cases the exophthalmos, or the greater exophthalmos, was always on the same side as the tumor, and an investigation of the cases recorded in the clinic at Breslau gave eighty-five per cent. on the side of the tumor, fifteen per cent. on the opposite side.

2. **Perléche and Blepharoconjunctivitis.**—Ishihara says that perlèche is an eczematous disease of the corner of the mouth, caused by the *Morgan-Rosenfeld* diplobacillus, which is widespread, at least in Japan. The diplobacilli can be transferred from the mouth to the eye and produce a typical blepharoconjunctivitis, and therefore the treatment of the perlèche is an absolute necessity for the prevention of the conjunctivitis.

3. **Pneumococci on the Normal Conjunctiva.**—Mishra and Ghose found by daily examination of the conjunctiva that pneumococci may be present on the conjunctiva for a few days, and reappear later, all without any symptoms. The question

whether the appearance each time was a sign of a fresh infection, or whether the pneumococci were present all the time, but could not sometimes be recognized, is discussed at some length. The question is of considerable importance in view of the pneumococcal infections that occasionally take place after a cataract extraction in eyes that have shown no pneumococci before operation.

BULLETIN DE L'ACADÉMIE DE MÉDECINE

Blood Transfusion after Hemorrhage from Placental Detachment.—Oui reports the case of a woman in whom developed pyelonephritis during pregnancy, and who, during labor, suffered from a copious hemorrhage due to placental detachment. After delivery, and notwithstanding prompt arrest of the bleeding, the general condition became aggravated. Stimulants and an injection of a pint of saline solution, yielding only temporary benefit, transfusion of blood was resorted to, as the renal condition was considered to contraindicate further administration of saline. The result was excellent. Oui believes transfusion to act more quickly than intravenous saline infusion, in spite of the smaller amount of fluid introduced, and advises the former measure where saline solution is contraindicated or ineffectual.

LYON MÉDICAL.

November 1904.

1. Fabre and Bourret. Use of Arsenobenzol in Treatment of Congenital Syphilis.

Use of Arsenobenzol in Congenital Syphilis.—Fabre and Bourret treated six pregnant women and eighteen infants with arsenobenzol. They conclude that in women acquiring syphilis or showing secondary symptoms during pregnancy one may suppose that the fetus is not yet infected and that the administration of repeated salvarsan injections, in doses of 0.25 to 0.3 gramme, is therefore clearly indicated. In cases, however, that have not recently exhibited any symptoms of syphilis, and in which the sole aim is to avoid interruption of pregnancy by premature expulsion or fetal death, mercury and iodides are to be given the preference over salvarsan, except in cases not bearing mercury well, those in which the ordinary measures have failed at a former pregnancy, or where medication must be concealed. In syphilitic infants, salvarsan was found to overcome rapidly pemphigus, all mucous patches, and chronic coryza. Its effect in improving the general condition was, however, far less constant. In cases not presenting any syphilitic manifestations except poor general condition, salvarsan should not be used unless mercury and iodides have failed. Where it is employed, its effects are evanescent: mercury and iodides should always be given afterward and the salvarsan not repeated until acute eruptive phenomena return. The authors recommend, in infants, intramuscular injections of neo-salvarsan, 0.05 gramme, not into the most fleshy part of the buttock, but into the muscles covering the external iliac fossa. The needle is introduced to the bone, then withdrawn slightly, so that its point shall lie in the muscle. Since dressings at this area in infants cannot be kept clean, the puncture

is merely covered with a little cotton, dipped in collodion.

SEMAINE MÉDICALE.

November 6, 1912.

F. VIDAL, ANDRÉ WEILL, and LAUDAT: Liphemia in Bright's Disease. Relationship between Albuminuric Retinitis, Azothemia, and Cholesterinemia.

Altered Blood Content in Bright's Disease and Its Relationship to Retinitis.—Widal, Weill, and Laudat found that liphemia is frequently present in nephritis. Cholesterinemia, already reported in these cases by Chauffard, runs parallel with, and may serve as an index of the degree of liphemia. The latter is the cause of the milky appearance of the serum in certain cases of nephritis. It is a usual accompaniment of all forms of the disease, occurring, e. g., in subjects simply albuminuric, as well as in those with retention of chlorides or nitrogen. It does not give rise, however, to any definite group of symptoms. Retinitis occurs in nephritics in whom there is nitrogen retention, and frequently serves to indicate the beginning of the latter condition; hence its unfavorable prognostic significance. The liphemia, in turn, leads to fatty and cholesterinic infiltration of the area of retinitis.

JOURNAL D'UROLOGIE.

May, 1912.

1. ROCHET: Temporary Deprivation of Urine in Operation on Ureters.
2. G. MARION: Diagnosis of Renal Tuberculosis Where Cystoscopy Is Impossible because of Condition of Bladder.
3. CONSTANTESCO: Incontinence of Urine as Symptom of Renal Tuberculosis.
4. GAYET: Resection of Pelvis for Hydronephrosis.
5. G. BOTEZ: Pathology and Surgery of Horseshoe Kidney.
6. G. MARION: Error of Diagnosis by Misinterpretation of the Radiograph.
7. G. GREGORIS: Hydronephrosis in Horseshoe Kidney.
8. C. PERINEAU: Results of Treatment of Suppurative Pyelonephrosis by Ureteral Catheterization and Irrigation of Kidney Pelvis.

June, 1912.

9. P. BAZY: Pyelotomy for Kidney Calculus.
10. LEGUEU, PAPIN, and MAINGOT: Cystoradiograph.
11. P. ORLOWSKI: Inflammation of Verumontanum.
12. RAFIN: Infected and Uninfected Tuberculous Urine.
13. RAFIN: Infection of Kidney in Tuberculosis.
14. A. LIPPENS: Healing of Perineoprostatic Fistula by Bismuth Paste.
15. G. MARION: Acute Prostatitis in Prostatectomized Patient.
16. E. MERIEL: Voluminous Rectal Prolapse Due to Vesical Calculus in Child.
17. MARINESCO: Epididymectomy in Genital Tuberculosis.

3. Incontinence of Urine in Renal Tuberculosis.—Constantesco found two cases of nocturnal incontinence as a first symptom of renal tuberculosis. In two other cases nocturnal incontinence appeared after nephrectomy and was probably caused by the invasion of the remaining kidney.

5. Horseshoe Kidney.—Botez's conclusions are: 1. Horseshoe kidney is found once in 715 autopsies, and once in 143 operations. The mortality in horseshoe kidney is 16.25 per cent. The reason for this is an increased disposition of the patient to contract different kidney diseases. A diseased horseshoe kidney gives pain and digestive and nervous symptoms. These symptoms make the diagnosis more or less probable. The diagnosis is principally made by palpation and radiography. The tumor has a median abdominal position. Treatment of healthy horseshoe kidney giving symptoms is always operative. Ideal operation is complete division of the isthmus, thus forming two separate kidneys. The treatment of a diseased horseshoe kidney is the same as a diseased single kidney modified by abnormal fixation of the abnormal ureters,

etc. With some modification in technique all kidney operations may be performed on horseshoe kidneys.

6. Radiograph.—Marion reports a case in which the radiograph showed a shadow which was apparently that of a calculus. A tuberculous kidney was removed, and the author believes the shadow to have been cast by the caseous tuberculous material in one of the lobes.

8. Lavage of the Kidney Pelvis.—Perineau says the catheterization of the ureters and washing of the pelvis in pyelonephritis acts beneficially because of the aseptic action of the solution used; of the better drainage of infected material; of its favorable action upon the paralyzed muscles of the ureters. The contraindications are: Acute conditions; bad condition of the subject; a very chronic pyelonephritis; and cases in which surgical intervention, stone, and hydronephrosis, are indicated. In ascending pyelonephritis, if bladder washings and retained catheter are not sufficient, washing of the kidney pelvis gives excellent results.

10. Cystoradiograph.—Legueu, Papin, and Maingot have not found bismuth a good medium to fill the bladder with because of its liability to sink to the bottom of the bladder. They have therefore employed seven or eight per cent. collargol. They have used it in diagnosing malformations and diverticula of the bladder, hypertrophied prostate (in which their success has not been marked), bladder stones, and in postoperative cases of partial resection of the bladder, etc., in which they wished to see the effect of operation.

12. Tuberculous Urine.—Rafin, in 239 examinations, found infected urine in seventy-one cases or 29.6 per cent. Staphylococci were found fifty-eight times in the seventy-one cases in which mixed infection was found. The infection was due thirty-seven times to catheterization and nine times to gonorrhea. The author emphasizes the necessity of asepsis in handling urinary tuberculosis. His results confirm the general views that an aseptc polyuria is nearly always of tuberculous origin.

16. Rectal Prolapse Caused by Vesical Calculus.—Meriel cites a case of large rectal prolapse in a child of five years who had painful urination and much vesical tenesmus. A bladder stone was removed and the prolapse disappeared rapidly.

REVUE DE MÉDECINE.

October, 1912.

1. GERMAIN ROQUE and VICTOR CORDIER: Tuberculous Nature of Ascites in Cirrhosis, and in Particular in Laennec's Cirrhosis (*To be continued*).
2. H. GOUGEROT: Classification of Acute Bacillituberculeses. I. Acute Tuberculeses of Laennec. II. Granulitides of Empis. III. Nontuberculous Septicemias: Typhobacillosis of Landouzy.
3. HENRI LAPRÉ and GEORGES VÉRY: Nitrogen Metabolism in Tuberculosis.
4. J. CÉCIKAS: Artificial Pleurisy. Rational Treatment of Pulmonary Tuberculosis.
5. E. GOLLIN: Tuberculous Meningitis with Recovery.

2. Classification of Acute Tuberculeses.—Gougerot gives a history of the classic discussion concerning the unity and duality of tuberculosis, and states that, in his opinion, the typhobacillosis of Landouzy,—acute tuberculosis without tubercle formation,—deserves general recognition as a form distinct from acute miliary tuberculosis. He sets forth the clinical, pathological, experimental, and

2, the action of the rheumatic poison upon a specifically predisposed central nervous system produces a characteristic nervous instability which may precede the appearance of choreic movements by some weeks, and may in other instances itself constitute the sole evidence of the choreic tendency; and, 3, the emergence of the choreic movements is determined by emotional stimuli acting upon a nervous system thus previously disequibrated.

2. **Bovine and Human Tubercle Bacilli.**—Fraser makes use of the well known susceptibility of the rabbit to the bovine type of tubercle bacillus and his resistance to the human type. He, however, makes use of local reactions instead of the general constitutional reaction. An emulsion of the bacilli to be tested is injected into the knee joint of a rabbit. If the bacillus is of the human type very few changes result, the synovial membrane becomes slightly thickened, and there is a collection of fluid in the joint, there is no pain or stiffness, and the animal continues in good general health. If the bacillus is of the bovine type the changes are rapid and acute; the animal becomes a cripple about ten days after the inoculation, the joint is swollen and painful, there is progressive and continuous loss of weight. Examination of the joint three or four weeks after inoculation shows the presence of acute tubercle, whereas the joint infected with the human form will show chronic tubercle three or four months later. The advantages of the test are that no special technique is necessary and that it can be applied directly to suspected fluids if they are free from other pathogenic organisms.

3. **Soil and the Seed.**—Sutherland concludes: 1. There is more tuberculosis among the children of consumptives than among those of healthy parents. 2. This may be due to their exposure to infection, to their lowered general health, or to their heredity. 3. There is more tuberculosis among the children of infectious consumptives than among the children of noninfectious. 4. This must be due to exposure to infection plus lowered general health, inseparable as the result of the stage of the disease in the parents. 5. Therefore, it is not heredity which determines whether the disease will develop in children of consumptives, but the existence of certain immediate factors which are under our control. The chief of these factors are exposure and lowered general health. Sutherland aptly says, "the seed creates the soil."

4. **Rat Bite Fever.**—Cruikshank reports a case of this disease occurring in England. The symptoms were typical; there was local necrosis, blotchy red eruption ensued, the condition was very chronic, and the fever curve was typically periodic, exacerbations occurring about every seven days throughout fifteen weeks. Recovery ultimately took place, but no therapeutic measure seemed to have any influence.

LANCET.

November 23, 1912.

1. R. D. POWELL: Role of Cardiovascular System in Pulmonary Tuberculosis.
2. T. LEWIS: Clinical Significance of Different Forms of Regular Tachycardia.
3. E. D. W. GRIEG: Occurrence of Cholera Vibrio in Biliary Passages.
4. J. W. D. MEGAW: Rogers's Method of Treating Asiatic Cholera.
5. J. PARKINSON: Erythremia.
6. R. C. ELSLIE: Varieties and Treatment of Lateral Curvatures of Spine.

7. J. A. M. CAMERON: Purpura fulminans.
8. E. T. TATLOW: Jejunostomy in Combination with Anterior Gastroenterostomy.
9. S. JELLINER: Dangers of Electricity.

1. **Cardiovascular System in Tuberculosis.**—Powell cites, among other observations, the results of blood pressure readings in eighteen patients ill with pulmonary tuberculosis. Eight were in the acute stage, and the mean pressure of this group was 102.5 mm. of mercury, with a minimum of 88.7 mm. and a maximum of 123 mm. mercury. Ten cases were nonfebrile and quiescent and yielded a mean pressure of 113.3 mm., with the minimum at 101.1 and the maximum at 131 mm. of mercury. Slight exercise raises the pressure in the quiescent cases and lowers it in the active. The reaction to exercise is, then, a point of value in the prognosis of a given case. Powell holds that the low pressure is due to the depressed cardiac function arising from excessive absorption of bacterial products, and finds that in general consumptives have a much better circulation than they are credited with and that their hearts are relatively good.

2. **Tachycardia.**—Lewis classifies the regular tachycardias as: 1. Regular tachycardia of physiological type, simple tachycardia; 2. regular tachycardia of pathological type, classified as simple paroxysmal tachycardia or auricular flutter. The recognition of the form of tachycardia is of importance. If it is of the first class, simple tachycardia, the distinguishing features will be: 1. When the patient is at rest the rate will fall considerably; 2. when he lies down it will fall some ten or twenty or more beats, and when he stands again it will rise to, or almost to, the original rate; 3. its rate will be increased by exercise; 4. it will show similar reactions to emotion, meals, sleep, and fever; 5. electrocardiograms will be of normal type; and, 6. the onset will be gradual as will be the termination. The two forms of pathological tachycardia are not, as a rule, distinguishable by the ordinary clinical means. Electrocardiograms give the differentiation at once between all three types of tachycardia. The rate when the patient is in bed may give a hint as to the form of tachycardia; if it is between 170 and 200 the condition is almost certainly one of auricular flutter. The history of sudden onset and offset of attacks of dyspnea and palpitation will aid in the diagnosis of paroxysmal tachycardia, but this history is often absent, for the patient may have no subjective symptoms.

3. **Cholera Vibrio in the Bile Passages.**—Grieg made bacteriological examinations in 271 fatal cases of cholera and found the vibrio present in the bile in eighty-one. Of these twelve showed pathological changes in the gallbladder. The cholera vibrio remaining alive in the gallbladder of treated patients seems capable in some instances of developing its toxine, which passes freely into the circulation, and which causes late death. Late uremia may also be explained upon a similar basis. Aside from the danger to the individual who thus harbors the bacilli in his gallbladder, there is the fact that these active bacilli may escape from his bile passages and be disseminated in his excreta, and he therefore becomes a source of infection wherever he goes. The successful treatment which shall destroy the bacilli in the bile passages has not yet been

devised, but it is of very great importance that some such measure be elaborated.

5. **Erythremia.**—Parkinson prefers to classify the cases of so called polycytosis as erythremia and to divide them into two groups: 1. Those in which no cause can be found for the condition, the primary cases; and, 2, those in which there is some associated causal factor, the secondary cases. He reports the details in six cases of this disease and the results of various forms of treatment, with the conclusion that the condition runs its course practically unmodified, save for temporary changes, by any form of treatment.

7. **Purpura fulminans.**—Cameron reports a case of this rare condition in which the purpura spread from one small patch to involve almost the entire body in the brief time of twenty-two hours. Severe hematemeses was the cause of the fatal termination.

BOSTON MEDICAL AND SURGICAL JOURNAL

November 28, 1912.

1. WILLIAM J. MARY: Contributions of Nineteenth Century to Living Pathology.
2. GEORGE M. B. BENT: Treatment of Pulmonary Tuberculosis by Artificial Pneumothorax According to Forlanini.
3. HENRY TURNER BAILEY: Under Ether.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

November 30, 1912.

1. THOMAS D. CROOKAN: Arteriosclerosis.
2. THOMAS S. SCHWARTZ: Menace to Young Child of Common Type of Cerebral.
3. ALFRED E. CROOKAN: Occurrence and Etiology of Club Foot.
4. MARJORIE DAVIS: Value of Social Service Department to Children's Dispensary.
5. GEORGE H. SOUTHWELL: Reaction of Rhinoceroses with Blood from Rhinoceroses: Rheumatic Fever.
6. EDWARD CROOKAN: Value of Serial Radiography in Gastrointestinal Diagnosis.
7. H. B. LAMSON: Origin of Tube Casts.
8. ALFRED E. CROOKAN: Present Standing of Operation of Lithotomy.
9. WILLIAM F. LAMSON: Sympathetic Contracture for Vesical Calculi: Incubations and Operative Procedure.
10. EDWARD CROOKAN: Serial Radiography, Purpose and Advantages.
11. C. A. WOOD: Death and Birthless from Mental Abuse: Means of Prevention.
12. EDWARD CROOKAN: Pain no Longer Intervals in Milk Feeding.

1. **Arteriosclerosis.**—See this JOURNAL for June 8th, page 1225.

3. **Occurrence and Etiology of Club Foot.**—Ehrenfried finds three etiological factors: Heredity in five per cent.; early intrauterine causes, depending on faulty nutrition from diseased chorionic villi in ten per cent.; while mechanical causes, operating later in intrauterine life, account for most of the remainder. In this last class causal factors of importance are poor hygiene in pregnancy and work during pregnancy.

6. **Value of Serial Radiography in Gastrointestinal Diagnosis.**—Cole divides the types of stomachs into four classes, to facilitate indexing: The cow horn, textbook, drain trap, and fishhook, two or three radiographs being usually sufficient to determine the size, shape, and position of the stomach; in cases of structural pathological conditions serial radiography is a *sine qua non* in making a diagnosis. This means a series of from fourteen to twenty-four radiographs of various phases of different cycles, which, when assembled and studied individually and collectively, give a graphic and fairly accurate representation of the gastric motor phenomena. This method has shown that the motor phenomena of the stomach are complex, and constitute a cycle, similar to the heart action, com-

posed of a systole and a diastole, and a peristaltic progression toward the pylorus. A cycle consumes about three seconds, and at the end a peristaltic contraction should have moved up to the position of the preceding contraction at the end of the previous cycle; the most common types are the three and four cycles, three or four contractions being necessary to progress from its origin to the pylorus. The appearance of the cap (first portion of the duodenum) is a vital factor in gastroduodenal diagnosis. By the use of serial radiography diagnosis may be made of carcinoma, hourglass contraction, adhesions from gastric ulcer, duodenal ulcer, and gall-bladder infection, with or without calculi, dilatation from obstruction or atony, and atrophic contraction, with about the same degree of certainty as by exploratory operation without microscopical examination of the specimen. Fluoroscopy is not so accurate as radiography.

7. **Origin of Tube Casts.**—Erdman says tube casts may originate from materials normally found in the structure and composition of the kidney and blood, chemically and morphologically intact, or broken down and altered by degenerative processes, or by the action of the urine itself. Uniformity of composition cannot be looked for. The writer divides these tube casts into three main groups: Hyaline casts composed of an acid protein similar to mucin and nuclealbumin, granular casts allied to albumin and cytoplasm, and waxy casts, consisting mainly of altered blood coagulum. In addition, we find fixed and wandering cells, erythrocytes, fat globules, and various crystals. The hyaline cast has as a base mucus, a normal constituent of urine. Renal mucus occurs in long strings, varying from a slender thread to broader bands and ribbons. A cylindroid differs from a cast only in compactness, and in not entirely having filled the tubules in which they were formed. The granular cast usually has a basis of hyaline material in which granules appear as scattered points, or the cast may be entirely composed of granules. They may also be of exudative origin, or may arise from granular disintegration of blood coagulum. Fatty globules when found in casts often accompany epithelial cells or their fragment, and are regarded either as an infiltration or a degeneration. The typical waxy cast is an altered blood coagulum, the result of hemorrhage into a tubule, either from the glomerulus or directly through the injured wall of the tubule. They are usually of no great length and are usually tortuous or like a corkscrew and are true moulds of the convoluted tubules, although occasionally they may be long and straight. Less often waxy casts result from the fusion of granular epithelial matter. Tube casts of all kinds, except epithelial and fatty, more frequently come from the protein elements of the blood, through temporary or permanent insufficiency of the glomerulus than from the tubular epithelium, and in estimating their value one should bear in mind the normal wear of the kidney and that periods of exaggerated waste of renal tissue may at any time exist without exceeding the limits of repair, also the slight senile changes which are often focal and involve limited areas. Finally, tube casts are not a reliable indication of renal function.

9. **Suprapubic Cystotomy.**—Lower mentions this operation as being the one of choice in the young and in old men. The principal objection urged against the operation is the prolonged convalescence, which was a valid objection when the bladder was drained. Drainage is no longer necessary, and if the bladder is properly closed, complete cure ensues after a week or ten days. The writer closes the bladder in all suprapubic operations, save that of suprapubic prostatectomy, with more than ninety per cent. of primary unions as a result. A successful technique should include several points: The cut edges of the bladder should not be grasped with crushing forceps. The edges must be carefully coapted while the wound is on the stretch, that the stitches will not be separated when the bladder becomes distended with urine. The ligature material must be absorbable.

10. **Seminal Vesiculotomy; Its Purpose and Accomplishments.**—See this JOURNAL for June 15th, page 1294.

12. **A Plea for Longer Intervals in Milk Feeding.**—See this JOURNAL for June 8th, page 1221.

MEDICAL RECORD.

November 30, 1912.

1. J. LEONARD CORNING: Psychology of Gambling Habit. Suspense in Gaming, Drama, and Experimental Sciences.
2. SEYMOUR OPPENHEIMER: Pro and Con of Maintenance of Retroauricular Opening after Radical Mastoid Operation.
3. THOMAS J. MAYS: Effect of Present Prevention of Spread of Consumption.
4. THOMAS W. HARVEY: Claudius Galen, 131 to 200 A. D.
5. WILLIAM S. MAGILL: Importance of Local Laboratory in Medical Practice; County Laboratory.
6. M. GROSS: Disinfection of Intestine by Insufflation of Oxygen

1. **The Psychology of the Gambling Habit.**—Corning holds that it may be fairly assumed that in its more extreme manifestation, the gambling habit may disclose many of the attributes of a true psychosis, especially as observed in neurotics, or in those in whom the psychotic impulse is enhanced by paranoid or hysterical coincidences. While many persons indulge occasionally in games of hazard for mere diversion, there is always danger of the gradual establishment of addiction, especially in the case of the idle, excitable, or unbalanced. The chief suspense and excitement of gaming lies in the rapid alternation of opposing emotions, which is also the source of its chronic allurements. The stake is a contributory though subordinate attraction. In the drama the suspense curve is much less sharp than in gaming, as there are fewer alternations and less racking of the emotions in a given length of time. The suspense of original work in the experimental sciences, while in no sense insignificant, is brought about, not by an emotional riot of to and fro as in gaming, not by much gentler undulations than even those met with in the drama. The practice of gaming is to be condemned on psychopathological grounds, if for no other reason, because the suspense in games of pure hazard is arbitrarily produced, without any particular participation of the intellect, and because gaming tends to create distaste, and even to unfit its devotees for concentrated mental effort. Although the love of hazard is an inborn and even highly useful quality of mankind, it has always been shunted, as in gaming, from its true sociological intent. In its more exaggerated forms, especially when complicated by neuropathic adjuncts, the gaming habit is rather a

question of psychopathology than of morals. A rational prophylaxis must be based upon the dissemination of knowledge concerning the essentially morbid nature of the gaming habit, coupled with a dispassionate and explicit account of its inroads on mental efficiency.

3. **Effect of Present Prevention on the Spread of Consumption.**—Mays observes that as active measures have been in force for the last ten or fifteen years with a view of "stamping out" pulmonary consumption, we should be able to see some results from the efforts expended. He would have us bear in mind that history has shown that the death rate of consumption has declined independently of any specific preventive measures, chiefly because of improved general sanitary conditions made active through wise legislation. The rational means of preventing consumption resolve themselves into the inculcation of sound fundamental principles of hygiene. These principles would include wholesome and properly prepared food, the avoidance of living in damp, ill ventilated, and overcrowded dwellings, suitable and comfortable clothing, and personal and domestic cleanliness. Overwork and strain (physical and mental) should be avoided. Boys should be taught trades, agricultural and mechanical pursuits, and girls the art of domestic economy, cooking, sewing, and the proper care of a home. The value of education should not be underestimated. The hygiene of the home, workshop, and factory includes good ventilation and temperature and the avoidance of dust. Care should be taken of apparently trivial colds and coughs, accidents, and all illnesses by seeking efficient medical service, nursing, and medication. Sick, accident, and other insurance is advised, and finally the erection of modern sanitary tenements for the poor, the profits from which, when sufficiently accumulated, to be applied to the erection of other tenements of like character.

LANCET-CLINIC.

October 5, 1912.

1. I. O. ALLEN: Inebriety.
2. DAVID L. WOLFSTEIN: Tumor and Clinical Pathology of Hypophysis.
- October 12, 1912.
3. C. I. BRODMAN: Treatment of Gonorrheal Rheumatism.
4. T. D. CROTHERS: Medical Treatment of Inebriety.
5. B. F. LYLES: Synthetic Study of Latent or Larval Forms of Tuberculosis in Infants.
6. JOHN C. OLIVER and F. E. SAMSON: Bismuth Poisoning.
- October 10, 1912.
7. A. W. NELSON: Cystoscope as Aid in Urinary Diagnosis and Treatment.
8. HENRY G. GRAHAM: Direct Cycle of Protozoon.
9. A. RAVAGLI: Public Prophylaxis against Venereal Diseases.
- October 26, 1912.
10. J. E. GREIFWALD: Address on Medicine.
11. THOMAS H. HAUSTEIN: Vincent's Angina: Frequency and Importance of Recognition.
12. B. F. LYLES: Diagnosis of Tuberculosis of Infants by Laboratory Methods.

3. **Treatment of Gonorrheal Rheumatism.**—Broeman emphasizes the importance of treating every case of gonorrheal rheumatism immediately with either the antgonococcic serum, gonococcic vaccine, or bacterial derivatives, known as phylacogens; whether they are stock or autogenous products. The dose, technique, and frequency of the injection will depend upon the individual characteristics, the resulting general and local reaction, and the preparation that is being used. The combined bacterins (Van Cott) seem to be more useful than the single

strain cultures. The initial dose is between ten and twenty million, running the dose up every second, third, or fourth day, until about fifty million are being given every second or third day. Within a week or ten days improvement may be expected, but from four to six weeks elapse before all symptoms have subsided. The antigonococic serum is administered in the same manner. The local and general treatment of every acute case of gonorrhea is urged, and the early use of the bacterins or phylagoens as a prophylactic against gonorrheal rheumatism, and finally the use of the fixation test in all doubtful diagnoses as to the cause of the rheumatism.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

October, 1912.

1. GEORGE DICK: Defective Development from Arthritis in Early Life.
2. RALPH PEMBERTON: Metabolism and Successful Treatment of Chronic Joint Disease.
3. CHARLES DE VASCO: Healing of Gastric and Duodenal Ulcers with Bismuth.
4. MARY FISKE: Contribution to Bacteriology of Peritonitis, with Special Reference to Primary Peritonitis.
5. JAMES E. TALLEY: Prognostic Significance of the Atropine Reaction in Cholelithiasis.
6. LAWRENCE BROWN: Therapeutic Use of Tuberculin.
7. WILLIAM C. VOORSANGER: Rest versus Climate in Treatment of Pulmonary Tuberculosis.
8. CHARLES M. MASON: Syphilis, Diabetes mellitus and Tuberculosis.
9. PAUL H. RINGER: Prognostic Value of Arneth's Leucocytic Blood Picture in Pulmonary Tuberculosis.
10. J. F. CORRETT: Changes in Kidney Resulting from Tying Ureter.
11. ROBERT S. MCGOWAN: Clinical Manifestations of Illuminating Gas Poisoning.

2. **Metabolism and Successful Treatment of Chronic Joint Disease.**—Pemberton states that certain joint cases which have resisted all other methods of treatment after long trial, can be arrested by means of a proper diet coupled with colonic lavage. They can be so greatly modified during convalescence as eventually to differ but slightly from that of a normal individual, and the lavage can be soon dispensed with entirely. *Pari passu* with the improvement, there may occur an increased output of ethereal sulphates and of fecal bacteria, the former being in harmony with the view suggested by clinical evidence that the carbohydrates are of hitherto unsuspected importance in this connection. While the basic principles of the treatment are perhaps known to some, they are unfamiliar, if not unknown, to the majority of clinicians. It must be allowed that a large number of these sufferers can be benefited if not cured by this method, and further study may indicate that most of them belong to this class. These methods should be used only in cases suitably prepared, or in those free from demonstrably removable cause, and should be applied gradually, with due appreciation of the caloric needs of the patient and with constant regard for the weight. Close attention to detail will be followed by success, and carelessness during or after convalescence will invite relapse.

4. **Bacteriology of Peritonitis, with Special Reference to Primary Peritonitis.**—Fishbein concludes that peritonitis is most commonly associated bacteriologically with a combination of *Bacillus coli* and other organisms, usually staphylococci and streptococci, the origin being usually endogenous, appendicular affections leading in importance, the female generative organs coming next. Aseptic technique in the care of wounds and aseptic operative methods has made exogenous peritonitis rare.

As but one report of bacteriological conditions in peritonitis at the time of operation is available, it is important that both aerobic and anaerobic cultures and determinations should be made in all instances. Though the gonococcus has never been demonstrated culturally in peritoneal fluids post mortem, its absence is due either to imperfect culture methods or from lack of effort to secure it. In the writer's report twenty-five per cent. of all cases are of the primary type. In all there is a lowered resistance due to some chronic condition (atrophic cirrhosis of the liver, chronic endocarditis and tonsillitis, marasmus, diabetes, etc.), and a lowered resistance of the peritoneum to such an extent that it becomes the seat of an acute peritonitis. In other cases, where virulent organisms in large quantity and a lowered resistance are combined, the condition resembles an endogenous peritonitis (rupture of an appendix liberating large quantities of bacteria and toxic material). The term, idiopathic, can be dispensed with in regard to peritonitis, as earnest search will discover a cause for the condition. The bacteria gain entrance to the peritoneal cavity, and the peritonitis is a sign of their presence.

9. **Arneth's Leucocytic Picture in Tuberculosis.**—Ringer recalls that this blood picture consists in a differential count of the polymorphonuclear neutrophils with respect to the number of their nuclei. Arneth recognized five classes, according to the number of nuclei in this variety of leucocyte. In cases with low resisting power, cells with one or two nuclei preponderate, while in cases with good resisting power, the percentage of leucocytes with three, four, or five nuclei is increased. The writer concludes that the Arneth blood picture has a certain definite value in making up a prognosis in pulmonary tuberculosis. While it is a factor which may corroborate the general clinical picture, it should not be given preponderance to the general symptom complex presented by the patient. In a small number of cases it will predict an unfortunate outcome or will delay the deliverance of a bad prognosis. In a small number of cases it will differ from the general indications found in the patient. In the great majority of cases it will indicate the extent of the patients' resisting powers, but will add no new feature. The Arneth blood picture should be viewed conservatively, as implicit confidence in its readings will not infrequently lead to error.

JOURNAL OF NERVOUS AND MENTAL DISEASE.

October, 1912.

1. L. SALLÉ, ARCHAMBAULT: Two Cases of Special Interest for Localization of Aphasic Disorders.
2. CHARLES S. PETERS: Apparently Normal Man with Persistent Ankle Clonus.
3. JOHN H. W. REEFIN: Central Pain: Pathological Study.
4. H. MAXWELL LINDSAY: Polioencephalitis, general, in Wernicke.

1. **Two Cases of Special Interest for the Localization of Aphasic Disorders.**—Archambault presents the clinical histories and necropsy findings in two cases in which aphasia was present and thinks that they substantiate the contentions of Pierre Marie in the following points: 1. A lesion of the left inferior frontal convolution in a right handed individual does not necessarily determine motor aphasia. 2. A lesion of the left lenticular region in a right handed individual may in itself

suffice to produce permanent motor aphasia.

2. **Apparently Normal Man with Persistent Ankle Clonus.**—Potts describes the case of a medical student whose fellow students discovered in him a persistent ankle clonus while practising methods of examination. A careful study of his case failed to reveal any abnormality to explain the phenomenon or any other variation in reflexes.

3. **Central Pain. A Pathological Study of Eight Cases.**—Rhein has studied eight cases of hemiplegia which were associated with pain in the paralyzed areas. While agreeing with Monakow that the pathology of central pain is yet uncertain, Rhein feels that it is possible to draw some important conclusions from his cases. He found only twenty-four cases previously reported in literature. It seemed to him justifiable to conclude that central pain might be found associated with lesions in many localities, but cases in which the optic thalamus was implicated were in the majority. Serial sections should be made before definite conclusions were drawn.

4. **Polioencephalitis superior of Wernicke, with Report of a Case.**—Langdon reports the case of a young man of seventeen years, in whom developed the following symptoms some six weeks after an attack of influenza: General weakness, headache, gradual blindness, and limitation of upward associated ocular movements, with ptosis. Recovery was complete after several weeks of improvement.

JOURNAL OF OPHTHALMOLOGY AND OTOLARYNGOLOGY.

September, 1912.

1. CLARENCE M. HARRIS: Refraction and Use of Cycloplegics, with Especial Mention of Hyoscine.
2. ARTHUR H. ANDREWS: Trifacial Reflexes, with Special Reference to Diseases of Eye, Ear, Nose, and Throat.
3. WILLIS O. NANCE: Giant Magnit in Extraction of Foreign Bodies from Eye.
4. FRANCIS DOBIJA: Ossiculectomy.

October, 1912.

MEDICAL REVIEW OF REVIEWS.

October, 1912.

1. WALTER STEWART CORNELL: Remedial Conditions in Feeble Minded and Backward.
2. C. E. A. WINSLOW: New Art of Ventilation.
3. TOM A. WILLIAMS: Some Rife Conceptions about Dreams and Psychopathology of Every Day Life.
4. S. T. RUCKER: Neurasthenia and Psychasthenia: Differential Diagnosis.
5. SAMUEL BLUMENFELD: Treatment of Gonorrheal Synovitis.
6. GEORGE W. HOPKINS: Folly of "Investment Insurance."
7. VICTOR ROBINSON: Old Time Makers of Medicine.
8. J. VICTOR HABERMAN: Some Recent Criticisms of Psychoanalysis.

5. **Treatment of Gonorrheal Synovitis.**—Blumenfeld advises, first, removal of the exciting cause, the urethritis. On account of danger to the heart, he attends to the general health and keeps the bowels freely open, beside giving large doses of the syrup of iron iodide, and recommending an easily assimilable diet. After obtaining the opsonic index, he injects antgonococcic vaccine, 200 million bacteria. Local treatment demands rest in bed, immobilization of the joint and rubbing with blue ointment. After the acute symptoms subside, Blumenfeld applies fly blisters and has had good results with Bier's hyperemia. If fluid forms, the joint is to be opened and irrigated with hot normal salt solution, followed by an injection of iodoform emulsion. Massage and passive motion should be begun early. If ankylosis occurs, it may be necessary to break up adhesions under anesthesia.

Proceedings of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

Twenty-seventh Annual Meeting, Held at Atlantic City, N. J., May 14 and 15, 1912.

The President, Dr. J. GEORGE ADAMI, of Montreal, in the Chair.

(Continued from page 1201.)

Forms of Septic Infection Following Operation on the Tonsils and Adenoids.—Dr. HENRY KOPLIK, of New York, stated that there was very little literature on the subject of infection after the removal of tonsils and adenoids. Having had some of these cases he had classified them in the following way: In the first two or three days after the removal of tonsils the patient would have a mild temperature or the temperature might be quite high. The temperature sometimes continued for two, sometimes three weeks. A physical examination of the patient in the most thorough manner failed to reveal infection. Another form of infection was that in which the sepsis took the form of a septic endocarditis either severe or mild.

Dr. JAMES TYSON, of Philadelphia, stated that he had under his observation one case which perhaps more nearly approached the second category which Doctor Koplik had given. An adult, three days after the removal of his tonsils, was seized with a chill and fever and continued with a fever without any definite signs of local lesion. At Doctor Tyson's first visit he found a condition of sepsis with very sharp pleuritic pains, which seemed to be associated with a modified resonance which might have been an embolic pneumonia. At the end of the week there had been intermission of the fever and then recurrence. The man was evidently worse, and Doctor Tyson discovered in the opposite part of the chest a few friction râles which he ascribed to pleurisy. After that a steady progression from bad to worse took place, until the man died in profound sepsis.

Symptoms of Major Coronary Obstruction.—Dr. JAMES B. HERRICK, of Chicago, said that sudden obstruction of a coronary artery or any of its large branches was not necessarily fatal, though sudden death often followed such an accident. The view that the coronary arteries were without significant functioning anastomoses was disproved by anatomical studies, including stereoscopic skiagraphs of hearts with injected coronaries, and studies of hearts made translucent by special methods. Experiments on lower animals, as well as post mortem examination on man, proved not only anastomoses, but also that a sudden obstruction of even a large branch was not necessarily immediately fatal. Clinical observation afforded additional proof. An accurate symptomatology of coronary thrombosis could not be drawn. In some cases death was instantaneous; in others it caused angina pectoris and was followed by rapid cardiac weakness and death. Probably obstruction of smaller branches might be followed by mild precordial pains and comparatively trifling symptoms. Other cases

with obstruction of large vessels had a sudden anginalike pain, but death either did not occur or was delayed many hours or days. In those cases, the pain was extremely severe, like angina, though it might be high in the epigastrium. Shock, collapse, vomiting, and tympany made the condition not unlike some abdominal accident, such as perforation of gastric ulcer, or acute pancreatitis. The pulse was generally rapid, very weak, and the heart tones were feeble. An acute emphysema at times added to the difficulties of diagnosis. The mind was commonly clear. An acute pericarditis might occur later. The status anginosus might be present or the pain might diminish and the patient feel able to leave the bed. In some instances recovery occurred. In others death followed in a few hours, or after several days. It was important that the condition be recognized, as it enabled a more accurate prognosis to be made and also led to a more rational therapy, especially in the way of prolonged rest and the use of digitalis rather than nitroglycerin.

Edema of the Liver with Experimental Nephritis (Cantharidin).—Dr. EUGENE L. OPIE, of St. Louis, said the possibility that changes in the liver had a part in the functional disturbances which accompanied nephritis had been suggested by the occurrence of edema of the liver and gallbladder in association with experimental nephritis caused by cantharidin. By measurement of the lymph flow from the thoracic duct the attempt had been made to determine the relation of this edema to the production of lymph and to its flow through the lymphatics and sinuses of the lymphatic nodes. Coincident with the onset of edema of the liver and gallbladder there was diminution or complete cessation of the flow of lymph from the thoracic duct. At a later period, about one and a half hour after the administration of the drug, lymph flow from the thoracic duct resumed and then greatly exceeded its normal activity. During the early period of diminished flow histological examination of the regional lymphatic nodes of the liver showed the existence of fibrinous plugs, frequently formed about cells (in part endothelial) which had been destroyed by the poison. In view of the occurrence of edema it was probable that the renal irritant caused from the beginning an increased flow of lymph which finally overcame the obstruction interposed by the occluded lymphatic channels. Glycosuria occurred in association with the action of cantharidin, and was more marked in proportion to the severity of a proportionate intoxication. Changes in the liver causing liberation of sugar from the liver offered a more plausible explanation than that which referred to the appearance of sugar to renal changes. The occurrence of edema of the liver and the increased flow of lymph caused by the renal poison added weight to the view that the edema of nephritis was referable to the poison which caused the renal lesion, and was not secondary to disturbances of renal function.

Clinical Experience in the Drug Treatment of Edema.—Dr. JOSEPH L. MILLER, of Chicago, stated that the drugs selected were digitalis, theocin, and strophanthin. The patients had been in the

hospital for a week or more so that the element of rest could be largely eliminated. In all the cases of cardiac incompetency as a rule digitalis had very little effect. They did notice marked improvement in dyspnea, which was in contrast with what they found in regard to certain other drugs. In a number of patients who received strophanthin in ampoules containing one tenth milligramme, there was only a slight increase in the diuresis. The patients passed very little more urine. They received great relief from dyspnea. There were ten cases of interstitial nephritis, seven of which had received digitalis or strophanthus, to which was given theocin, four grains a dose, three times a day. The diuresis appeared in nine to eighteen hours. In these nine cases the average daily output which had been 644 c. c. increased to 2,105 c. c. after theocin was started. While these patients rapidly got rid of their edema, their dyspnea was not always modified. Here theocin had absolutely no effect. When the kidney had reached the point where it would no longer secrete urine, all ordinary measures were of little effect. It was shown in severe cases where the kidney failed to secrete fluid, it was hard to increase secretion. Fischer's solution was used without success.

Dr. H. A. HARE, of Philadelphia, said that the remarks which had just been made in regard to diuretics in renal disease carried out the idea that there could not be secretion if there was not a glandular tissue that would carry it out. If the secreting tissue was gone he did not see how any drug treatment could produce any effect. The more he studied the influence of various diuretic drugs upon the urinary flow the more convinced he was that unless at the same time the hepatic function was influenced, results would not be obtained. He believed there was a relation between the liver and the kidney which was much closer than we thought at the present time. It was of little value to make the patient pass a large quantity of fluid unless at the same time we could increase the output of solids. A much more efficient way was by purgation or tapping.

Dr. THEODORE C. JANEWAY, of New York, said that Doctor Miller's careful observation on these drugs ought to emphasize the very great importance of kidney function investigations which were being carried on, both in regard to water and salt excretion and examination of these test substances. If we got to the point where we could discriminate in the group of edemas due to excreting substance and the group of edemas which were due to definite water or salt excretion, it would go very far to simplify the treatment of these patients. The problem of the water and salt management of these cases was a matter of vast importance and complexity. He had seen cases where the response of salt restriction was admirable. Water was the best diuretic if the patient could excrete water.

Dr. E. LEBMAN, of New York, stated that when the agents discussed by Doctor Miller did not cause diuresis, he was accustomed to try some of the older diuretics and often a striking result was obtained. He remembered a case treated by Dr. J. Rudisch ten years ago with oil of juniper, a drug

that must be used with great caution. The patient was waterlogged for months and all the ordinary diuretics had been used. The juniper caused so marked a diuresis that the edema entirely disappeared. The patient was doing well when seen several months later. In several cases he had seen splendid results from the use of the infusion of apocynum. He usually gave it by rectum, diluted with water.

Dr. S. J. MELTZER, of New York, alluded to the fact that Doctor Miller had brought out a point on the selective action of drugs worth noting. Caffeine and digitalis were stimulants for the heart, but caffeine caused dilatation of the bloodvessels of the kidney, while digitalis did not. It would be very well for rational physicians to give digitalis and caffeine together in such cases.

Dr. S. SOLIS COHEN, of Philadelphia, said that following what Doctor Janeway had said about inoperable cases, there was one drug which in his hands had been quite satisfactory when combined with digitalis, and that was sparteine. It had a distinct influence in reducing blood pressure, in enlarging the volume of the peripheral arteries, and markedly increased the flow of urine and solids. It was also the practice of empirical physicians to combine with digitalis one of the vegetable diuretics, preferably potassium citrate or something of that kind, and very much better results could be obtained when these two methods were associated. He found it of considerable advantage clinically to rotate in the use of these drugs, using caffeine preparation and sparteine, either in alternation or on successive days.

(To be continued.)

Letters to the Editor.

WE SHALL BE GLAD TO COMPLY.

NEW YORK, December 6, 1912.

To the Editor:

I am very glad to learn by the editorial article in your issue of November 23, 1912, that you approve of the campaign of education on the subject of carcinoma, with the idea of getting the cases to operation at an earlier stage. There are two separate factors in this campaign. One the education of the women at large, the other the education of the medical profession.

In regard to the education of the medical profession, it is not that they do not know the symptoms of the early cases of carcinoma, but that they are either careless or negligent in regard to the individual case that comes under their care. I think, doubtless, that you will agree with me on the great benefit that could be derived, if through frequent repetition we could call the attention of the medical profession to the early symptoms of carcinoma of the uterus and carcinoma of the breast, so that each individual case would receive the benefit of the most modern and scientific treatment. I mean by that, a thorough examination and, if necessary, a microscopical examination of the tissue removed for the purpose of diagnosis.

Would you be willing to do in your journal what you suggested the lay press should do? That is, carry in display type a short article, half or quarter of a column each week or every second week, giving the early symptoms of carcinoma of the breast and uterus, and outlining briefly the proper treatment that should be followed in each and every case? Such articles would be prepared by the committee appointed at the last meeting of the Congress of Clinical Surgeons of North America.

It had seemed to me even previous to reading your edi-

torial article, that if we could get a number of the journals to carry such an article week after week, it would very soon so impress the medical profession that none of its members would carry a patient with continued bleeding without examination for a number of months, before sending her to a competent surgeon. I believe that there would be no more efficient and effectual way of reaching the medical profession than such an article with its frequent repetition.

HOWARD C. TAYLOR, M.D.

PROPOSED PHYSICIANS' TRAVEL TOUR.

NEW YORK, December 3, 1912.

To the Editor:

The visit by a party of German physicians to the recent International Congress on Hygiene and Demography has proved that a well managed travel study party of physicians can make a trip through a foreign country in a far more pleasant and profitable manner, and at less expense, than can be done by traveling alone. Clinics can be arranged in advance, lectures prepared, and visits made to the best hospitals and health resorts, with the assurance of a hearty welcome from the leading medical men of the localities visited. For those unable to speak the languages of the countries of the Continent, this disadvantage is reduced to a minimum and the benefits of the trip are correspondingly increased by travel with such a party.

The coming International Medical Congress, London, August 6 to 12, 1913, gives a splendid opportunity for organizing an American tour of this sort and plans are now ready for a physicians' travel study tour, leaving New York, July 3d, for the most important capitals and health resorts in Europe, Paris, Munich, Carlsbad-Marienbad, Dresden, Berlin, Nauheim, Wiesbaden, Cologne, Brussels, the Hague, Amsterdam, etc., ending during the week of the congress in London.

The plan of this tour has been seen and approved by Dr. A. Jacobi, Dr. T. C. Janeway, Dr. Charles G. Kerley, Dr. O. G. T. Kiliani, Dr. L. R. Williams, Dr. Wisner R. Townsend, and others. Physicians interested in such a trip should write for further and more detailed information to

RICHARD KOVÁCS, M.D.,

236 East Sixty-ninth Street.

A LITTLE IRONY ABOUT A READERS' DISCUSSION.

KANSAS CITY, Mo., December 4, 1912.

To the Editor:

Allow me to comment on the prize question, *Pruritus Vulvæ*, November 30th. I heard a sermon once on the text, "Much every way."

If you will sit down with a pencil and make a list as you read this article you will be right well amused. When you get through you will find a list of some forty-two medicines and measures for treating pruritus vulvæ. Now, suppose a patient walks into your office with a case of pruritus vulvæ. What are you going to do about it? "Much every way?"

I have often been struck with the advice, ponderously given, "The way to resume is to resume."

The way to cure pruritus vulvæ is to cure it, and if some forty-two medicines and measures don't do, try some forty-two others.

A man who is thus equipped to cure or treat pruritus vulvæ is also equipped thereby to treat most anything else that comes to his office.

At the rate of five measures or medicines a treatment you have some eight treatments to run through your stock. If you can keep this patient's courage up to the sticking point she may come some two weeks, taking a treatment each second day. Then if you have hit upon the medicine that will do the work she may come a few days more to get cured. In the meantime your patient has pruritus quite a ways, and the chances are would be ready for Christian Science.

H. N. JENNETT, M.D.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Practical Physiological Chemistry. A Book Designed for Use in Courses in Practical Physiological Chemistry in Schools of Medicine and of Science. By PHILIP B. HAWK, M.Sc., Ph.D., Professor of Physiological Chemistry and Toxicology in the Jefferson Medical College of Philadelphia. Fourth Edition, Revised and Enlarged. With Two Full Page Plates of Absorption Spectra in Colors, Four Additional Full Page Color Plates, and 137 Figures, of Which Twelve are in Colors. Philadelphia: P. Blakiston's Son & Co., 1912. Pp. xx-475. (Price, \$2.50.)

The title of this work is no misnomer, for the author has succeeded in writing a book on physiological chemistry, which is at once practical, and will serve as a safe guide for the practitioner or student of medicine. Into a comprehensive and thoroughly up-to-date book, Doctor Hawk has succeeded, in a comparatively brief space, in introducing all the salient and important subjects of this special field.

The volume is prefaced with an elaborate chapter upon the subject of enzymes, and one observes a no less thorough treatment of the chapters that follow, including an excellent article devoted solely to the feces, and an exhaustive study of the urine, normal and pathological. The mechanical parts of the book are splendidly done, and the work is embellished with many beautiful colored plates and other illustrations in color, with the addition of some valuable photomicrographs.

The Practitioner's Encyclopedia of Medicine and Surgery in 13 Large Volumes. Edited by J. KEOGH MURPHY, M.C., F.R.C.S., Surgeon to Miller General Hospital for Southeast London, etc. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1912. Pp. xx-1423. (Price, \$7.)

Shortly after the appearance of a revised edition of Gould and Fyle's *Cyclopedia of Practical Medicine and Surgery*, which is published in Philadelphia, there was brought out in London the first edition of Murphy's *Practitioner's Encyclopedia of Medicine and Surgery*. The latter is unique in its programme. We are used to seeing the items arranged alphabetically, as is done in Gould's *cyclopedia*, but here in Murphy's work the scheme followed is entirely different, and we must admit, after careful comparison, that the alphabetically arranged matter appeals to us vastly more. Murphy's book is divided into five parts: General medicine, diseases of children, life insurance problems in practice, clinical pathology, medical problems in practice, and mental disorders in practice make up part one. Part two treats of surgery, and here we find chapters on anesthetics, hospital construction, and general surgery. Part three deals with obstetrics and gynecology. Part four is given up to special regions, such as diseases of the eye, the ear, of the throat and nose and larynx, and of the skin. Part five is entitled *Special Forms of Treatment*. A word must be said here to have become necessary: to take up articles which had been omitted in the text or which had been contributed too late to appear in the original text. A not too voluminous index makes up the rest of the book. This index is arranged in three divisions: First is a general index, which might have been greatly increased; second, a very small index for quantitative prescriptions; and, third, an index for treatment.

The book, published in England and written by English contributors, is naturally based on English ideas; this we see especially in the chapters on anesthetics. In this chapter the only foreign names in the table of contents do not agree with the names in the text, which is also made in other chapters and is very unpleasant. Under hospital construction, which appears in part one, and in the reference is made to the same in the text. Life Insurance in Practice, page 402, and not 413, seems to be a very thorough chapter, although the statistics given there seem to be based only upon English observations.

A very good chapter is the one on diseases of children,

although infectious diseases, such as measles, scarlet fever, and whooping cough are to be looked for under General Medicine, where under the subtitle Infectious Diseases Caused by Bacteria, are mentioned typhoid fever, scarlet fever, measles, diphtheria, whooping cough, influenza, tuberculosis, gonorrhea, and syphilis. Leprosy is not included in the book.

Further Researches into Induced Cell Reproduction and Cancer. Volume II. Consisting of Papers by H. C. ROSS, M.R.C.S., L.R.C.P.; J. W. CROPPER, M.D., M.Sc., M.R.C.S., L.R.C.P.; and E. H. ROSS, M.R.C.S., L.R.C.P. With Illustrations. The John Howard McFadden Researches. London: John Murray, 1912. Pp. 125. (Price, \$1.)

This is the third of a series of studies bearing on this subject and aiming to show that certain substances, which the authors term auxetics, are able to induce cell proliferation, or at least cell mitosis. A careful study of the book leaves us quite unconvinced as to the demonstration of this auxetic action, and many of the figures represented as being cells in various stages of proliferation appear to be cells more or less crushed out of shape. So far as we are aware no confirmation of these findings has come from any worker of authority; and those to whom the author demonstrated his work remain skeptical.

Laboratory Methods. With Special Reference to the Needs of the General Practitioner. By B. G. R. WILLIAMS, M.D., Member of the Illinois State Medical Society. Assisted by E. G. C. WILLIAMS, M.D., Formerly Pathologist to Northern Michigan Hospital for the Insane, Traverse City. With an Introduction by VICTOR C. VAUGHAN, M.D., LL.D., Professor of Hygiene and Physiological Chemistry and Dean of the Department of Medicine and Surgery, University of Michigan, Ann Arbor. Illustrated with Forty-three Engravings. St. Louis: C. V. Mosby Company, 1912. Pp. 204. (Price, \$2.)

Laboratory methods are certainly in order, and the efforts of the authors to produce a practical work devoid of the intricacies of ultrascientific language will aid in dispelling from the minds of the general practitioner the idea that he cannot himself use these aids to diagnosis. Another feature, which also gives special value to this small work, is that only the best tests are given so as to avoid perplexing the reader. The field covered is amply large for the general practitioner to whom the book can be confidently recommended.

Digestion and Metabolism. The Physiological and Pathological Chemistry of Nutrition. For Students and Physicians. By ALONZO ENGLEBERT TAYLOR, M.D., Rush Professor of Physiological Chemistry, University of Pennsylvania. Philadelphia and New York: Lea & Febiger, 1912. Pp. vi-560. (Price, \$3.75.)

The aim of the author was to present the subjects of digestion and metabolism "in a popular manner without technical details" such as those found in the average textbook of physiological chemistry. Whether he has accomplished his purpose depends upon the knowledge of organic chemistry possessed by the reader. The tyro in this branch of science will certainly not deem it a "popular" book, while the trained chemist will miss much (notably authorities and references) that is highly prized by him, and perhaps relegate the book to the modest rank claimed for it by its author. The fact is that to such an erudite and accomplished investigator as Doctor Taylor, the preparation of a so called "popular" book is practically impossible. The work before us, indeed, belongs to a higher plane. The author is not only a physiological chemist of the first order, but an excellent pathologist as well. His analyses of the many general subjects treated—the composition of food stuffs, the theory of ferment action, digestion, carbohydrates, fat and protein metabolism, the metabolism of creatin, creatinin, and purins, autointoxication, general metabolism, the production of body heat, and the regulation of heat temperature—all studied from the pathological as well as from the physiological standpoint, endow the work with exceptional value, especially for the physiologist and pathologist whose knowledge of physiological chemistry will enable him adequately to grasp its teachings.

For and against Experiments on Animals. Evidence before the Royal Commission of Vivisection. By STEPHEN PAGET, F.R.C.S., Hon. Secretary Research Defence Society. With an Introduction by the Right Honorable the Earl of Cromer, O.M., G.C.M.G., G.C.B. New York: Paul B. Hoeber, 1912. Pp. xxxii-344. (Price, \$1.50.)

Were such books as Mr. Stephen Paget's extensively read, those who oppose animal experimentation and labor strenuously to prevent it would soon be made to realize that they are the coworkers of disease as the enemy of mankind. The results attained through this method of study during the last thirty years in medicine, surgery, therapeutics, not only in man but also in the lower animals, so clearly described in this book, emphasize its justice and morality, and indeed impose its practice as a duty. To prevent wanton and unnecessary cruelty is not solely the prerogative of "antivivisectionists" so called; it is that of all scientific men. "I certainly should not have associated myself with the Research Defence Society," writes Lord Cromer, its president, in the introduction, "had I not, as a preliminary measure, fully satisfied myself both that the main accusations brought against the experimentalists were wholly devoid of foundation, and, further, that the very eminent and humane men with whom I should be associated were animated with a detestation of anything approaching to wanton cruelty no less profound and sincere than that which I myself entertained." All physicians should read this book; it contains potent and conclusive arguments in the defence of those who labor to reduce human suffering.

Neurasthenia Sexualis. A Treatise on Sexual Impotence in Men and in Women. For Physicians and Students of Medicine. By BERNARD S. TALMEY, M.D., Former Pathologist to the Mothers' and Babies' Hospital, and Gynecologist to the Yorkville Hospital. With Nineteen Drawings in the Text. New York: The Practitioners Publishing Co., 1912. Pp. xi-106. (Price, \$2.)

The consideration of sexual matters represents one of the most important problems with which the physician has to deal, and this is especially true of sexual debility and perversions. The present volume attempts to elucidate these problems, and to some extent to solve them. The early chapters are devoted to the anatomy and physiology of the male and female generative organs, one chapter to the psychology of sex, and the rest of the book to the various aspects of impotence, male and female. Although the subject is dealt with most frankly and explicitly, it is in a scientific and dignified manner, free from objectionable allusions or suggestions. Much valuable information is presented, and the work is to be recommended to those who have frequently to advise their patients in matters sexual.

Blood Pressure Technique Simplified. By W. H. COWING, M.D. Rochester, N. Y.: Taylor Instrument Companies, 1912. Pp. viii-122.

Though small, this book contains a clear exposition of blood pressure technique. Beside giving the blood pressure curves of some thirty diseases, the influence of baths, certain remedies, and diet is briefly reviewed. The introduction to an abnormal degree of extensive quotations might be criticised, but this does not seriously diminish the usefulness of the book.

A Clinical Study of Acute Poliomyelitis. By FRANCIS W. PEABODY, M.D., GEORGE DRAPER, M.D., and A. R. DOCHEZ, M.D. Monograph No. 4 of the Rockefeller Institute for Medical Research. New York: The Rockefeller Institute for Medical Research, 1912. Pp. 187.

This monograph is a comprehensive résumé of the entire subject of acute poliomyelitis, as well as a report of the work on this subject carried on at the hospital of the Rockefeller Institute during the summer of 1911. Many cases have been studied, not only clinically, but in regard to the condition of the blood and cerebrospinal fluid at the various stages of the disease. The neutralization test is of particular interest in helping to establish the diagnosis in atypical or abortive cases, since it has been found to be almost uniformly positive after the acute phase of the frank cases. This test depends upon the power of the

cerebrospinal fluid from patients who have had the disease to neutralize active virus when injected into experimental monkeys. In the blood the authors have found constantly a moderate leucocytosis dependent upon an increase of polynuclear cells. Detailed case histories illustrate the wide variations in the clinical manifestations of this infection.

Meetings of Local Medical Societies.

MONDAY, December 16th.—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York; Medical Society of the County of Erie, N. Y. (annual); Elmira Clinical Society (annual); Hartford, Conn., Medical Society.

TUESDAY, December 17th.—New York Academy of Medicine (Section in Medicine); Buffalo Academy of Medicine (Section in Obstetrics and Gynecology); Tri-Professional Medical Society of New York; Medical Society of the County of Kings; Binghamton Academy of Medicine; Psychiatric Society of Ward's Island; Syracuse Academy of Medicine; Oswego Academy of Medicine; Ogdensburg Medical Association; Clinical Society of Elizabeth, N. J., General Hospital.

WEDNESDAY, December 18th.—New York Academy of Medicine (Section in Genitourinary Diseases); Woman's Medical Association of New York City (Academy of Medicine); Medicolegal Society, New York (annual); Buffalo Medical Club; Northwestern Medical and Surgical Society, New York; New Haven, Conn., Medical Association; New Jersey Academy of Medicine (Jersey City).

THURSDAY, December 19th.—New York Academy of Medicine (stated meeting); German Medical Society, Brooklyn; Aesculapian Club, Buffalo; Newark, N. J., Medical and Surgical Society.

FRIDAY, December 20th.—New York Academy of Medicine (Section in Orthopedic Surgery); Clinical Society of New York Postgraduate Medical School, and Hospital; New York Microscopical Society; Brooklyn Medical Society; Alumni Association of Roosevelt Hospital, New York; Saratoga Springs Medical Society.

Official News.

Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending December 4, 1912:

Anderson, John F., Surgeon. Directed to proceed to Philadelphia, Pa., to attend a meeting of the Pennsylvania Vaccination Committee, November 29, 1912. Ebersolt, R. E., Passed Assistant Surgeon. Granted one month's leave of absence, from December 15, 1912. Fricks, L. D., Surgeon. Relieved from duty at the Mobile Quarantine Station, and upon completion of his duty in the investigation of infectious and contagious diseases among the Indians, directed to report at the Hygienic Laboratory for duty. Herring, R. A., Passed Assistant Surgeon. Relieved from duty at New Orleans, La., and upon completion of investigations among the Indians of California, directed to proceed to Ellis Island, N. Y., stopping at the bureau en route, and report to the chief medical officer for duty. King, Walter W., Passed Assistant Surgeon, and Robinson, Dana E., Passed Assistant Surgeon. Directed to appear before the American Consul at Naples, Italy, by whom questions prepared by the board convened by bureau order dated November 21st will be submitted, to determine their fitness for promotion to the grade of surgeon. Simpson, French, Passed Assistant Surgeon. Granted one month's leave of absence from December

9, 1912. **Sinclair, A. N.**, Acting Assistant Surgeon. Granted thirty days' leave of absence, from December 1, 1912.

Board Convened.

Board of commissioned medical officers convened to meet at the bureau, immediately, for the purpose of reviewing and grading the examination papers of certain candidates for appointment and promotion. Detail for the board: Assistant Surgeon General W. J. Pettus, chairman; Assistant Surgeon General L. E. Cofer, member; Passed Assistant Surgeon B. S. Warren, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending December 7, 1912:

Cade, William T., Jr., Lieutenant, Medical Corps. Ordered to Fort McDowell, Cal., for temporary duty. **Collins, C. C.**, Major, Medical Corps. Left Fort Screven, Ga., for field duty. **Glennan, J. D.**, Lieutenant Colonel, Medical Corps. Leave of absence extended one month. **Hall, William E.**, Lieutenant, Medical Corps. Assignment to temporary duty at Fort McDowell, Cal., revoked. **Hart, William L.**, Captain, Medical Corps. Reported for temporary duty at Columbus, New Mexico, from Camp Fort Bliss, Texas. **Hartnett, E. H.**, Major, Medical Corps. Granted leave of absence for twenty-one days. **Lemmon, Robert**, First Lieutenant, Medical Reserve Corps. Left Fort Rodman, Mass., en route home on leave of absence for two months and fifteen days. **Lyster, Theodore C.**, Major, Medical Corps. Granted leave of absence for three months and fifteen days. **Morse, Arthur W.**, Major, Medical Corps. Relieved from duty at Fort Morgan, Ala., and will proceed to Fort Barrancas, Fla., for duty, relieving **Whitmore, Eugene R.**, Major, Medical Corps, who will proceed to New York City for duty as attending surgeon. **Register, Edward C.**, Lieutenant, Medical Corps. Granted thirty days' leave of absence.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending December 7, 1912:

Angeny, G. L., Surgeon. Detached from the *Delaware* and ordered to continue treatment at the Naval Hospital, Norfolk, Va. **Benton, F. L.**, Surgeon. Detached from the *New Hampshire* and ordered to the *Delaware*. **Cather, D. C.**, Passed Assistant Surgeon. Detached from the *Delaware* and ordered to the *Vermont*. **Clifton, A. L.**, Passed Assistant Surgeon. Detached from the *Castine* and ordered home to await orders. **Dean, F. W. S.**, Surgeon. Detached from the *Atlantic Reserve Fleet* and ordered to the *New Hampshire*. **Eaton, W. E.**, Assistant Surgeon. Detached from the *Louisiana* and ordered to the *Rhode Island*. **French, G. R. W.**, Assistant Surgeon. Detached from the *Nero* and from connection with the Alaskan Wireless Expedition, and ordered to the *Panther*. **Gates, M. F.**, Medical Inspector. Detached from command of the *Solace* and granted two months' leave of absence. **George, C. M.**, Assistant Surgeon. Detached from the *Crozier* and ordered to the *Pacific Comptrols Flotilla*. **Grieve, C. C.**, Passed Assistant Surgeon. Detached from the *Albatross* and ordered to the *Scorpion*. **Halsey, W. H.**, Assistant Surgeon. Detached from the *Sabier* and ordered to the *Acme*. **Hay, H. A.**, Passed Assistant Surgeon. Detached from the *Baltimore* and ordered to the *Sabier*. **Lung, G. A.**, Medical Inspector. Detached from the *Receiving Ship*, Boston, Mass., and ordered to command the *Naval Hospital*, Philadelphia. **Persons, R. C.**, Medical Director. Placed on retired list as a result of the Navy's accordance with provisions of section 1441 of the Revised Statutes; detached from all duty and ordered home. **Porter, F. E.**, Passed Assistant Surgeon. Ordered to the *Naval Hospital*, Port Royal, S. C. **Raison, T. W.**, Passed Assistant Surgeon. Transferred from the *Florida* and ordered to the *Solace*. **Rodman, S. S.**, Surgeon. Detached from the *Minnesota* and ordered to the *Atlantic Reserve Fleet*. **Strite, C. F.**, Passed Assistant Surgeon

Detached from the *New Jersey* and ordered to the *Virginia*. **Von Wedekind, L. L.**, Surgeon. Ordered to command the *Solace*.

Births, Marriages, and Deaths.

Born.

Henry.—In Philadelphia, on Tuesday, November 26th, to Dr. and Mrs. John Norman Henry, a son.

Married.

Bauer—Garey.—In Burlington, N. J., on Wednesday, November 27th, Dr. Harry William Bauer and Miss Florence E. Garey. **Bishop—Morphy**.—In Brantford, Ontario, on Monday, November 18th, Dr. F. L. Bishop, of Syracuse, N. Y., and Miss Florence Morphy. **Loeb—Loeb**.—In Chicago, on Wednesday, November 27th, Dr. Clarence Loeb, of St. Louis, and Miss Hedwig Loeb. **McCready—Brown**.—In Pittsburgh, Pa., on Monday, December 2d, Dr. James Homer McCready and Miss Jean A. Brown. **Peppard—Shrader**.—In Springfield, Minn., on Wednesday, December 4th, Dr. Thomas Albert Peppard and Miss Florence Elizabeth Shrader. **Rayman—Grenker**.—In New York, on Sunday, December 1st, Dr. Elias A. Rayman, of Mount Vernon, and Miss Jennie S. Grenker. **Weaver—Clarke**.—In Asheville, N. C., on Wednesday, November 27th, Dr. William Jackson Weaver and Miss Kathleen Clarke.

Died.

Allred.—In Indianapolis, Ind., on Tuesday, November 26th, Dr. George Gerald Allred, of Danville, aged thirty years. **Bailey**.—In Frankfort, Ky., on Sunday, November 24th, Dr. Alexander Bailey. **Boman**.—In Alpena, Mich., on Sunday, December 1st, Dr. Andre James Boman, aged seventy-six years. **Brackett**.—In Washington, D. C., on Monday, December 2d, Dr. Ely Brackett, aged sixty-six years. **Brady**.—In Hastings, Minn., on Tuesday, November 26th, Dr. Richard J. Brady, aged twenty-eight years. **Brayton**.—In Stonington, Conn., on Monday, December 2d, Dr. Charles Erskine Brayton, aged sixty-one years. **Carpenter**.—In Frenchtown, N. J., on Monday, November 25th, Dr. William Riegel Carpenter, aged thirty-eight years. **Cherrington**.—In Denver, Colo., on Friday, November 29th, Dr. John F. Cherrington, aged fifty-seven years. **Cushing**.—In Springfield, Mass., on Sunday, December 1st, Dr. Matthew Alvin Cushing, aged eighty-three years. **Diers**.—In Kansas City, Mo., on Thursday, November 28th, Dr. Henry Diers, aged seventy-eight years. **Duffell**.—In Salem, N. J., on Wednesday, November 20th, Dr. Charles L. Duffell. **Goodall**.—In Bennington, Vt., on Thursday, November 28th, Dr. Frank West Goodall, aged seventy-five years. **Gunn**.—In New York, on Saturday, December 7th, Dr. Robert A. Gunn, aged forty-eight years. **Jones**.—In St. Augustine, Fla., on Tuesday, December 3d, Dr. George Edwin Jones. **Kiepe**.—In Kansas City, Mo., on Saturday, November 23d, Dr. Edward John Kiepe, Jr., of Buffalo, N. Y., aged forty-six years. **Labry**.—In Morganza, La., on Saturday, November 16th, Dr. Paul Octave Labry, aged sixty years. **Moore**.—In Indianapolis, Ind., on Monday, December 2d, Dr. Henry Moore, aged seventy-two years. **Orme**.—In Los Angeles, Cal., on Friday, November 29th, Dr. Henry Sayre Orme, aged seventy-six years. **Reiff**.—In Albion, Ind., on Tuesday, November 26th, Dr. Nathan G. Reiff, aged fifty-three years. **Rich**.—In Maynard, Mass., on Friday, November 15th, Dr. Frank U. Rich, aged fifty-five years. **Ritter**.—In Bethlehem, Pa., on Wednesday, December 4th, Dr. S. J. T. Ritter, aged thirty-six years. **Schweder**.—In New York, on Saturday, December 7th, Dr. Edw. F. Schweder, aged ninety years. **Stockham**.—In Los Angeles, Cal., on Monday, December 2d, Dr. Alice Bunker Stockham, aged seventy-nine years. **Sullivan**.—In Brooklyn, N. Y., on Friday, November 29th, Dr. Maurice Francis Sullivan, aged forty-eight years. **Thompson**.—In Bolmar, N. J., on Tuesday, December 3d, Dr. Charles Henry Thompson, aged sixty-nine years. **Ward**.—In Elizabeth, N. C., on Wednesday, December 4th, Dr. Nathan G. Ward, of Philadelphia.

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THE CLINICAL MEASUREMENT OF DEFECTS IN THE CENTRAL VISUAL FIELD.

BY PERCY FRIDENBERG, M. D.,
New York,

Junior Surgeon, Eye and Ear Infirmary.

The determination of the boundaries of the field of vision is a well established procedure of clinical examination, as indicated not only by its use in general practice and the routine application by the ophthalmologist, but also by the gradual improvement and simplification of method and the mechanical perfection of the perimeter. In fact, to many, perimetry alone is all there is to the investigation of the field of vision. The examination of the centre of the field, on the other hand, has until recently had less attention paid to it than its practical importance deserves. This may be attributed, in part, to the lack of suitably simple, accurate, and scientific apparatus for the localization, detection, and mapping out of small defects, of what we may term "silent areas," or such as the blind spot of Mariotte, in the retina. The value of a quantitative test by which the dimensions of a scotoma might be determined accurately and its increase or diminution established beyond doubt, must be recognized by all. The morbid conditions which are characterized by the development of partial degeneration in the optic nerve, expressed clinically as an absolute or relative loss of color vision at the point of macular fixation, are not uncommon. These forms of retrolubar neuritis are often toxic amblyopias due to abuse of alcohol and tobacco, or less frequently to poisoning by lead, turpentine, filix mas, carbon disulphide, and so on. A second large group develops in the course of suppurative accessory sinus disease as an expression of an autointoxication of the optic nerve by retention of pus or decomposition products in its immediate neighborhood. The significance of peripheral limitation, of sectorlike, quadrant, or hemianopic defects in the visual fields in the symptomatology and diagnosis of accessory sinus disease has been recognized for some time. Of late the rhinologists are paying attention, as well, to the centre of the visual field. In addition to the central or macular scotoma it has been found that supuration in the posterior ethmoid cells or sphenoid sinus is invariably attended, and that at a very early stage, by a characteristic enlargement of the blind spot of Mariotte which corresponds to the entrance of

the optic nerve head into the retina. As is well known, the optic papilla being destitute of terminal ganglionic or retinal elements, and consisting as it does of nerve fibres and vessels, choroidal and scleral tissue, is itself insensitive to light and form; in a word, blind. The dimensions of this blind spot vary somewhat, as does its position in different refraction states and individuals. It is generally about 15° to the temporal side of the fixation point, with its centre slightly below the horizontal meridian, and measures about 5° wide by 9° high, appearing as a vertical oval. Certain fundus conditions, plainly visible with the ophthalmoscope, such as opaque nerve fibres, myopic crescent or conus, coloboma of the nerve sheath, or any dense deposit (pigment) or patch of atrophy bordering on the disc, will obviously increase the size of the blind spot. Given normal appearance of the eyeground, however, an increase in the area of the functionless portion indicates unmistakably a degeneration, or at least loss of conducting power in those optic nerve fibres which supply the retina immediately about the papilla. It has been shown that these fibres run peripherally in the nerve; that is, they are superficial, and directly under the nerve sheath. This topography explains their vulnerability in accessory sinus disease, and the retrolubar location shown by the absence, at least at first, of fundus changes indicates that the nerve has been affected in its canalicular portion lying between the optic foramen and the point of entrance into the globe, a stretch of some thirty-five millimetres on which the nerve is in closest relations, spatial, vascular, and nervous, with the accessory cavities.

There is at present no reliable, simple, and accurate apparatus for mapping out the central visual field (campimetry) or determining exactly the position and dimensions of central defects (scotometry). Most of the campimeters are merely dark screens or large blackboards placed at a distance from the patient of from three to seven metres. On these backgrounds or plane projections the fields, or defects in them, are plotted by various devices, such as inserting pins or markers. The procedure is laborious, slow, and cumbersome. The results cannot be listed or recorded except after a complete translation and reduction in scale, which again wastes time and labor. The backgrounds themselves are rarely calibrated accurately on a scientific basis of degrees and visual distance, and finally the plane projection is liable to be misjudged by eyes accustomed to the spherical projection of the perimetric chart. The punctuometers and scotometers for short range use are but little better. Here again we miss a registration scheme, indication of meridians, and division

into degrees at a definite testing distance. The test objects are usually left to the discretion of the examiner. There is no provision at all made for standard or unvarying illumination. There are no charts and not even a scheme of definite and uniform records.

The difficulty in testing for central defects, which are frequently small and may be limited to the fixation point and its immediate vicinity, is twofold: The possibility of insuring absolute fixation, and the coarseness of the perimetric test objects and arc divisions. In using the perimeter, one eye is covered by a shade or bandage and thus excluded from vision. Accurate and unwavering fixation with one eye, under these conditions, is by no means easy. The eye tires rapidly, and even before it tires, has a marked tendency involuntarily to glance suddenly toward the test object, as soon as the latter is sensed anywhere in the periphery of the visual field. This instinctive aberration is difficult to inhibit, being seen in patients who have been through the tests repeatedly, while in those who are new to it, in children, or nervous patients, the tendency is so marked and disturbing as sorely to try the patience of the examining surgeon. Again, any defect of vision in or about the macula of the examined eye, the very condition we are looking for, will greatly interfere with central fixation, while slight movements of the eye, sufficient to bring a sentient retina into relation with the test object but too slight or rapid to be detected by any but the most intent observer, may mask the presence of a small defect or a relative loss of function.

In testing for small scotomata it is necessary to have minute test objects, so that areas of not more than one degree square may be plotted. Such small objects, especially when colored, may not be seen, or not seen well, and at the required distance and visual and perimetric angle, if badly, unevenly, or unsteadily illuminated. For this reason, day light with its frequent variation, and the perimeter as ordinarily used are unsuitable. Moreover, the perimetric arc with attached color discs moving slowly by rack and pinion over comparatively large space units, is unsuitable for mapping out small defects. The test object must be moved very rapidly over a minute area, advancing by almost imperceptible degrees in a sort of vibration, the advance being along, and the oscillating motion across the meridian we wish to measure. It is unnecessary to go into the details of physiological psychology and physiological optics on which these practical requirements are based. They are well known. The perimeter, finally, is quite unsuitable for measuring the blind spot in any but the roughest way, as the arc is marked only at distances of 10° , and if we have a fixation point on the arc this changes its position with every change of meridian.

We require a stationary black background corresponding to an area about 10° to 15° square, divided into degrees at the usual perimeter distance, i. e., ten to eleven inches, which can be readily attached to the arc of the perimeter and moved along until the marker at its central zero point corresponds as closely as possible to the projection of the macula or of the blind spot, 15° to the temporal side, as the case may be. To insure absolute fixation without

fatigue or discomfort, we may have recourse to binocular, stereoscopic fixation, a principle applied with success by Haitz. In this way the eye under examination is kept steady by its fellow; not only the central marker but the whole stereoscopic combination figure forms a sort of fixation frame, so that even in the presence of a central scotoma there is steady fixation. The patient is not conscious of the physiological exclusion of one eye from the visual act and function test.

Abducting spherisms of about four diopters plus, corresponding to the test distance, serving as a stereoscope, may be attached to the head piece of the perimeter, a small central projection or partition serving to separate the fields of the two eyes. The test objects, not more than one or two millimetres square, must be held in the hand so as to be moved with the requisite rapidity and evenness, and with minute excursions. Rapid change of color should be possible, and the illumination should be constant. While these requirements can be met more or less with the usual color carriers, it seems to me that a single color test with concealed, artificial light source, adjustable diaphragm for accurately regulating the size of the visible test object, and rotating disc for rapidly bringing one color or another into view without change of position, would be a great improvement. Such a color carrier would have the appearance of a diminutive electric ophthalmoscope (obviously without lenses); the disc being only about twenty-five mm. or one inch in diameter, and the miniature lamp of the smallest dimensions throwing light only through the small central aperture to be occupied by the colored glass or celluloid of the test objects. Instantaneous and intermittent exposure could be effected by suitable arrangement connected with the lamp contact, or by means of a small spring sliding shutter moving up and down in front of the diaphragm, as in the Fridenberg central color test. The necessary current could be supplied from a single pocket cell, or a cell in the handle of the color carrier.

60 EAST FIFTY-EIGHTH STREET.

A UNIQUE CASE OF ARTIFICIALLY INDUCED STERILITY.

By WILLIAM J. ROBINSON, M. D.,

New York.

Chief, Department of Genitourinary Diseases and Dermatology,
Bronx Hospital and Dispensary.

The following case, sent to me by Dr. A. Hymanson, of this city, possesses sufficient interest to make it worth recording:

CASE.—L. B., thirty-two years old, married three years. The wife was very anxious to have a child and they had been to a number of physicians, but to no avail. Libido was present in a high degree and potentia coeundi, while not very powerful, was satisfactory. Denied ever having had venereal disease; confessed to masturbation when a boy, but in a moderate degree only. Examination of the expressed prostatic fluid showed it to be normal; the fluid expressed by stripping the seminal vesicles showed complete absence of spermatozoa. Examination of the ejaculate obtained by normal intercourse in a condom showed what appeared to be macroscopically normal semen; but

*Read before the Northern Medical Society of the City of New York, November 12, 1912.

the microscopic examination again showed the complete absence of spermatozoa. The urine was perfectly clear and normal chemically and microscopically; no trace of shreds. An examination of the testicles, however, showed a peculiar state of affairs. There were a number of hard spots and nodules. The globus major of the right epididymis showed almost stony hardness. I accused the patient then of concealing the truth. I told him that he must have had a gonorrhea or some other inflammation or some kind of traumatic injury. I told him that it was no use denying it, for *something* he must have had there, otherwise the testicles and the epididymides would not have presented such an appearance.

He then told me the following story; he said he had never told it to any physician because somehow or other he felt ashamed. But as I insisted that he must have had something the matter with him, and as I was a "professor," he would tell it to me.

He was born in Russia. At the age of twenty-one years he was drafted into the army. As the treatment of the common soldier in the Russian army was exceedingly coarse and brutal, many young men feared the service as much as people here feared hard labor in the penitentiary, and they tried to escape it by all possible means. They underwent various mutilations so as to be declared unfit for military service. In spite of the fact that when the wilful mutilations were discovered they were punished severely, those unhappy young men preferred to take their chances; anything to avoid Russian military service. Some had cataracts produced on their eyes; some had the thumb of their right hand amputated so that they could not pull the trigger; some had their hip joint dislocated, others had immense scrotal hernias produced, or hydroceles. Still others took cardiac depressants for a long time, so that when the time for examination for military service came, their heart was very weak and rapid, etc. What this young man had done to himself was as follows:

He had a slit made in the scrotum, a foreign body of the exact shape of the testicle was introduced, there was an injection of some irritating stuff made so as to produce inflammatory adhesions. The idea was to make the medical examiners believe that the man had an abnormally large and inflamed scrotum, and three testicles instead of two, and this would unfit him for long marches and he would be declared unfit for military service. Whether infection from the outside took place or whether the injection was too irritating, the scrotum and the testicles swelled up enormously; he said up to ten times their normal size, which was perhaps some exaggeration. He was in great agony for a long time. As ill luck would have it, the medical examiners recognized the deliberate nature of the injury and he was taken to the hospital where he stayed five or six months before he got well. The foreign body was of course removed. After he got out of the hospital he was sent to a disciplinary battalion where the treatment was much more brutal than in the ordinary battalions.

Whether my efforts to restore the permeability of the epididymides and the vasa deferentia will prove successful remains to be seen. I shall report the treatment and the results of it later on. In the meantime I thought the case worth recording merely for its etiology.

12 MOUNT MORRIS PARK, WEST.

WHAT EUGENICS DOES NOT MEAN.

BY MEYER SOLOMON, M. D.,
Chicago.

The study of heredity and of environment, of infant mortality, of prostitution, of the venereal diseases, of all physical, intellectual, and moral, inherited, or acquired defects is alike of interest to the student of medicine and eugenics. The problems of medicine, biology, sociology, and eugenics are closely interwoven one with the other. Every

physician who is interested in the question of prophylaxis should become interested in the problems of eugenics and imbued with the spirit of investigation with a view to their solution.

The writer fears that many of his professional fellow workers misunderstand the aims and objects of the science of eugenics. It is not intended that this paper should be an exposition of the science and practice of eugenics or race culture, but rather an effort to correct some of the false notions concerning the true aims and objects of this new science.

Eugenics, let it be known, is a new science. True, Plato, in the fifth book of his *Republic*, already expressed ideas of decided eugenic import. But with our high standards of morals and ethics, our ideas of the great responsibilities of marriage for father and mother, and our increasing interest in the offspring, surely we present day eugenists cannot agree with Plato's proposal to have "children of the State," who should be the offspring of fathers and mothers chosen by the State for their good qualities, but who should not know who their fathers or mothers were because these latter also would not know their own children since they would be permitted the most free sexual relations, without matrimonial bonds, but merely as the fathers and mothers, *en masse*, of the future "children of the State." And there is George Bernard Shaw (1) who pleads for "freedom for people who have never seen each other before and never intend to see one another again, to produce children under certain definite public conditions, without loss of honor." And yet again, there was Nietzsche, who was in favor of the most rigid eugenic practice, under which he would permit the survival of the fittest and the murdering of the unfit in Nature's cruel, relentless way, just as, with all other forms of life, including animals below man, in the natural or the wild life, the unfit are brutally and unhesitatingly murdered and being murdered, as in a veritable slaughter house. This would be nothing less than a return to the order of the beast.

Huxley has said that success in the cosmic struggle for existence was opposed to all that was ethical, and consequently for evolution to be carried on unhampered, by Nature's own method, we should have the survival of the fittest, but in a most unethical manner. Therefore, to apply ethics or morals to the constant combat for survival between the individuals of the same species, between different species, communities, States, and nations, we should have to interfere with the blind, murderous method carried on by Nature. And that is just what we have done. In man, consciousness is developed to a high degree. By his consciousness he is made aware of certain conditions which exist about him. And, while adapting himself to these situations as best he can, instead of remaining an inactive, passive agent, he assumes an active part in the fight and makes heroic and successful efforts to mould and shape his environment, the conditions which he finds, more nearly or closely to suit or measure up to his inner needs, longings, yearnings, hopes, cravings, desires, and ambitions. And so he intelligently controls, directs, and guides Nature. Not that we have man and *his* nature—that is, not

that the world and its inhabitants were pre-ordainedly made to serve man; but man by the proper exercise of his consciousness and intelligence has made himself master of the situation, made all else below him serve his best needs, and directed Nature's course. Thus he has changed the face of the earth. He has made use of the various forms of matter and energy about him. Yes, in the organic world, even among animals, he has controlled their matings, and, as a result of observation and experimentation, he can now produce at will new races of plants and animals. Man has at the same time made the struggle a more ethical and moral one. He is making success in the struggle for existence and progress in evolution mean progress in morality and worthiness. Founded on a scientific understanding of Nature's laws, by the gradual development of an ever broadening sympathy and altruism, of the feeling of the brotherhood of man, he has made less cruel the brutal struggle for existence. Not that there has been a lessening of this struggle, but some of the rough prongs which formerly pressed into the bodies of its victims have been worn off or displaced. There has been a gradual transition from an extensive to an intensive struggle. The combat is just as keen, just as great, only it is finer, more delicate, less savage. What is more, this has been accompanied by a transference of the struggle from the physical to the psychical sphere. The struggle of to-day is that of mind against mind, rather than body against body. Not that the body is no longer necessary. The body is and always will be necessary, but only in so far as it serves the psyche or the mind, or the nervous system, if you will. Go up the scale of evolution, trace the rise of races, observe the development of children, study abnormal mental types, and you get the same lesson. As consciousness becomes clearer and clearer, as we become more and more aware of the conditions about us, as the mind develops to a greater and greater extent, so much more does it become the master of the body. It is a conscious, intelligent control and guiding of the body, and later orientation of the individual to his environment in his social relations. Just so by child study and child psychology, the study of the defective and delinquent, the study of abnormal psychology or psychopathology, and largely through the results gained by psychoanalytic work, particularly of the Freudian school, there has been pointed out to us a method of reeducation, and what is even more important, of education, which will permit us more consciously, purposively, and directly to control and guide our mental mechanisms, so as to prevent any twists or kinks or disorders of the human machine and thus prevent a great percentage of the tremendous mass of pathological or abnormal mental states. These latter include the idiot, imbecile, feeble-minded, juvenile offender, criminal, prostitute, chronic inebriate, pauper, borderland cases of insanity, insane, etc.

Prior to this, however, we had already set into motion the control of physical diseases and abnormalities of the body, so that there now have developed to a high degree our methods of public sanitation, municipal hygiene, control of contagious

and infectious diseases, inspection of schools, hospitals, dispensaries, asylums, etc. The treatment of the insane underwent gradual changes, and, as evidenced in the case of the juvenile offender, the treatment of the criminal is likewise undergoing a change from the standpoint of our attitude toward him. Religion and international relations likewise show the modern trend toward reflection and deliberation. There is a great mass of feeble-minded, epileptic, defective, dependent, and delinquent classes which present a formidable problem. These questions are, however, being investigated from many points of view, the lines of attack are diverse, and there are many brilliant workers in the field to eradicate these evils that burden the community, this source of misery, wretchedness, and unhappiness in the world, by finding out the causes and removing them, if possible. This has given birth to the science of eugenics. It had its birthplace in the highest emotions, the kindest feelings, the highly developed sympathy and altruism of mankind. The late Sir Francis Galton was the august master who coined the name and founded the science. Professor Karl Pearson and his able followers in England have been doing excellent work by their biometric methods. The experimental observations of Mendel, brought to the attention of the thinking portion of the world only about a decade ago, have been followed by splendid research work by Bateson, Punnett, and others. In England there is a Eugenics Education Society. In Germany such men as Rüdén are interested in the problem. In the United States the American Breeders' Association has formed a eugenics section, many earnest men have joined hands in efforts for the spread of the movement and all that it stands for, and the Eugenics Record Office at Vineland, N. J., directed by Doctor Davenport, has got into communication with, and is endeavoring to secure the collaboration of the hospitals for the insane, the schools for feeble-minded and atypical children, and all other institutions containing pathological, abnormal, defective, delinquent, and dependent subjects, with a view to gathering reliable statistics as to family history, causes, life histories, etc.

While this great amount of observation and collection of data is being carried on, many opinions are being expressed as to the best way to prevent the propagation and increase in numbers of the undesirable or unfit members of the community. There are already several subdivisions of the eugenic movement. But whether one be Darwinian or Weismannian, biometrician or Mendelian, it is necessary that certain grave misunderstandings or misinterpretations of the general reading public be corrected.

Every new movement, every new idea or reform is greatly misunderstood. People do not like a change unsuited to their ideas or that they think is not in accord with their previous way of thinking. A little inkling is obtained of what the new movement is, there is a rush to conclusions or generalization of a sweepingly adverse nature, and "there's an end on it"—the individual is opposed to the new idea, new movement, new method of treatment, or what not. So firm and fixed is he in

his determination that he refuses to listen to the other side, will not read opinions or articles supporting the contrary view, in fact, will not permit himself to hear a true statement of the assertions of the other side. He probably entirely misunderstands the situation. But he has made up his mind and will not and does not want to change it. Is this not frequently the cause of religious persecution and of wars? How much trouble in this world is due to misunderstanding! People positively refuse to consider or look at the under side of things. They see only what is on the surface, what they have been taught and have become accustomed to see. Most of the misery about us, the disease, crime, degeneracy, unhappiness, and disagreements are due to ignorance and misunderstanding.

Oh, God! that men would judge a little clearer,
Or think less harshly when they cannot see.

Then they would draw a little nearer to each other.

So it is with psychanalysis and many of the opponents of the Freudian school; and so it is with eugenics. Let us take up some of the things that eugenics does not mean and explain the eugenists' side of it so as to clear the air and free the "stuffed mind" of that perilous stuff of misunderstanding that weighs upon the mind and interferes with clear, unbiased thinking, reasoning, and judging.

At the very outset it should be understood that the aims and objects of eugenics are the highest and noblest in mankind. I must here cite a favorite quotation from the last chapter of Galton's *Memories of My Life* (2). It sums up the ideal of eugenics:

I take eugenics very seriously, feeling that its principles ought to become one of the dominant motives in a civilized nation, much as if they were one of its religious tenets. . . . Man is gifted with pity and other kindly feelings; he has also the power of preventing many kinds of suffering. I conceive it to fall within his province to replace natural selection by other processes that are more merciful and not less effective. This is precisely the aim of eugenics. Its first object is to check the birth rate of the unfit instead of allowing them to come into being, though doomed in large numbers to perish prematurely. The second object is the improvement of the race by furthering the productivity of the fit by early marriage and the healthful rearing of their children. Natural selection rests upon excessive production and wholesale destruction; eugenics on bringing no more individuals into the world than can properly be cared for, and those only of the best stock.

This is indeed a high and worthy aim. Because we may not, at least in the immediate future, attain our end, is no reason why, while adapting ourselves to present circumstances, existing sentiments, customs, and laws, we should not endeavor to help reach the final goal by inculcating into the people the true principles, aims, and objects of race culture.

First let me insist that eugenics is not a cureall. We do not say that it can rid the world of all its misery, its unhappiness, its poverty, its disease, its crime, its pathological specimens, all that is bad and low. We should not be stating the truth if we said this. Let us be true to ourselves. Let us not make rash, foolish, or unsupported declarations. Eugenics is a new science, and, were we to make baseless statements, it might soon fall into disrepute and there would justly be an opposing attitude of general disbelief. We want our opponents to doubt, to hesitate, to ques-

tion before they accept any belief or any statement. No man's word is law or gospel truth. Doubt and question until you are convinced. It shows that you are thinking. I do not refer here to those individuals who doubt everything and can be convinced of nothing. Most of them are allied to that class of unfortunate individuals who are suffering from *folie du doute*, psychasthenia, neurasthenia, etc. No single remedy is a cureall. We do not expect a true Utopia to follow the introduction of practical eugenic methods. But all in all, given a fair opportunity to get into working order, once it is in full living, it is and will be the most important single factor for racial improvement. And where is there a more worthy object than racial improvement? The efficiency, success, improvement, and happiness of a nation depends on the existence of a similar condition in the individuals composing it. A sound nation means sound citizens. The object, then, of eugenics is the upbuilding of a stable, permanent, and more happy society, of an individual of whom we can say *mens sana in corpore sano*.

We do not propose the production of a uniform, single type of man. That would be the height of folly, seeking the ridiculous. Although death is not necessarily involved in life, as is shown by the existence of certain creatures that are potentially immortal, for the infusoria, as stated by Weismann, Woodruff and Jennings (3), have the potentiality to perpetuate themselves indefinitely by division, yet, as Minot (4) has pointed out, the most striking difference between these lower organisms and the higher is that in the latter larger organisms, age and death are the result of greatly increased differentiation. Death, then, according to Minot, is but the price we pay for the enjoyment of our more complex life. And age and death, though not inherent, necessary accompaniments of life, are inherent in that differentiation which makes life worth the living. Moreover, the production of a uniform type of man is impossible because of the existence of variation. To put an end to variation would result in the arrest of all progress, for the simple but important reason that organic evolution depends upon the struggle between individuals of various variations with the selection of those variations best fitted to the environment. Thus we see that variation is essential to give richness and fullness to life. This world would be a very dull place were all the people the same. Variety is the spice of life. Monotony benumbs the senses, dulls the mind, stifles ambition, leads to mental pause. "Do you suppose Adam could have stayed in that fat, lazy, silly garden after he became alive—with no work, no knowledge, no adventure, no chance to do wrong? As for earning his bread—the only plausible hell I've ever been able to picture is one where there was nothing to do—no work, no puzzling, no chances to take, no necessity of thinking. Now isn't that an ideal hell?" (5).

No, we do not want a single type. No particular type is ideal. We want all types. But our object should be to get the best specimens in or representatives of each type. Taking occupation, for example, we want the best engineers, the best lawyers, the best ministers, the best doctors, and so on

through the list. But we need all the types, every one of them. It takes all kinds to make a world. We do not intend to interfere with types so long as their activities are not antisocial.

Eugenics does not have for its object the production or the creation of genius or talent at will, based on intermarriage, as, for instance, of musicians (10). What we are striving for is the giving of more opportunity, so that genius or talent may not be suppressed or destroyed by environment. It is here that changed economic conditions, the eradication of or diminution in infant mortality, proper home training, more generalized education, the opportunity for expression of individual qualities, the control of infectious and contagious diseases including the venereal diseases, and proper mental hygiene find their places high in the scale. We are not deaf to the cry of "more opportunity, more opportunity."

And some there are who accuse us of advocating loveless marriages. We advocate nothing of the sort. What we are striving for is intelligently to guide and control the course of our affections, to avoid the danger posts and recognize the pitfalls and precipices. We want each individual to know just what to avoid in the way of physical and mental disease, for the good of the parents and offspring. After two persons have fallen in love, since love is blind and lovers are said to be foolish, we cannot expect to accomplish anything by reasoning or advice. Here again it is the case of prevention *versus* cure. We wish to inculcate the principles into the offspring, so that when they reach the age of matrimony they will have their bearings, they will meet the problem of selection of a lifelong mate from a certain point of view, with a definite attitude. The individual will be, so to speak, eugenically oriented.

They tell us that human nature would most certainly never permit any interference whatsoever with the absolute freedom of selection of marriage mates. Does it really not seem foolish to direct the course of overpowering love? Yes, when the love has come and is overpowering. But before the love has swept one off one's feet and carried one on a perhaps dangerous course, then is the time when one's mind is clear, and reasoning and judgment are not in abeyance. Remember that we have among us to-day a multitude of marriage restrictions of all sorts. There are restrictions based on religion, on color, on race, on language and customs, on social position, on financial status, on consanguinity, and even on abnormal physical or mental states. Most of these prejudices or marriage restrictions are traditional. For generations all of us have been brought up to respect them, so that now they seem to us very natural, proper, and just, and, as a matter of fact, how many of us are really aware of their existence? Has not monogamy been burnt into the consciences of all civilized nations?

The eugenicist is not in favor of doing away with sympathy for his fellow being and with the brotherhood of man. Did not the idea of eugenics spring into being prompted by those very feelings? It has for its goal the prevention of the unnecessary, widespread, cruel elimination of certain members

of society who, we know beforehand, are born only to live to die. We feel keenly for the unfortunate unfit; and so acute is our feeling and sympathy that we wish to prevent the suffering of those who we know are doomed to perish miserably, after being buffeted about heartlessly on the rocks of misery and wretchedness.

The practice of eugenics is not opposed to religion. It reaches out over religion and desires to promote the cultivation of the same morality and ethics that true religion should teach. It transcends all religions. It unites all religions on a common fighting ground. It should draw its adherents from all good men of whatever religion, from all men who desire to better the world, to prevent suffering and misery. Eugenists wish to make eugenics a part of religion—to make it the religion of the religions of the future. Dean Sumner in Chicago has set the ball rolling. As dean of the Cathedral of SS. Peter and Paul he has given notice of his intention hereafter to join no couples in wedlock unless they present health certificates from reputable physicians showing them to be free of hereditary or contagious disease and fit to enter matrimony with a clean bill of health.

It is not our intention to breed for qualities or to experiment on man as we would on a studfarm. We wish simply to teach the laws of heredity and the evil effects of bad environment and vicious methods of living so far as they are surely known from observation and recording of man's experiments upon himself. Let us learn our lesson from Nature's blunders. It is a lesson very dearly paid for in blood and tears by man, but so long as he finally learns the lesson, gets full benefit therefrom and sees the error of his ways, the suffering will not have been in vain. Man is a slow thinking animal. Nature's progress is slow. But though evolution and progress be slow, they are so much the more certain and permanent.

You will hear some say that adherents of race culture wish to deny to the poor the precious privilege of marriage and parenthood. The truth of the matter is that we think the time is ripe once for all to upset the previously prevailing and still prevalent idea that almost anybody is good enough to marry. We want to teach the great responsibilities of marriage and parenthood, with the hope that our passions and our emotions will be duly guided by calm and sane reason and intelligence. The woeful lack of opportunity so universally existent among the poorer classes is fully appreciated by every clear thinking, broad minded, sensible eugenicist. The eugenic programme does not include division of the population into social classes based on financial status, but into worthy and unworthy. Our supreme efforts will be devoted toward the betterment of social life, the correction of economic conditions, and the giving of increased opportunity.

We do not wish to return to the old method of unrestrained and free natural selection, employed by Nature when not controlled by man. We are not at war with charity, philanthropy, free medical aid, hospitals, dispensaries, etc. But we do ask that, instead of devoting all of our energies toward the struggle with the end product, just a little

energy be expended in the more important question of prophylaxis, toward the stamping out of these conditions at their very sources of origin. In this way only can we expect to correct so many of the evils which have come about as a result of the suspension of the purifying action of natural selection. If left to take their own course these evils are surely not self corrective but cumulative. We propose to interfere and eradicate them.

"And what about the question of infant mortality?" some anti-eugenists cry. Our answer is that we are in favor of the diminution and elimination of this terrible scourge of the human race. Most children born are fit to live, but are outrageously murdered by gross neglect. Every physician should read wise Dr. Abraham Jacobi's recent presidential address¹ delivered at the last Atlantic City meeting of the American Medical Association on the subject of *The Best Means of Combating Infant Mortality* (7). Let him digest what Jacobi says and he will realize how important is the problem of infant mortality, that great branch of medical sociology.

It is estimated that approximately one third, more or less, of those born die before reaching the age of five years. Of deaths occurring in children under two years of age (eighty per cent. of which occur before the end of the first year), the causes of death are gastrointestinal affections in forty-two per cent. of cases, impure air diseases in twenty-three per cent., congenital defects and accidents in nineteen per cent., acute contagious diseases in six per cent., and other causes ten per cent. (8). When we consider that in children gastrointestinal diseases are said to be ninety-five per cent. preventable, impure air diseases seventy-five per cent., congenital defects and accidents fifty per cent., acute contagious diseases one hundred per cent., tuberculosis one hundred per cent. or less, and some of the other affections absolutely preventable (8) with the advent of modern prophylactic methods, we can at once appreciate how much better chance of surviving the child of to-morrow will have compared with the child of to-day or yesterday. Moreover, much of the child damage and civic unworthiness which later develops and manifests itself by dependency, delinquency, defectiveness, and general antisocial conduct is largely preventable by the inculcation of proper physical, mental, and moral principles of living up to the age of seven years at home, and thereafter both at home and in the school by correct attitudes and viewpoints in life gained by education, by proper regulation of child labor and employment of women, by care of women during pregnancy, especially for several weeks before and after labor, by the eradication of venereal diseases, alcoholism, and the evil effects of the racial poisons in general, and by the establishment of preventoria, rather than sanatoria, for physical and mental cases in their incipency. We are, as you see, ardent supporters of the antiinfant mortality movement. The bugbear of infant mortality is one of the main points of attack for eugenics. Once an individual is brought into the world we should give him our best care and attention, even though positively totally

unfit. We must go further than this—once the male and female germ cells have united, we should do our utmost to protect the fertilized ovum and later the growing fetus from all manner of injury. Thus we are in the field to fight criminal abortion. At the same time, however, we wish to prevent unnecessary child murder and child damage. We want quality and not quantity—better babies, better cared for, not more babies than can be properly cared for. And we do not wish to view the constant, undiminished propagation of the feeble-minded and defective classes. That is the class for which negative or restrictive eugenics is proposed.

Our aim is not only to give a child a clean heredity in so far as lies in our power, but also to give it the best possible bringing up. For what would be the use of bringing good babies into the world if they could not be given the best possible chance in life? For this reason I do not approve of separating eugenics from eugenics, as some are inclined to do, on the ground that eugenics stands for good environment and eugenics for good heredity. Although Karl Pearson has tried to read heredity, and heredity alone, into the definition of eugenics as laid down by Galton, I cannot see it that way. Sir Francis Galton's definition of eugenics states that it is "the study of agencies under social control that may improve or impair the racial qualities of future generations either physically or mentally" (9). He does not prevent environment from inclusion under the term eugenics. It is the science of being well born and well bred. It has to deal, not only with the problems of heredity or Nature, but also with the problems of environment and nurture. Good heredity and good environment are opposite in their effects, but strengthen each other, and each is essential for the proper development of an individual. Either without the other is impotent, of no consequence. Remember, then, that "eugenics is the science which deals with all influences that improve the inborn qualities of a race; also with those that develop them to the utmost extent" (9). Consequently, true, sensible eugenists stand for better environment, nurture, training, and opportunity.

As to the attitude of supporters of eugenic principles toward the immigration problem, I may say, that while not opposed to immigration as such, we should not be in favor of indiscriminate immigration. We ask for sane regulation. The question of immigration is a national problem. It is of especial importance to the United States. The present law (Immigration Act of February 20, 1907) excludes "all idiots, imbeciles, feeble-minded persons, epileptics, insane persons, and persons who have been insane within five years previous; persons who have had two or more attacks of insanity at any time previously; paupers; persons likely to become a public charge; persons afflicted with tuberculosis or with a loathsome or dangerous contagious disease," etc. (10), to the number of twenty-one excludable classes. Provision is made for landing under bond in the case of persons likely to become public charges and persons certified for physical defects. It further provides for deportation within three years from the date of entry into the United States

¹See this JOURNAL for June 8, 1912.

of those aliens who enter in violation of law or who become public charges from causes existing prior to landing. As pointed out by Salmon in his paper on Insanity and the Immigration Law, there should be provision for better enforcement of the law, for examination at the points of embarkation as well as landing, detail of medical officers of the Public Health Service to ships bringing in immigrants, acceptance by steamship companies of insane aliens who desire to return to their homes, extension of the deportable period from three to five years from date of landing, and more humane methods of deportation. A law requiring certificates of health and character from the native foreign governmental authorities, although helpful in excluding criminals, especially members of the nefarious "black hand" society, would most seriously interfere with much desirable immigration, especially from Russia. More dependable information on the relation of immigration to insanity and allied conditions is needed from the Bureau of Immigration.

This subject particularly concerns New York State, which "receives twenty-six per cent. of all immigration to the United States and is the destination of more than eighty per cent. of the immigrants found upon their arrival to be insane or mentally defective" (11). The number of immigrants coming to New York State each year exceeds the number of births, so that immigration is really the chief source of increasing population.

Our course of action should, however, not be hasty and premature. Mature deliberation, unbiased, calm reflection should precede all action. This applies to the Dillingham bill, now up before Congress, which provides for an illiteracy test for immigrants. With reference to this point we should not forget, as pointed out by the *Outlook*, that a large proportion of our population comes to us without any education at all. "They are those who come to us through the cradle. We do not fear their coming. We can provide in our homes and in our schools for the education of all the children born in America. No one wishes to limit their number. If all the immigrants from abroad could be landed on our shores as little children, and could be adopted into American families and sent to American schools, we could also welcome them. So far as there is any peril in the immigrant population, it is due to the prejudices which they bring with them; and these prejudices are quite as much the result of bad education as of no education" (12). We want the good immigrant just as we want the good native born child. On the average the immigrant is probably no better and no worse than the native born citizen. Even if the customs and language of the immigrant are different from our own, we need the energy he brings to us. Americanization, especially in his offspring, soon makes of him a very desirable citizen in most cases. But we should not and do not want the bad, unworthy immigrant any more than we want the unworthy or unfit elements of society already found amongst us. Therein lies the crux of the situation.

Finally we do not propose excluding one from marriage or parenthood for failings of varying degree which we find so widely prevalent among all

people, in all classes. Surely we are not so narrow minded. We all have our faults, our failings. We take an individual as a whole, as a biological unit, and consider the particular sort of individual, the special type of person we have before us. It is only when antisocial tendencies exhibit themselves, when the individual shows himself to be definitely and positively socially unworthy or unfit that the question of the advisability of the application of eugenic restrictions arises. We should allow a wide normal range—which is more than most of us do in our criticisms and judgments of other people's conduct and speech. There are spots of darkness even on the sun. The world is composed of all kinds and we need them all. Separate pieces of a machine may not be in perfect condition, but if the parts be put in place and the machine set going, it may work very smoothly, even though several of its separate units may be in an imperfect condition. It is the same with the human machine. In spite of little or even rather gross failings in the field of feeling, intellect, volition, or all of them, the individual, as a biologic unit, in his social relations, may be able to get along very well and sail his ship fairly or very smoothly. We must look at an individual from the point of view of mental medicine and eugenics, not as a heap of distinct, separate, disconnected units but as a uniform, connected structure whose machinery works harmoniously. The human machine may have a little weakness here or slip a cog there, but in most instances compensation is established and the machine is kept at a high point of efficiency. Some slight anti-eugenic qualities or characteristics may be more than made up for by other traits of true eugenic worth. A very wide normal range should be allowed, but the extreme, the really unfit and unworthy, cannot be included within the limits of normal and desirable citizens.

We do not ask you to believe at once in sterilization or segregation, in medical examination as a prerequisite to the granting of a marriage license, in teaching the methods for prevention of conception, in instructing the young in sexual physiology and hygiene, and many similar questions which are now being widely discussed. We are not binding you to any particular eugenic principles. What we should strive for is the acceptance by the people of the truth and the appreciation of the importance of the general problem, a full realization of the aims and objects of the science and practice of eugenics. Definite methods for the best way of ultimately carrying into execution the various proposals on our programme will later swiftly and surely follow. Popular support and demand is needed. But the intellectual classes must gather to the support of eugenics before its principles can be widely disseminated and burned into the national conscience. And above all others the medical profession should be the first to carry the banner onward and spread the gospel.

To those who object because eugenicists speak too much of marriage and parenthood, of fatherhood and motherhood, of children and the future, and of similar important kindred subjects, I need only say that, to use the title of Ellen Key's famous book, this is "the century of the child."

It is not a sudden change in our sentiments, customs, and laws that is demanded by us. No change is, as a rule, as sudden and unexpected as we are wont to consider it. There is always efficient cause and effect, if it is only sought for long enough and diligently. The law of determinism holds everywhere in Nature—in the natural, in the biological and in the sociological sciences. The change is generally much more gradual than we are aware of. There is always a chain or series of events from cause to effect. Where the chain is short the new condition seems to us comparatively sudden, and so cause and effect are easily followed. But where the chain is long, cause and effect are not so easily determined, the links in the chain are not so easily hooked together or traced in their continuity. So it has been in noting the relation between hereditary diseases in the offspring and the mating of the parents. So it is in tracing the origin of most mental states. And so it is with our social conditions which are but an expression of the mental states of the majority of the community.

We are all aware that throughout the country there is stirring to-day a wave of social unrest. Our social and economic conditions have changed. We can no longer be ruled by "an eye for an eye, a tooth for a tooth" and similar rule of thumb, time worn, antediluvian principles. Man is seeing the light. I must here repeat what I said in a previous paper:

Shall tradition and custom remain unchanged or adapt themselves to their new environment, their new conditions? Biology teaches us to adapt ourselves to our environment, while at the same time endeavoring to change and shape it to suit our needs. So with eugenics and its objects. There are new economic, political, and social problems. New methods of dealing with these questions are necessary. We must adapt ourselves to these new conditions and try to shape or correct them more perfectly to fit our needs, longings, and desires. The evils which have accompanied the changed conditions are not self corrective but cumulative. What shall be our attitude? Shall we, in typical *laissez faire* manner, helplessly view the spectacle and shake our heads sorrowfully? Or shall we rather lift up our heads, stare the problems full in the face, and meet them as man to man? They are there before our very eyes. We cannot and must not be blind to them, except at our own peril. Let us, like men, meet these new social conditions. Let us be up and doing, as it was intended that we should be (13).

Far from producing a pessimistic, unhealthy view of life (already too widespread all about us) by showing the prevalence of the disease, crime, and degeneracy which surround us on every hand, a thorough knowledge of eugenics will, on the contrary, go far toward instilling into every one of us a more optimistic and more healthy view of life. This will be accomplished by indicating what is positively bad, by explaining the difficulty or the utter impossibility of cure of these evils by persistently adhering solely to our present methods, and by pointing out the need for the new forces brought to our aid by eugenics. It will be the royal highway to all that is best for the general physical, intellectual, and moral well being of the individual, the nation, and mankind.

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1517 SOUTH KEDZIE AVENUE.

A NEW OPERATION FOR DECOMPRESSION.

By EDGAR R. McGUIRE, M.D.,
Buffalo.

Adjunct Professor of Surgery, University of Buffalo; Surgeon,
Buffalo General Hospital.

The remarkable advance in operative surgery during the past few years has scarcely been equalled in any other field of human endeavor. The surgery of the abdomen has entirely changed the mystery and empiricism of a few years ago to one of the most exact departments of pathology. The infections of joints are fairly well understood; the arteries and veins are successfully sutured, and the thorax is no longer a forbidden field. The advance in operative surgery has been brilliant in all regions save one, the brain, while cranial surgery, in many respects, here remains in its infancy. In the near future let us hope it will be placed along with that of the abdomen on a scientific basis.

If we try to ascertain the causes of such remarkable improvement in abdominal surgery, we are impressed with two factors, namely, more frequent operations and more thorough examination of the entire peritoneal cavity during abdominal exploration. In other words, *the study of pathology in the living has been the means of advancement*. Applying this condition to the head, we must reach the point of more frequent and thorough explorations in order that we may study more accurately during life the physiology and pathology inside the cranium.

The cause of this backward condition lies partly in the direction of the physiologist. When he is able to tell us more definitely concerning the function of certain areas of the brain so that we will no longer have to use the term "silent areas" (when the fact is there are many others beside the one dignified by that name), we shall be better able to appreciate the pathology of diseases of the brain and offer more rational ideas for surgical attack. Many convulsions, for instance, now considered general in type are really Jacksonian, did we but know brain physiology sufficiently to recognize them as such. For instance, until we know more accurately the rôle played by the frontal lobe and cerebellum in such a well recognized condition as incoordination, how can we hope to become proficient in the localization of certain tumors? Most of our knowledge of brain function is limited to a few centres and the cranial nerves, making accurate localization well nigh impossible, unless one of these suffers from pressure.

Furthermore, surgery of the head has too long been held back by the old circular trephine, which ought to be relegated to the historical museum, having no place in a modern armamentarium. To study pathology in the living, we must actually see the brain as we did the abdomen. This can be accomplished only by openings sufficiently large to enable us to appreciate the pathology of a large area of brain. Then, and only then, will surgery of the cranium develop as did that of the abdomen.

The historical side of this question is of interest. While operative attack of the brain with some definite lesion in view has been considerably recent, yet medical history relates how many openings in the skull have been made since the very earliest times.

There is fairly definite proof that trephining was practised by neolithic men several thousand years ago, doubtless with the idea of relief from evil spirits. During the time of Hippocrates we have knowledge of its existence, and in the savage nations of the present it is practised to a certain extent. If one turns to Chipault's *Surgical Operations on the Nervous System*, he may read some interesting accounts of the early operative surgery of the brain. He will also see many interesting cuts of almost prehistoric trephining. Doubtless trephining after the manner of the time has been done more or less frequently ever since. In art we have many illustrations where the operation of trephining has been practised, showing it was known in that particular period. However, no definite knowledge of this subject was at hand until, in 1871, Broca located a cerebral abscess in the speech centre, and greatly relieved the patient by the operation of trephining. This was followed, in 1879, by a paper by MacEwen in which he narrates three cases: First, paralysis of the motor area, completely relieved by removal of a clot following injury; second, removal of a tumor from the frontal lobe, with recovery; third, a case of cerebral abscess, diagnosed as such and operation advised but refused. Autopsy revealed the truth of the diagnosis and the value of MacEwen's advice.

The first operation undertaken in the United States for a cortical lesion, whose character and location had been carefully and exactly diagnosed, was done by Dr. Roswell Park, at the Buffalo General Hospital, November 17, 1886. The lesion was a cyst, the result of degeneration of a clot due to injury to the middle meningeal artery.

In looking into the history of this subject, one is impressed with the fear with which surgeons of comparatively recent date attempted to open the skull. For instance, in 1882, Doctor Walsham, of St. Bartholomew's Hospital, published an article, *Is Trephining the Skull a Dangerous Operation?* in which he analyzes 686 cases to prove the affirmative. Obviously, many of these cases were almost hopeless and showed an unusually large mortality on that account. There seems to have been a very great fear, too, of opening the dura, as scarcely an article was written around that date, but mentions the warning not to open the dura.

The circular trephine should be included in any historical discussion. It is an instrument that may

still be found decorating the shelves of many instrument cases, both in surgeon's offices and hospitals. It made a very small opening, through which a button of bone was removed, altogether too small for any adequate exploration. It is only within recent years that surgeons have appreciated this sufficiently to adopt more adequate means for exploration.

During the past twenty-five years there has been some exceedingly good work accomplished. The work of Keen, Park, Horsley, Krause, Frazier, Cushing, and Hudson has made possible many brilliant operations on the cranium. Outside of a few exceptional cases, however, the end results have not been satisfactory. For instance, in a recent review of sixty-three cases by Taylor, of Philadelphia, the final results were noted as very discouraging. Of this number, in thirty cases the tumor was not found, yet I believe this result better than in the usual run of cases. There were fourteen complete removals, nine partial, and there were eight cysts drained. Nineteen cases ended fatally in ten days, a primary mortality of thirty per cent. All the patients are now dead save five, and three of these have not reached the three years' limit. Taylor's review is a perfectly frank statement, and I am sure his results correspond closely to those of most other operators.

The marked improvement following many purely exploratory operations proved to be a most happy accident. Why improvement occurs is difficult to explain, but that improvement does occur is now an established fact. Doubtless the reason in most instances is because of the release from compression. In any event, these operations led to a more thorough understanding of compression and its relief through decompression. This has opened a wide field, because so many cases cannot at present be accurately localized, and in decompression we have a means of giving relief to the most distressing symptoms of compression, even though we are unable to remove the cause.

In view of the present discouraging outlook, both as to diagnosis and mortality, it would seem as if decompression was the operation of choice in the great proportion of cases. One of the present problems is, How can decompression and exploration be safely combined?

In order successfully to decompress the brain we must study compression, and, unfortunately, cerebral compression is not thoroughly understood. We can well understand how the usual causes, such as depressed bone, clot, tumors, etc., cause actual pressure on the brain; but these causes fail to explain many clinical manifestations of compression. For instance, following injury or operation, one occasionally sees a patient do well for a few hours, then slight twitching and jerking of an extremity occurs, and later the patient grows so restless it is almost impossible to keep him in bed. Finally, stupor and death follow. This is a frequent picture of acute compression which can scarcely be explained by the usual causes.

The picture here described is probably due to some interference with the circulation of blood, causing edema. This may be due to obstruction of some of the larger veins, or even to thrombosis of

one of the large sinuses. The suddenness of the symptoms seems to point rather conclusively to an obstruction of the circulation rather than to a mechanical pressure of bone or clot. I am quite sure in compression it is not so much the local condition as it is the damage done to the general cerebral circulation that produces the fatal outcome. Again, one great trouble lies in the lack of elasticity of the skull. Were it not for the protection afforded by the hard bone, we should be much better off with a covering which would change according to endocranial pressure. Could we imagine a skull would literally grow larger, we should seldom see cerebral compression.

Granting these premises to be correct, the whole problem of decompression can be solved by an operation which makes the skull increase in size according to endocranial tension. Viewed from this standpoint, the usual operations are scarcely sufficient. At first the small circular opening was made; later a bone flap, and still later the subtemporal operation of Cushing. None of these make the skull larger, but depend for their success on the development of a hernia. Furthermore, as the pressure increases and the hernia increases in size, centres are involved against the edge of the opening, paralysis develops, and the second condition of the patient is often worse than the first. If the dura is not opened there is little relief from the removal of the bone. Several times I have been mortified in cases of this kind, where the pressure was great, to see brain protrude so that it was impossible to replace it. Paralysis developed; later, infection and death. In the subtemporal operation these accidents are not so common, but in my hands, if the opening in the bone is small it fails in its purpose, and if sufficiently large, the temporal fascia fails to hold the brain in place. Doctor Hudson, of Atlanta, Georgia, realizing these difficulties, proposes to hold the large bone flaps by silver wire sutures which will give way as endocranial tension increases.

Recently I attended a young boy who was hit by an automobile, striking his head against a curbstone. He was unconscious, restless, with twitching and jerking of the extremities; a case of typical acute compression. At operation I found three large pieces of loose bone, which I removed, and moreover a very extensive fracture extending in such a way backward that the whole posterior part of the skull was so loose I could move it backward and forward with my fingers. In other words, the accident had produced a decompression ideal in its application. A portion of loose bone was removed and the skull left not only larger but elastic, to accommodate endocranial pressure. Ordinarily, the boy would have died, but the peculiar character of the injury produced an ideal decompression and he recovered. Can this not be imitated in some way in our efforts at decompression? I believe it to be quite possible.

In Krause's new work he speaks of raising an ordinary bone flap as the best way of relieving pressure. This can scarcely be correct, as in the event of any great pressure one of two accidents will surely occur: Either the brain will protrude immediately so that one cannot restore it inside the

skull without amputation of the hernial mass, or else a hernia will occur later with paralysis, as the motor areas become impinged upon the edge of the opening.

The important point in any decompression is: *When displacement of brain occurs, due to release of pressure, it must be in a direction where paralysis is impossible, and that direction I believe to be backward.*

This underlying principle is so well brought out by Doctor Hudson I wish to give him full credit for it. His operation consists of making a flap on one side posteriorly, sufficiently large to allow the hemisphere to be displaced backward. This makes the skull larger, and, by retaining the flap of bone with twisted wire sutures, it allows the skull to enlarge with relief of endocranial tension.

In considering the Hudson operation, we find that it is scarcely ideal in its application, because, in view of the difficulty of determining which side of the brain is involved, I think the flap should be large enough to include both sides of the brain posteriorly; and, furthermore, in this as in all other decompression operations, there is no way to relieve the pressure of cerebral tumors and cerebellar tumors by the same operation. Now, in view of the difficulty of diagnosing between cerebral and cerebellar growths, a decompression, to be ideal, ought to relieve pressure in either instance. Otherwise we must do two operations; one to relieve pressure above the tentorium and the other below it.

We know that to relieve pressure the dura must be opened so that in tumors below the tentorium pressure must be relieved by dividing either the tentorium or the dura below the tentorium. The ideal operation, then, as I see it, is one that relieves pressure, no matter on which side of the brain the tumor is located, or whether it is above or below the tentorium.

The technique of the operation performed by me differs from that of Doctor Hudson in that the bone flap will include both sides of the skull posteriorly, and in cases where pressure seems to be below the tentorium, the dura is separated below the insertion of the tentorium posteriorly and opened below that point. A large horseshoe incision is made, extending from near the mastoid, on either side, to the crown of the head above; a bone flap of corresponding size is made by means of the Hudson instruments. Great care must be exercised in crossing the longitudinal sinus; also before raising the flap to separate the dura from the bone, as it is so adherent in this location an opening might be torn in the longitudinal sinus. If the tension seems to be above the tentorium the dura is opened, and if not, with the finger or a swab of cotton the dura is separated below the attachment of the tentorium on both sides, exposing the dura over the cerebellum. With slight pressure the cerebellum retracts, so it is easy to incise the dura after the method devised by Hudson, namely, by an incision in the form of a letter M or W. In many instances where pressure is great, I believe multiple small incisions are of advantage. Should no great pressure exist the dura is incised on the other side. When the pressure has been

relieved the bone flap is replaced and held with wire sutures, as described in the operation by Doctor Hudson. This operation not only makes the skull larger, but leaves opportunity for further increase in size, corresponding to increase of endocranial pressure, because the wire untwists, allowing the flap to recede. Furthermore, it relieves compression, whether above or below the tentorium, or whether right or left sided. Again, the flap is made sufficiently posteriorly, so that paralysis is nearly impossible.

In closing, I wish again to express my appreciation of the work of Doctor Hudson. His instruments have completely changed cranial surgery, so that an opening is now made in the skull with much greater ease than formerly. Furthermore, the essential features of the operation here described have been outlined by him, and I wish to give him full credit for these. The differences have been noted above and are merely the result of extending the main features outlined by him. The only objection to this operation that occurs to me is the danger of injuring the longitudinal and transverse sinuses, and with care this can be obviated. The results obtained are so superior that a certain risk ought to be justifiable. In conclusion, these advantages are:

1. Exploration and decompression are combined in the one operation.
2. Relief of pressure is possible, whether the tumor is located above or below the tentorium, or on the right or left side.
3. Paralysis can scarcely develop, because the displacement of brain is backward, thus avoiding any centre.
4. The decompression is elastic, changing as endocranial tension increases.

430 DELAWARE AVENUE.

PSYCHOSES OCCURRING IN TWINS.*

BY PHILIP SMITH, M. D.,
New York,

Senior Assistant Physician, Manhattan State Hospital.

As a preface to this subject it is justifiable to make a few remarks on the general subject of twins. The fecundation of more than a single ovum is not infrequent, numerous multiple births are recorded, and twin births have come under the observation of almost every physician. The most extensive record of multiple births is that of G. Veit, covering a series of 13,000,000 births in Prussia. According to his statistics, twins occur once in every eighty-eight births. This ratio, however, varies among different races and in different countries, being higher in some and lower in others. Thus in Bohemia, the relation is one in sixty; in Ireland, one in sixty-four; in Scotland, one in eighty-nine; in France, one in forty; in England, one in 110; New York and Philadelphia, one in 120.

The tendency to the occurrence of twins becomes greater in each successive pregnancy; multiparæ give birth to twins more often than primiparæ, but the latter are more likely to have twins the older

they are when pregnant. In St. Petersburg the greatest number occurs during the seventh pregnancy in women who are between thirty and forty years of age; in Hungary the same observations have been made, but in other countries the number is greater in women over forty years of age.

The development of twins as a rule is from two ova, either from the same or opposite ovaries. They, however, may develop from a single ovum with a double germ, or a single germ may undergo complete fusion. Those developing from a single ovum are of the same sex; those from different ova may be of the same or opposite sex. According to Veit, both children were male in one third of the cases; opposite sex in one third of the cases and in a little less than one third of female sex. English observers give different ratios; they find that both children are females far less frequently than both are of the male or of opposite sex. As a rule there is some difference in the weight, and only in about five per cent. both children are of equal weight. In those of opposite sex the male is usually larger, but exceptions occur.

The occurrence of twins is always regarded as exceptional, and they are less perfect and more feebly organized than single children. They are less likely to survive, and a mortality of one in thirteen occurs. Usually they show marked physical similarity, and throughout life they have the same mental traits, tendencies, and inclinations. For this reason it is not remarkable that if in one should develop a psychosis, a similar condition might arise in the other. I will, therefore, ask your attention to the consideration of the psychoses of the following twins who were admitted to this hospital.

Jane K. and Annie M. were the children of Irish peasants, born in 1848, and second in line of birth in a family of four; one brother was about two years older, and another two years younger. The father died following an accident when a young man, and the mother remarried, but had no other children. She lived to an advanced age, but had considerable worry over her second husband, and late in life was said to have been demented; there were no other psychopathic tendencies as far as known.

While they were children they lived with a grandmother and received the usual education of children of their station in life; they learned dressmaking and millinery after leaving school. When about twenty-three years of age they came to America and were employed in a drygoods store. At the age of twenty-four years Annie married a clerk and became the mother of a boy who died in infancy and two daughters who grew to maturity. At the age of twenty-six years Jane married a groceryman and became the mother of a boy who died in infancy, and three daughters who grew to maturity. They both led regular lives and had no unusual worries during the early years of their marriages. They were of a quiet, retiring disposition, but Jane was inclined to worry more than her sister. Their physical resemblance was marked and one was often mistaken for the other.

The husband of Jane fell ill in 1892, and she was told that he would not live very long. She began to worry and became depressed, for she thought she

*Read before the New York Entomological Society.

and her children would be without a home. For about three months she slept poorly and would walk the floor at night. On October 29, 1892, she was admitted to this hospital. She was in her forty-fifth year; her general nutrition was good; menopause had occurred. Her mood was one of depression with persecutory and depressive ideas and auditory hallucinations. She said her neighbors had talked about her; they tried to poison her by stopping up the water pipe; she felt she had ruined her home and that she might be killed or something serious would happen to her. After her admission she was subject to episodes when she was noisy and disturbed. She called herself a murderer; she had destroyed the whole world and all was lost. She became quiescent, but her hallucinations persisted and after a hospital residence of over two years she was discharged on December 17, 1894. When she returned home she was inactive and took no interest in her home or family. There was an increasing indifference and, finally, on account of lack of personal cleanliness she was recommitted on March 30, 1904. She was in her fifty-sixth year and in good physical condition. Her mental state was one of deterioration, there were no hallucinations, and she expressed no delusions, but said that perhaps God had punished her. She was filthy in habits and smeared her person and the furniture with feces. She improved in her habits and became more cleanly some time after her admission; orientation and memory showed no marked defect. She lacked interest in affairs and was contented with her condition and surroundings. Her physical condition remained good, but on several occasions she had an attack of erysipelas. In April, 1911, signs of pulmonary tuberculosis developed; symptoms of cerebral hemorrhage and a left hemiplegia occurred, and she died on September 10, 1911, when in her sixty-fourth year and eighteen years after the onset of her psychosis.

There were no unusual worries in the life of Annie M. until she was about forty-seven years old and then her husband became unfaithful to her. She began to worry, took to drinking considerably, and about a year later separated from him and lived with her daughters, one of whom had married. She ceased drinking except to take an occasional glass of beer. No active signs of mental derangement were observed until she was about fifty-six years old. Her married daughter moved to New York city and she was left alone most of the time in a flat in Hoboken. She became depressed, could not sleep, and was afraid to be left alone; she thought a curse was on her. She was brought to the home of her daughter in New York, but showed such an uneasy and depressed state that it was thought advisable to place her under treatment, and she was admitted to this hospital on May 20, 1904, eight weeks after the onset of acute mental symptoms.

She was in an anxious, uneasy, depressed state, moaned in a low tone, and had ideas of fear and impending danger. Orientation was good and memory showed no impairment except that she could not recall dates very well. She had considerable appreciation of her condition. Physically she was well nourished, the pupils reacted to light,

but the reflexes in the upper extremities were diminished and the knee jerks were absent. The urine contained five per cent. of sugar, albumin, and casts.

Her mental condition showed no change for several months, and she worried about her children; she thought her daughter had gone astray, and one night imagined she heard some one say that she had been taken to prison. She also expressed the idea that all her relations were either dead or in prison and that she had no home.

Gradual improvement occurred, the depression disappeared, she became interested in affairs about her, and on October 3, 1904, about four months after admission, she was discharged, recovered. Nothing abnormal was observed about her at home and her general health remained good. Diabetic gangrene and dropsy developed and she was admitted to one of the city hospitals, where she died after a short period, in June, 1906, when fifty-eight years of age.

The psychoses in these patients developed after much family trouble and the predominant feature was a depression with uneasiness and anxiety. They were both in the involution period of life. In the one there was a long prodromal period, only a transitory hallucinosis, and her psychosis ended in recovery. In the other, who is described as more retiring and inclined to worry, an acute psychosis developed, hallucinations were prominent, and she passed into a condition of deterioration.

Ellen and Mary O. were of Irish parentage, born in 1873, and first in line of birth in a family of five girls and one boy. A maternal uncle was insane, but nothing is known of the nature of his psychosis. Both parents were alcoholic, and in the mother developed a psychosis; she was admitted to this hospital, but later was discharged as improved. Her ideas were of a paranoid trend, directed against her husband and son.

As children they were delicate; they resembled each other, but Mary was less robust than her sister. Both had a simple and shallow disposition, but Ellen was considered to be less stable. They were religiously inclined and at one time wanted to enter a convent, but were dissuaded from doing so. They graduated from public school and then began to work in a store as salesgirls. Both remained unmarried.

Ellen O. began to worry because she was out of employment, and then passed into a state of depression with suicidal tendencies. When admitted to this hospital, on November 14, 1895, she was twenty-two years of age and her physical condition was good. She had ideas of a depressive trend; said her head felt like a blank; she had ruined her family by what she had said and done.

Later, she passed into an excited state, showed psychomotor unrest, and was flippant, flighty, and at times obscene and profane in her conversation. Again there were periods when she was quiet and did not speak. Two years after her admission she became quiescent, and gradual improvement took place. After a period of about three years in the hospital she was discharged, recovered, on August 29, 1898. She became excitable and difficult to control at home, and finally on account of violent and

assaultive tendencies she was readmitted at the end of three months, on December 6, 1898.

She was in a maniacal condition, unreasonable in her demands, spoke in an abusive manner of her parents, wanted to get married. There were periods when she was excited and again she was careless, simple, and childish. Gradual improvement occurred and she was discharged the second time as recovered, after a period of about two and one half years, on April 15, 1901.

She was sent to some relatives in the west, but became excited, returned to New York city, and was admitted for the third time on May 9, 1901, three weeks after her discharge. She again was in a maniacal state, and talked in a rambling and disconnected strain. Since her last admission she has been in the hospital continually and usually is quiet and well conducted. At times there are episodes of short duration when she is talkative, flighty, and inclined to assault. She is simple in her manner, talks in a nervous way, shows poor judgment and no good insight into her condition. Her orientation is good, but she shows a defective memory for dates.

Mary O.'s health became impaired about a year after Ellen was admitted to this hospital, and, after fainting at her work one day, she was obliged to remain at home. She passed into a state of depression with suicidal tendencies and when in her twenty-fourth year she was admitted to this hospital on July 24, 1897.

She said she worried over her sister, wanted to come to her, wished to die. Later she became maniacal, was flippant, stubborn, and combative; she was subject to paroxysms of weeping, and became dull and stupid. Gradual improvement occurred, she became quiet and coherent in her conversation, but was simple in manner and lacked character. On April 2, 1901, after a hospital residence of about three and one half years, she was discharged, recovered.

She resumed work and was efficient. In August, 1904, she had some sexual relations, and her menstruation failed to appear. She thought she was pregnant, became depressed, thought there was no use in living, and wanted to die; occasionally she heard voices at night. She was recommitted, September 8, 1904. Her mood was one of depression, and there was mental and motor retardation. When her menstruation was established her depression disappeared and three weeks after her admission she was discharged, as recovered. She resumed work and there were no abnormal mental symptoms. About three years later, following loss of employment, she again became depressed and committed suicide at her home by inhaling illuminating gas.

The psychoses in these patients was of a recurrent nature with alternating periods of excitement and depression. Both manifested symptoms at approximately the same period of life; the one who was less stable has been a hospital resident almost continually up to the present time; the other was able to remain at home for a much longer period before her second admission, and after her discharge she remained well mentally for three years and then had another attack of depression and committed suicide.

Florence N. and Conrad E. are of Swedish parentage, born in 1883, the second set of twins, and last in line of birth of a family of six children. The father died of an infection following a burn; the mother died of diabetes. A brother and sister died of tuberculosis when of adult age. As far as known there is no insane heredity.

Florence was a delicate baby and until she was five years of age she was subject to convulsive seizures, usually dependent on some gastric disturbance. She was always nervous. Conrad was more robust, but when about fourteen years old he was thought to have tuberculosis; his health, however, improved and he developed normally. Both were of medium size; they resembled each other in features, and had similar inclinations. In school they were as bright as other children. Florence later became a milliner and Conrad a coppersmith. She married, but he remained single.

Florence N., when about eighteen years old, thought she was suffering from tuberculosis; she became depressed and imagined people were trying to harm her; she felt she was burning up and was to be "electrocuted." She remained at home, and at the end of six months apparently had recovered. She worked and, in 1909, was married and the following year became the mother of a child.

Her husband noticed that she was worried about her brother, and for about a year would drift in her conversation, and use stereotyped phrases. She became jealous, irritable, and finally so excited that she threw things at him. On September 6, 1911, she was admitted to this hospital when twenty-eight years of age. She was simple and superficial in her replies and smiled a great deal; any question which required mental concentration was answered incorrectly. Orientation and memory were good, and no delusions or hallucinations were present. Her physical condition showed good nutrition; there was a slight systolic murmur at the apex of the heart.

She has shown no mental improvement up to the present time and shows no interest in ordinary affairs. She makes loose statements and exhibits no insight into her condition; her mood is usually one of good humor, but at times she becomes irritable.

Conrad, E. was always greatly attached to his mother, and when she died he began to drink, and became erratic and careless in his conduct. During a period of four years he worked irregularly and would at times go away from home for months, and when he returned gave no explanation of where he had been. He was arrested and sent to the alcoholic ward of Bellevue Hospital, but there his mental condition was recognized and he was later admitted to this hospital, three months before his sister, on June 17, 1911.

He was mildly elated, smiled a great deal, and was flippant in his replies. He complained of hearing voices of a vile and obscene nature and thought they were caused in some way by Christian Science. Orientation and memory were unimpaired. Physical condition showed nothing of importance.

He has shown no improvement up to the present time; the hallucinations continue, but he does not seem disturbed by them; he smiles a great deal, and when talking about his ideas on Christian Sci-

ence he becomes rambling and quite disconnected. He works in the hospital and is contented with his condition and surroundings.

One of these patients had a depression at the age of eighteen years, from which she apparently recovered; there were also ideas of a persecutory nature. At twenty-eight years she again showed evidence of mental derangement. The brother began to show symptoms of his psychosis when he was twenty-four years of age and hallucinations have been prominent in his case but have not been observed in the sister.

Both of them show looseness of thought and have lost interest in affairs. Since they have been under observation there has been no improvement, and the prognosis is considered ominous, as it is anticipated that a considerable degree of deterioration will occur.

Georgina and Sarah K.'s parents were Irish; the father had an apoplectic attack at the age of sixty-five years, the mother suffered from rheumatism and died at the age of fifty-six years; she was a woman of nervous temperament. They were born in New York City, in 1861, and are third in line of birth in a family of four children; the two eldest died in infancy. They were delicate children, but Georgina was always nervous and less robust than her sister. After graduating from public school she remained at home and did the housework, but Sarah went out to work at upholstering. They were of quiet disposition and regular church attendants. After the death of both parents they continued to keep house, but regularly received some financial assistance from the church which they attended. Neither married or had any love affair.

In 1905, Georgina had a long rheumatic attack and was confined to bed for several months; she began to complain of a "telephone in her ear" and of accusing voices. Noises in the house frightened her and she thought people on the street were calling her names. There was a cessation of these symptoms during a short period while she was away from the city, but they recurred when she returned. She was admitted to this hospital on November 8, 1906, when forty-five years of age. She stated that she began to be troubled by annoying voices about eighteen months previously, following an attack of rheumatism. During the examination she reacted to hallucinations. There was no defect in orientation or memory; she said she was nervous, but not insane.

Her nutrition was poor; she had a chronic catarrh of both ears and hearing was impaired; reflexes were exaggerated and a coarse general tremor was present; the arteries were moderately thickened. She has remained in the hospital since admission, and throughout this time there has been no cessation in the hallucinations. She complains of being annoyed and persecuted and occasionally has outbursts of irritability. Her orientation and memory remain good. She has no insight into her mental condition and her judgment defect is shown in that she wants to leave the hospital, but does not know where she will go or how she will support herself.

The sister Sarah is employed in the city, but has

no permanent place of residence and whenever she visits her sister has some new plan for Georgina; she does not think she is insane and says she should not be detained here. She blames the church visitor for her commitment and thinks that the church should take up the cause of both herself and her sister. She now does not attend the same church, as she does not want to associate with such a hypocrite as the church visitor. Her ideas show a decided paranoid trend and she apparently is gradually approaching a definite psychosis.

The one sister in these twins has developed a psychosis of paranoid trend based on hallucinations of hearing. She was always less robust and her mental symptoms seem to have followed a prolonged attack of rheumatism. The second sister also has some paranoid ideas, but no hallucinations are present; both apparently have always been somewhat inferior; they always received aid and protection from others and never accomplished very much in life.

Mary D. and her sister's parents were Irish peasants and as far as known no member of the family was insane. They were fifth in line of birth in a family of five girls and one boy, and were born in Ireland in 1871. Their education was meagre and they always lived on a farm; their general health was good; they showed considerable religious fervor and the life of a nun appealed to them.

When twenty years of age, Mary came to America and was soon after followed by her sister. They were employed as domestics and after several years married. Mary became the mother of four children; her second pregnancy resulted in twins, but one died in infancy. She was not alcoholic, but drank coffee and tea to excess. After her marriage she continued at work, but she began to neglect her duties, became cranky, and devoted much time to religion. She began to have hallucinations, and thought the Lord talked to her; there was a gradual increase in her symptoms during a period of two months and, April 6, 1897, she was admitted to this hospital when twenty-six years of age.

Her mood was one of depression, and she usually was preoccupied with religious thoughts; when disturbed in any way she became violent and combative. She complained of having heard voices and knockings at the place where she was employed; she thought she would be poisoned and contaminated by those about her. She was pregnant, and seven months after admission gave birth to a full term child. Her mental condition gradually cleared up and on July 1, 1898, she was discharged and apparently made a complete recovery when she returned home. She became the mother of several children and showed no abnormal mental symptoms.

In 1903, she became the janitress of a house and was annoyed greatly by the tenants. She became moody, despondent, and cranky, and after an episode of excitement was arrested and later admitted to this hospital on October 9, 1903. At first she was irritable, suspicious, and showed religious preoccupation. She gave an account, some time later, of an hallucination episode when at home; she heard noises and talking, became frightened, and thought the house was haunted. At times she refused food,

because it was forbidden by God and she thought she had sinned. She gradually cleared up mentally and was discharged, recovered, on January 16, 1904, after a hospital residence of about three months.

The deaths of an elder sister and of her twin sister occurred a short time after her return home, but she did not appear to be affected in an abnormal way; during the following summer she complained of headaches on several occasions. In the autumn she became very religious, went to church a great deal, and wanted to have masses said for her sisters. She became depressed, neglectful of her home, and finally refused to stay in the house. On November 9, 1904, she was admitted for the third time. At first she was dull and indifferent, but later she became variable in her mood; at times mildly elated and again self absorbed, irritable, and mildly sarcastic. She later stated that she had worried about her sisters; that she took considerable tea and coffee and was unable to sleep at night. She began to hear voices, thought spirits were in the room at night, and wanted to die.

Gradual improvement occurred, she became less irascible, and was discharged as recovered on January 7, 1905. Since this time there has been no recurrence of mental symptoms.

The psychosis was of a recurrent nature and hallucinations of a transitory nature were always present in the beginning of the attacks. At the time of her first admission she was pregnant; her second followed unusual annoyances when she was a janitress, and the third followed the death of her sister. She was always an excessive tea and coffee drinker; at the onset of each attack her sleep was poor, and she stated she would take large amounts of those beverages; the attacks, therefore, may bear some relation to a toxic etiology. In the sister no psychosis developed; she showed nothing abnormal, but was always very religious up to the time of her death.

Charles W. C. was of Irish parentage, born in New York city, and seventh in line of birth in a family of eleven children. He was the survivor of male twins, the other having died in infancy. His father died in middle life, but his mother was living and well.

From early childhood the mother noticed that he was not like the other children, but was quiet and seclusive; he learned well at school and later became an efficient printer. As far as known he had no bad habits.

The first thing that attracted attention was that he remained at home and did not visit his other brothers and sisters in the city. At the end of six months he had a sudden episode of excitement during the night; he had hallucinations accompanied with fear, and thought he was to be poisoned. For two weeks he remained more or less excited and then he became mute and peculiar mannerisms like puffing out his cheeks began to develop. On February 1, 1906, he was admitted to this hospital, when twenty-six years of age. He was resistive and exhibited mannerisms. At no time while under observation was he sufficiently accessible to determine his mental content. The greater part of the time he was mute and in a catatonic state. Muscular

stiffness and constrained attitudes were prominent features. He usually was tube fed and his nutrition finally became so reduced that he passed into a state of exhaustion, and died after a hospital residence of almost three years, on December 11, 1908.

In reviewing these cases it appears that the number of twins in whom psychoses develop is small as compared with the frequency of their occurrence; females are more frequently affected than males. There is a similarity in the makeup, but some disproportion is present and one shows a greater weakness than the other. The psychosis develops earlier in the weaker one and shows a greater tendency to recurrence, or to end in deterioration. In most of the cases when a psychosis developed in one, only a comparatively short interval elapsed before the other either evidenced the prodromes or a psychosis developed with similar symptoms.

Finally, it is observed that the single children of the family apparently had a stronger makeup, for even though there was a marked psychopathic heredity in two of the mothers, only in the twins of the family did a psychosis develop.

MANHATTAN STATE HOSPITAL.

THE MONTHLY INCIDENCE OF CERTAIN DISEASES.

BY HUGH ARBUTHNOT BROWN, M. D.,
Washington, D. C.

A study of the seasonal distribution of deaths from important causes is of interest, not only to the health officer and the physician, but to every thinking citizen of a community. A convenient and indeed necessary preliminary to such a study is the distribution of such deaths by months of occurrence. While it may ordinarily be sufficiently accurate to say that certain diseases are most prevalent in the spring or summer and others in the fall and winter, and that there is a resultant



FIG. 1.—Total deaths from all causes, registration area, 1910: relative monthly mortality.

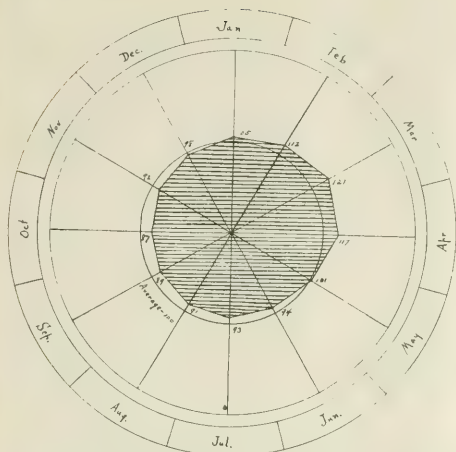


FIG. 2.—Deaths from tuberculosis of the lungs, registration area, 1910; relative monthly mortality.

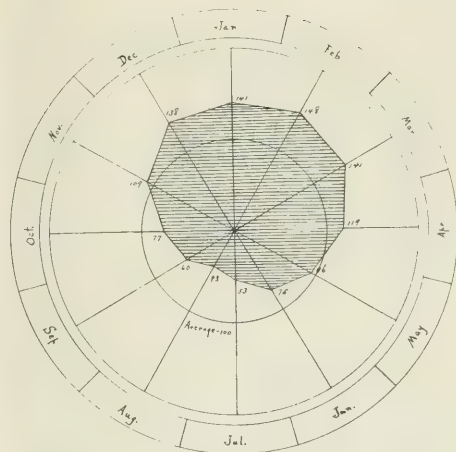


FIG. 4. Deaths from bronchitis, registration area, 1910; relative monthly mortality.

tendency, therefore, to an increase in the mortality from these diseases at certain seasons of the year, nevertheless, in a more critical survey it is essential to draw the lines much more closely, and in distributing the deaths from various causes by month of occurrence to take into consideration also the varying lengths of the calendar months themselves, and determine the relative monthly mortality as it is affected by these varying lengths.

It has been suggested that we go even beyond this and determine weekly and daily mortality, in the hope of solving some of the problems confronting us. Are there, for example, more suicides on Monday—blue Monday as it is so often called—than on other days of the week? Is it true that the majority of cases of typhoid fever contracted from eating polluted shellfish could be traced back to a

certain Friday fish day? Is there a disproportionate number of deaths from acute indigestion on Saturdays due to the customary boarding house boiled dinner on that day? Certainly observation would lead us to believe that there actually do occur more deaths from acute alcoholism on Saturdays and Sundays than on other days of the week. These and many similar questions cannot be answered definitely at the present time because of the lack of statistics, but it is at least possible to present statistics of mortality from various causes by months of occurrence.

Relative monthly mortality may be indicated in several ways. One of the simplest methods is to calculate the average number of deaths occurring daily during each separate month, and then the average annual death rate if this daily average had

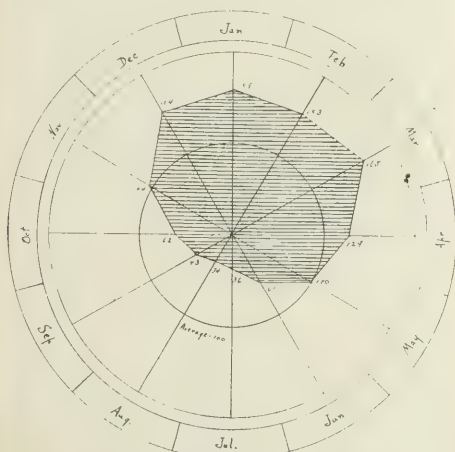


FIG. 3.—Deaths from pneumonia, registration area, 1910; relative monthly mortality.

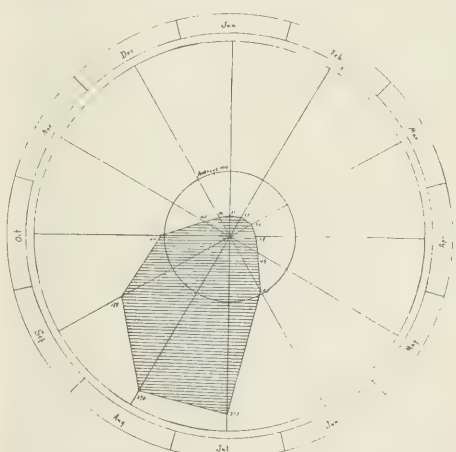


FIG. 5 Deaths from diarrhea and enteritis (under two years), registration area, 1910; relative monthly mortality.

been maintained throughout the year. In this paper, relative monthly mortality is indicated in the form of a ratio to the average month taken as a standard, or 100 per cent., corresponding to 1,200 deaths during the year.

The discussion here is limited to deaths in the "registration area," which, in 1910 comprised the States of California, Colorado, Connecticut, Indiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Montana, New Hampshire, New Jersey, New York, North Carolina (municipalities of 1,000 population and over in 1900), Ohio, Pennsylvania, Rhode Island, Utah, Vermont, Washington, and Wisconsin, the District of Columbia, and forty-three cities in nonregistration States. The estimated population of this area in 1910 was 53,843,896, or 58.3 per cent. of the total estimated population of continental United States.

The statistics presented relate only to the year 1910, and the discussion can, therefore, be only general in character, the idea being simply to emphasize the possibilities of further study along these lines and to indicate certain general conclusions.

Of the total number of deaths from all causes in the registration area during the year 1910 the largest actual number occurred in March and the

February, March, April, and December, due in large part to such diseases as tuberculosis of the lungs, pneumonia, bronchitis, measles, and scarlet fever, and a similar increase in July and August, as a result of the prevalence during these months of such causes of death as diarrhea and enteritis, congenital debility, and typhoid fever, while, on the other hand, a decrease is noted in the other five months, although the range between the maximum and minimum relative mortality is comparatively slight.

Of more interest are figures showing the relative monthly distribution of deaths from individual causes, a study of which indicates clearly the influence of many of these causes upon the total monthly mortality. The following table shows, for 1910, the total number of deaths from all causes and from each of four important causes, namely, tuberculosis of the lungs, pneumonia, bronchitis, and diarrhea and enteritis (under two years), together with the actual and relative numbers occurring during each month. These variations in relative monthly mortality are also shown in the accompanying diagrams.

Of the total of 895,412 deaths from all causes in the registration area in 1910 no less than 196,284, or

DEATHS IN 1910

Month	All causes		Tuberculosis of lungs		Pneumonia		Bronchitis		Diarrhea and enteritis (under two years)	
	Actual Number	Relative	Actual Number	Relative	Actual Number	Relative	Actual Number	Relative	Actual Number	Relative
January	80,108	100	5,204	100	54,187	100	12,690	100	54,999	100
February	77,095	96	6,208	119	7,396	136	15,099	119	54,300	99
March	86,627	108	6,478	124	6,492	120	16,445	129	56,342	102
April	76,426	95	5,650	109	7,606	140	15,999	126	54,110	98
May	72,041	90	5,255	101	5,749	106	15,248	119	53,694	98
June	64,140	80	6,646	128	4,599	85	16,333	129	51,608	94
July	80,808	101	5,848	112	2,698	50	778	6	75,314	95
August	79,585	99	5,970	115	1,665	31	53	1	72,514	93
September	76,007	95	5,876	113	1,524	28	491	4	72,066	92
October	74,500	93	5,889	113	1,698	31	622	6	72,364	92
November	74,000	92	5,889	113	2,049	37	827	7	70,778	89
December	79,912	99	5,686	109	4,764	88	1,132	9	73,990	91
	78,912	98	6,273	120	7,092	131	1,692	13	74,471	92

smallest in June. A consideration of the relative number of deaths each month, however, after making allowance for variations in the length of the several months and on the basis of an average of 100 deaths a month, indicates that, while in March the relative mortality also was higher than in any other month during the year, it was at its lowest point in November, the proportions being 112 for March, ninety-one for November, and ninety-two for June.

The accompanying diagram shows the relative monthly mortality from all causes during the year 1910. If it were not for varying climatic conditions, epidemics, accidental agencies over which man has no control, and the like, the shaded area in the diagram would constitute a perfect twelve-sided, geometric figure, the relative monthly mortality being represented by exactly the same deaths in each month. As a matter of fact, there is a very close approximation to the average of 100 deaths a month, as represented by the circle in the diagram.

Because of the above mentioned factors, however, resulting in a more or less well defined seasonal distribution of certain causes of death, there is an increase over the average of 100 in the relative number of deaths in the months of January,

nearly one fourth, were due to these four causes, 142,018, or 17.6 per cent., being attributed to tuberculosis of the lungs, pneumonia, and bronchitis, combined, and 54,266, or 6.7 per cent., to diarrhea and enteritis (under two years). In the months of January, February, March, April, and December, 1910, there were 350,933 deaths from all causes, and of these, 75,763, or 21.6 per cent., were due to tuberculosis of the lungs, pneumonia, and bronchitis. The deaths from all causes in July and August numbered 130,982, and of this number 25,100, or 17.9 per cent., were occasioned by diarrhea and enteritis (under two years).

The influence of these four causes of death on the total monthly mortality from all causes is clearly indicated by the fact that, while the total number of deaths from tuberculosis of the lungs, pneumonia, and bronchitis, combined, represented 17.6 per cent. of the total deaths from all causes, the number of deaths from these three causes during the first four months of the year, and during December, constituted 21.6 per cent. of the total from all causes occurring during these months. An even wider variation is seen in the figures for diarrhea and enteritis, the total number of deaths from this cause representing only 6.7 per cent. of the

total from all causes, while of the deaths from all causes occurring during the months of July and August no less than 17.9 per cent. are due to this disease alone.

The marked increase in the number of deaths from these four causes during certain months of the year is shown even more forcibly in the accompanying diagrams, being especially noticeable in the case of diarrhea and enteritis in children under two years of age, the relative monthly mortality ranging from thirty-one in January to 273 and 274 in July and August, respectively, emphasizing (if such emphasis were needed) the fact that this is a cause of death fostered by hot weather, impure milk, and unsanitary conditions, all of which are naturally more prevalent during the summer months.

In the following statements are shown, for each of eighteen important causes of death during 1910, the months in which the relative mortality exceeded 100, the month of maximum relative mortality from each individual cause being indicated by italics:

INCIDENCE OF DISEASE; BY DISEASES.

Typhoid fever—August, *September*, October, November.
 Malaria—July, August, *September*, October, November.
 Measles—January, February, *March*, April, May, June.
 Scarlet fever—January, *February*, March, April, May, June.
 Whooping cough—*March*, April, May, *July*, August.
 Diphtheria and croup—January, February, October, *November*, December.
 Influenza—January, February, *March*, April, December.
 Tuberculosis of the lungs—January, February, *March*, April, May, June.
 Other forms of tuberculosis—February, *March*, April, May, June, July.
 Meningitis—March, April, May, *July*, August, September.
 Bronchitis—January, *February*, March, April, November, December.
 Pneumonia—January, February, *March*, April, November, December.
 Bronchopneumonia—January, February, *March*, April, November, December.
 Diarrhea and enteritis (under two years)—July, *August*, September, October.
 Diarrhea and enteritis (two years and over)—July, *August*, September, October.
 Congenital debility—July, *August*, September, October.
 Violent deaths (excluding suicide)—June, *July*, August, September, December.
 Suicide—*March*, April, May, June, July.
 All causes—January, February, *March*, April, July, August, December.

INCIDENCE OF DISEASE; BY MONTHS.

January—Measles, scarlet fever, diphtheria and croup, influenza, tuberculosis of the lungs, bronchitis, pneumonia, bronchopneumonia.
 February—Measles, *scarlet fever*, diphtheria and croup, influenza, tuberculosis of the lungs, other forms of tuberculosis, bronchitis, pneumonia, bronchopneumonia.
 March—Measles, scarlet fever, whooping cough, influenza, tuberculosis of the lungs, other forms of tuberculosis, meningitis, bronchitis, pneumonia, bronchopneumonia, *suicide*.
 April—Measles, scarlet fever, whooping cough, influenza, tuberculosis of the lungs, other forms of tuberculosis, meningitis, bronchitis, pneumonia, bronchopneumonia, *suicide*.
 May—Measles, scarlet fever, whooping cough, tuberculosis of the lungs, other forms of tuberculosis, meningitis, *suicide*.
 June—Measles, scarlet fever, other forms of tuberculosis, violent deaths (excluding suicide), *suicide*.
 July—Malaria, whooping cough, other forms of tuberculosis, meningitis, diarrhea and enteritis (both under and over two years), congenital debility, *violent deaths*, *suicide*.
 August—Typhoid fever, malaria, *whooping cough*, meningitis, *diarrhea and enteritis*, congenital debility, violent deaths.
 September—Typhoid fever, malaria, meningitis, diarrhea and enteritis, congenital debility, violent deaths.
 October—Typhoid fever, malaria, diphtheria and croup, diarrhea and enteritis (under two years only), congenital debility.
 November—Typhoid fever, malaria, diphtheria and croup, bronchitis, pneumonia, bronchopneumonia.
 December—Diphtheria and croup, influenza, bronchitis, pneumonia, bronchopneumonia, violent deaths.

In the first six months of the year are found excesses in the mortality for the exanthematous diseases and diseases of the respiratory tract, with suicide and violent deaths increasing in number during the spring and early summer. During the summer and fall there is an increase in the number of deaths from malaria, diseases of the digestive tract, and congenital debility, with a rapid increase again in November and December in the number dying from diseases of the respiratory tract.

Granting that 1910 was a more or less normal year, we may take these as very general conclusions, the study of each individual disease through a long series of years being necessary, however, to draw conclusions with accuracy regarding the monthly incidence. This has been done in the case of many diseases, such as typhoid fever, for example, the conclusions being practically as indicated in the accompanying table and diagram. A careful study, such as is suggested, may be of the greatest value to the health officer in determining the various means by which diseases are spread from one person to another, whether by infected milk, spoiled fruit, polluted water or shellfish, flies, mosquitoes, filarize, or the many other active agents, which result in the monthly mortality from certain diseases bearing a more or less constant relation to the prevalence of these carriers or means of infection.

The careful work of the Public Health Service in connection with the study of typhoid fever, pellagra, anterior poliomyelitis, and the like, shows what brilliant results may be obtained in this and cognate fields. Similar work is being done by the army and navy, and by State and municipal health officers throughout the country. Money is being freely spent in many of our States and cities, particularly those within the registration area, for research work and for the compilation of statistical data regarding our bodily ailments, while the practical observations of hundreds of physicians throughout the country are daily adding to our sum of knowledge regarding certain diseases whose etiology and mode of transmission are still partially veiled in obscurity. Every year these diseases are becoming fewer, and it is only a question of time when every such problem will have been solved. In all these various lines the careful compilation of statistical data is of the greatest service, and not the least in importance is a thorough survey of mortality from individual diseases distributed by months of occurrence through a long series of years.

306 FOURTH STREET, S. E.

THE RADICAL MASTOID OPERATION*

Some Essentials for Proper Healing of the Wound Cavity.

By ROBERT L. LOUGHRAN, M. D.,
New York.

The object of the radical operation is the cure of a chronic mastoiditis, the chief symptom of which is an otorrhea which has resisted conservative local treatment, or of an exacerbation of such a condition. The pathological condition is a necrosis involving the bony wall of the middle ear, as well as of the ossicles, also the antral wall and pneumatic cells of the mastoid process, for it must be remembered that while the chief lesion producing the otorrhea may be a necrosis of the middle ear structures, the primary focus was a simple mastoiditis occurring in the mastoid cells and antrum, and that these remain involved in a chronic process, either as

*Read before the meeting of the Eastern Section, American Laryngological, Rhinological, and Otolological Society, January 30, 1912.

an area of actual disease, or in a state resulting from it, a condition of osteosclerosis.

The presence of mastoid involvement accompanying an otorrhea, indicating a radical operation and its possible extent, cannot be determined without actual inspection. If, therefore, the operation is to produce the best results, not only must the middle ear cavity be relieved of its pathological condition, but the mastoid process must be investigated for any remnant of the infection. This involves an exploration of the wall of the antral cavity, to determine if any communicating cells exist, extending into the tip, the root of the zygoma, or the region about the sigmoid groove. If with the opening into the antrum to obtain a guide for deeper dissection, and the removal of the posterior bony canal wall, the bone surrounding the antrum is found to be completely sclerosed, or eburnated, it may be taken for granted that all communicating cells have been obliterated. If any cells are found to exist, they must be traced to their limits, even if it involves a complete exenteration of the mastoid process.

Within the middle ear cavity, the same holds good, especially with reference to two points, the epitympanic space, and the opening into the Eustachian tube. While the epitympanic space is not actually cellular in structure, its surface is frequently roughened by more or less well marked ridges, running in different direction, at times of sufficient size to produce distinct cellular spaces which might easily be overlooked. Thorough curetting of the bony mouth of the Eustachian tube, and the complete removal of all pathological granulations, and edematous or diseased mucous membrane well down into the tube, is absolutely essential, for the failure to produce a proper base for healthy granulations and a permanent blocking off of the tube, resulting not only in a more or less constant discharge of mucus, but an ever present path of possible infection from the naso pharynx into a not too well nourished epidermatized cavity in the middle ear, is responsible for at least ninety per cent. of the failures to obtain a satisfactory result. In this connection should be mentioned the placing of the mucous membrane of the tube and its circulatory apparatus in the best possible condition to resist infection from the nasopharynx by the removal of all nasal obstructions, adenoids, and enlarged tonsils.

Next in importance for the obtaining of a satisfactory result, is the establishing of a complete system of drainage from every part of the cavity. Such a drainage system can be obtained by smoothing down the bony margin of the antral cavity as it spreads out upon the surface of the skull, by the reduction of the remains of the posterior bony canal wall overlying the facial canal to the lowest level compatible with safety to the facial nerve, so that little or no depression will remain behind it; by the removal of the cartilage and fibrous tissue from the under surface of the membranous flap, thus allowing these flaps to lie in close apposition with the bone when in place; and by the removal of any ridge of bone that might exist between the root of the antral cavity and the epitympanic space; last, by enlarging the bony mouth of the Eustachian tube. Associated with these procedures is the en-

larging of the external auditory meatus so that it will become the lowest point of exit for secretion.

Beside drainage, these procedures insure another essential element for satisfactory healing. They give an unobstructed view of all portions of the wound cavity, not only for noting the condition of the developing granulations and the advancement of epidermatization, but for the most advantageous placing of the dressing and the application of medication.

The complete removal of all areas actually diseased or that might retard the development of healthy granulations, the establishment of satisfactory drainage, and the producing of a means of easy observation and local treatment, give the best opportunities for the rapid and permanent healing of the wound.

Having removed all possible cause for failure in the object aimed at, and having taken advantage of all points that can assist in its attainment, we have finished our part and must invite Nature to our assistance in finishing the work. Nature's part is known surgically as the process of repair. Further than the preparing of a proper foundation, we cannot go. We can only add a touch for stimulation here, and a bit of retarding influence there, and by careful observation, and application of our knowledge of asepsis, and of the dangers of pernicious interference, aid Nature in the accomplishment of the end we seek to obtain.

In the first place, this physiological performance is greatly aided or retarded by constitutional influences, and this fact should be borne in mind in considering the ultimate results in a contemplated radical mastoid operation. Syphilis, tuberculosis, anemia, general debility, physical depression resulting from absorption in a chronic suppurative process, and all such retarding influences, should, if possible, be eliminated, or at least be taken into consideration as possible factors in determining prognosis.

As before stated, the healing of the wound is a physiological performance, carried out roughly as follows, in every case of disturbance of continuity in the body, with but one modification in the case of the postoperative radical cavity, which will be referred to later. A cavity produced in the body tissues, whether in bone or soft parts, produced either by mechanical means or by the process of disease, is gradually filled up by the development of granulation tissue on its walls and floor. The first stage in this process is the filling up of the irregularities in the wall of the cavity by blood clot from the many exposed bloodvessels, and a smoothing over of the entire surface. Within a few hours there is produced over this a thin transparent film composed of blood serum and coagulated fibrin. Later, this is covered by a layer of leucocytes, which in turn is washed away in the form of pus, leaving the bright red granulations, composed of serum, fibrin, bloodvessel protoplasm, and leucocytes. This building up of granulation tissue continues, layer by layer, until the entire cavity is filled up, the granular mass being composed of epithelial cells developed from the epithelial cells of the bloodvessels, which later produce the fibrous tissue of the scar, the leucocytes having no part in the tissue formation.

Along with the development of granulation tissue and the filling up of the cavity, ending in the production of dense fibrous tissue, there is present the development of the epidermal layer overlying the granular mass, this layer being produced by a proliferation of the epithelial cells from that permanent epidermis existing at the edges of the wound. This progresses until the entire surface of the granulation tissue is covered and the wound may be said to be healed.

How then, is this principle of the process of repair applicable to the healing of the cavity produced in the radical operation, and what modifications are present in the healing of such a bony cavity? In the first place, the foundation bed for the production of granulation tissue is not of the same consistence in all parts; secondly, there is no regular, continuous edge of epidermis from which the epidermis to cover the granulations may proceed from all sides at once toward the centre. In these two points lie the essentials for proper operative technique to insure proper healing.

Now, as regards the foundation bed for the production of granulations: The walls of the antral portion of the cavity are composed of a cancellous bone tissue, well supplied with bloodvessels, whose open mouths furnish a profuse amount of all the elements for tissue building, and in this portion the process will go on rapidly and uninterruptedly. The walls of the tympanic portion of the cavity are of a different structure, being composed of a dense lamellated bone tissue, whose continuity has not been greatly disturbed in the process of operation, and while it may be well supplied with bloodvessels, the latter have not been disturbed anywhere near the extent of those in the antral portion. We therefore have two differing degrees of physiological repair going on in the same wound,—a rapid piling up of granulation tissue in one portion, with a corresponding amount of advancement toward a common end in the other, but without the same amount of proliferation. The production of granulation tissue will go on more rapidly in the antral portion, and by the time that that cavity is entirely filled up, the tympanic portion will have but a moderate amount of granulation formation, this being limited by the ever advancing pedicle of epidermal covering.

The development of the epidermal layer, the completion of which is to mark the final process of the healing of the wound, can be formed only from the edge which is existent when the process of repair begins. In the case of the radical operation cavity, it is not from the entire margin, but only from that portion formed by the inner end of the external auditory canal and from the edges of the superior and inferior flaps formed by turning back the posterior wall of the auditory canal. The anterior margins of the cavity must, therefore, form the entire base from which the epidermal layer is to be developed. It is therefore essential that the inner end of the flaps be so placed as to be in the most advantageous position to form the greatest area from which the epidermal layer shall spring. The edges must be placed in as exact contact with the bone surfaces as possible, so that the pedicle of epidermis can begin to advance out over the sur-

face of the cavity with the least amount of delay, before the granulations have been able to develop any further than to act simply as a framework. This is especially important in the tympanic portion of the cavity, where the greatest amount of permanent space possible is desired. In the antral portion of the cavity this retention of permanent space is not so necessary,—in fact is not possible of attainment, for development of granulation tissue here will have advanced to such a degree before it is possible for the epidermis to cover it and so stop its growth, as nearly to fill that cavity. Nor is it necessary to maintain this space, for restoration to as nearly normal conditions as possible should be the aim in all surgical operations, and there can be no necessity for producing a cavity in the mastoid bone connected with the outer air, which did not formerly exist. The only cavity essential in the healed condition is that which will transmit the greatest amount of sound vibration to the stapes and promontory with the least amount of interference.

Where, therefore, the excavation of the antral portion has been at all extensive, this excavation should be encouraged to fill up, so that its anterior wall may approach as nearly as possible, without encroaching upon the normal position of the previously existing posterior canal wall. This condition of affairs Nature will pretty well look out for herself, in spite of any effort on our part to prevent it, through the tendency for rapid development of granulation tissue in a cavity whose walls are well supplied with bloodvessels. Should this cavity be small, as is usually the case where eburnation has been encountered in the course of the operation, its walls will have a limited blood supply, and granulations will proceed in a manner similar to that in the tympanic portion with its lamellated wall and its restricted blood supply, and development will go on with about the same degree of rapidity.

The epidermal layer will have had the opportunity to be well advanced toward completion before the granulation mass is able to extend too far into the lumen of the canal. So it may be seen that the placing of the canal flaps has a great deal to do with the anterior advance of the granulation mass in the antral portion of the cavity. Epidermal development does not extend in a plane parallel with the surface of the flap and out on to the wall of the antral portion, as in the case of the tympanic portion, but upward and downward over the developing granulation mass. This producing of a posterior wall for the permanent cavity extending from the external meatus to the promontory for the transmission of sound waves and located at a level as near as possible to that of the previously existing canal wall, is an object very necessary to be considered in obtaining the most satisfactory results, for the maintenance of hearing, the permanence of the scar tissue, and the cosmetic appearance.

In the blocking off of the Eustachian tube, we are dealing with the same bony foundation as is found in the rest of the tympanic portion of the cavity, yet we want to obtain a different result. We desire that there should be but little development

of granulation tissue over the promontory and the area adjacent to it, but in the Eustachian opening we wish for a building up of a well marked fibrous plug which will withstand any tendency to break down and allow the exudation of mucus, or act as the path of reinfection, before the epidermal layer has advanced across the wall of the tympanic portion to that point. Epidermatization over a well developed fibrous plug produces a satisfactory blind pouch at the anterior end of the cavity. Non-development of such a granular mass permits of the extension of the epidermal layer into the mouth of the tube and its approximation with the mucous membrane of the tube, with a resulting permanent connection between the nasopharynx and the middle ear cavity.

Deafness accompanying a chronic suppurative otitis, indicating the radical operation, while it may in a few cases result from an interference with the structures of the receptive apparatus in the internal ear, is due in by far the greater number of cases to a disturbance in the conductive apparatus, and to that portion confined within the middle ear, partly from the destruction of the structures, and partly from the filling up of the cavity with the detritus, pus, and edematous mucous membrane. The auditory canal is not involved. Operation, removing the entire contents of the middle ear except the stapes, destroys its function as the physiological conductor of sound waves, and we must confine ourselves entirely to the stapes in our efforts to improve hearing or to retain the amount of hearing existing prior to the operation. We cannot restore it to a normal condition. What improvement we are able to obtain is entirely relative, and is dependent on the amount of elasticity that can be secured for the foot plate after the cavity is healed and the stapes has been covered by epidermis, this being dependent on the thickness of the connective tissue and epidermal covering, and the amount of physiological contraction that goes on in this scar tissue following healing. Points in technique that make for the greatest amount of preservation of hearing include the covering over of the promontory and stapes with the thinnest membrane of scar tissue compatible with permanency, and by the producing of the flattest surface possible in this region. Posthealing contraction of the scar tissue over the stapes, we cannot prevent, and it is this process that is responsible for the fact, so frequently noted in the condition of the hearing following operation, that of apparent improvement for a time, followed by a lessening of hearing at varying periods to a point equal to, or below that existing previous to the operation.

Another influence in the amount of preservation of hearing is the auditory canal. This, one of the main elements in the transmission of sound waves in the normal ear, is completely changed in form by the operation. Here again the principle of the reparation to as near normal as possible in all surgical procedures, requires that we make reparation to the best of our ability by restoring the canal to as near normal as practicable, that is, by avoiding producing a permanent antral cavity, allowing it to fill up so that its anterior wall when epidermatized will be in a position as nearly identical with the

previously existing canal wall as can be obtained for the proper conduction of sound vibration from the outer air to the stapes. This also holds good with regard to the external auditory meatus. While it is absolutely necessary to enlarge this opening for observation and drainage, it should be done in accordance with its requirements as a conductor of sound waves. The radical operation does not restore hearing to the normal, nor yet does it destroy it. It insures only that amount of hearing that the stapes can assume responsibility for. Our aim is to put the stapes in the best possible position and condition for carrying on its work, and aid it by producing the best possible path for the transmission of sound waves.

The cosmetic results of the radical operation are dependent upon three points: The appearance of the posterior incision, and of the concha, and the position of the auricle. Deformity associated with the posterior incision can be absolutely avoided if we are able to produce healing by primary intention, without any marked degree of depression. The first is assured by care in making the incision so that in closing it direct apposition is possible throughout its entire length and thickness, and by avoiding traumatism to the edges during the operation. Depression can be avoided by care in placing the incision in a location where it may have a foundation for healing, that is, on the skull surface posterior to the margin of the wound cavity. This is not possible at all times on account of the liability of having to excavate the mastoid in the area posterior to the antrum. An incision so curved that its middle portion can lie over solid bone should heal more firmly than one placed over a cavity with no firmer foundation than that produced by a dressing, that must of necessity be frequently disturbed. The cosmetic appearance of the concha depends upon the size of the opening produced in its floor. A large opening, while it may be more satisfactory from the standpoint of treatment, leaves an unsightly appearance which could be avoided were the meatus enlarged in the process of operation only sufficiently for safety, with the intention that it would contract in healing and leave it in a condition but little altered from its original size.

62 WEST FIFTY-SECOND STREET.

AUTOTHERAPY.

The Natural Autogenous Toxine Complex in the Treatment of Disease.

BY CHARLES H. DUNCAN, M. D.,
New York.

(Concluded from page 1222.)

STOCK SOLUTIONS.

With a stock solution we never know what symptoms were originally developed in the patient from whom it was taken. And we cannot tell, therefore, in what particular patient it may be curative. Whom will a stock solution cure? This is a question that will never be answered unless the symptoms of the stock solution have been recorded in

the patient from whom it was taken, and then it be given to a patient with a like set of symptoms. A disease toxine develops symptoms in the patient from whom it was taken, and if it cures any other patient it is because the symptoms it originally developed sufficiently resemble the symptoms of the patient to whom it is given as a therapeutic agent. If the stock heterogenous toxines or the toxines from one patient cure another, it is an exceptional instance only and not the rule.

Cures with heterogenous toxines of a disease are problematical, and experience for upward of a century indicates that there is no certainty of cure with them, and now we can see the reason why this is so.

Examples of heterogenous toxines or vaccines are Koch's old tuberculin, or any other stock preparation, whose symptoms are not recorded in the patient from whom it was taken. If the symptoms that were produced in the patient from whom it was taken were recorded and then it be given to a patient with like symptoms, it would tend to have a curative effect; but the symptoms of Koch's old tuberculin were not recorded in the patient from whom it was taken, and we do not know whom it will cure. Giving it as we now do is guess work, pure and simple.

MOST INFECTIONS ARE MIXED.

An advanced or severe infectious disease is usually a mixed infection. There are various other microorganisms beside the causative one present, acting as complicating factors. The reaction to be most curative must be against all the toxines that develop symptoms; that is, the toxines of the complicating microorganisms, and their tissue toxines, as well as against the action of the causative bacterial toxine and its corresponding tissue toxines. Complicating microorganisms which are often present are the influenza bacillus, micrococcus catarrhalis, pyocyanus, staphylococcus, streptococcus, colon bacillus, and unknown microorganisms, etc., and any one or more of about twenty other common microorganisms. It must be admitted that it would be difficult to match the symptoms of all these with any of the vaccines now in use, for we do not always know what these complicating microorganisms are. For this reason it would be difficult to approximate them with any vaccine. We cannot exactly duplicate the tissue toxines by employing the polyvalent conglomerations of vaccines now in use, but it makes little difference as far as the autotherapeutic remedy is concerned what they are. All the exact toxines, from both the causative and the complicating microorganisms, and all the corresponding tissue toxines of each are in the filtrate ready for use at the bedside. This is one of the vital points of superiority of autotherapy over any of the vaccine therapies now in vogue.

Now the toxic end product of an infectious disease is thrown off in the discharge, and when we filter the discharge through a Berkfield filter at any stage of the disease, we mechanically separate all the microorganisms, mucus, and extraneous matter, etc., and there remain in the filtrate the toxines from all the microorganisms, both causative and complicating, and also all the tissue toxines, one set

each for every one of the bacterial toxines. In other words, we have all of the exact substances in the form of a *toxine complex*, that caused the symptoms of the individual patient.

Heretofore there have been no means suggested of obtaining all of the exact autogenous toxines. The exact resistance to the disease must be against the exact toxines from which the patient suffers.

For the purpose of further discussion let us assume that in the infectious disease above mentioned, there are four complicating microorganisms, which is not an unusual number. The toxines from the four complicating microorganisms, and their corresponding tissue toxines, make a set of at least ten toxines from which the patient suffers, *these collectively are the exact remedy*. The reaction against these is the exact reaction to the disease.

Now the vaccines prepared according to the method of Wright and Douglass contain only one of these toxines, and that one is of *lowered therapeutic value* and it may not be the right one. The superiority of the autotherapeutic remedy over the vaccines prepared according to Wright and Douglas's old and faulty method is at once apparent.

Wright's autogenous vaccine is not the exact remedy for a single set of symptoms, not even for the set of symptoms it originally caused in the tissue, because it has been changed during its preparation.

Giving the polyvalent stock vaccines, or the shotgun method of using microorganisms of the same disease from a hundred different sources, appears to be unscientific; it is not asserted that they contain the tissue toxines. These vaccines are gathered from a hundred different sources. If among them there is one or more (strains) whose toxines developed symptoms in the patient from whom it was taken that sufficiently resemble the symptoms of a patient to whom it is given as a therapeutic agent, it will approximately cure.

Since this curative toxine of a microorganism (if there is one in the multitude), or, as it is called, *strain*, did not cause the symptoms of the patient, it can never be the *exact remedy* against which the tissues must react perfectly to cure the condition. If the symptoms in the patient from whom it was taken sufficiently resemble the symptoms of the patient to whom it is given as a curative agent, it will tend approximately to cure, this is the patient whom a stock solution will tend to benefit; if it does not have some therapeutic value, it tends to be harmful.

When the autogenous toxines of a disease are not obtainable (as in tuberculosis of a joint, some cases of pneumonia, or of typhoid, etc.), the best that can be done under these circumstances from a biological point of view is to make a polyvalent mixture of *natural heterogenous toxines* of this disease. These contain the tissue toxines, and Bail pointed out that the pathogenic (the writer will add, also the therapeutic) action of the bacterial toxine is intensified when in the presence of its corresponding tissue toxine. These should be made by filtering the discharge of the same disease from many patients, mixing the *natural toxines*, preserving them in a suitable manner, and injecting them hypodermically as the condition of the patient indi-

cates. This is not the best method of treating disease, as we pointed out earlier, and is recommended for use *only* when the autogenous toxines cannot be obtained; for the cures resulting from a heterogenous or stock toxine are bound to be more or less problematical. The natural heterogenous toxine is the best substitute we have for the autogenous toxines from a biological point of view. The natural heterogenous toxines are the best prophylactic agent we have at our disposal.

FILTERED SPUTUM AS A REMEDY.

The writer has a record of a case of twelve years' standing of tuberculosis of the knee in a man that was cured in two months by injecting the filtered sputum of a patient known to have pulmonary tuberculosis. Several cases of tuberculous glands in the submaxillary and axillary regions have softened and broken down and healed under the action of filtered sputum hypodermically, of a patient known to have pulmonary tuberculosis.

The writer has treated several cases of pneumonia successfully by injecting the filtered sputa hypodermically. The technique employed was to mix one part of sputa to five or ten parts of water, shake it well in a well stoppered bottle, let it stand for a few hours, filter, and inject about ten minims hypodermically. In profoundly toxic cases he gives less. The temperature in three instances came down to normal from 104° F. and over, in eight hours after the first injection, but in one case it rose again in seven hours to 103.6°; another injection at the end of twenty-four hours brought it down to 97.6°, when the patient went on to an uneventful recovery. The writer believes the best results will be obtained if the injection of the autogenous pneumonia toxine complex is administered early, although one of his patients was injected on the fifth day successfully. The writer recommends that tests be made of this method of treating pneumonia. The present indications are that it appears to be efficacious in any stage of the disease, and that it is especially prompt and curative in the early stages within possibly two days after the initial chill. We have all seen cases where there appeared to be no sputum during the first or red hepatization stage, but the writer has never seen a case where some sputum could not be obtained when he warned the patient not to swallow it, and the nurse to be especially careful to collect it in a suitable receptacle. It requires only about one c. c. of sputum from which to prepare the autogenous toxines. Even alcoholics tend to respond to this treatment.

The writer is also treating chronic bronchitis, plastic bronchitis, etc., successfully in this manner. In plastic bronchitis the injection usually has to be given much oftener than in phthisis. It usually requires an injection about every three days, but the condition of the patient should always be the guide as to when another dose is necessary. Many cases of severe and chronic bronchitis have been cured with one injection of filtered sputum. The writer has never seen a case of bronchitis either acute or chronic that three injections would not cure, and he has treated many. However, he usually gives another dose after the patients are cured, to

prevent a return. The usual time to cure a chronic bronchitis is one week. He promises all these patients a cure in two weeks and has never been disappointed. He cured four very severe cases during the past week; all had run more than three months. Three came from the hands of other physicians.

℞ Sputum, one part;
Distilled water, five parts.
Mix in a well stoppered bottle and let stand for six hours with occasional shaking. Filter.
Sig.: Inject ten minims and in four days inject twenty minims.

The local skin reaction at times is the size of a paper dollar.

The writer has the record of a case of *osena* cured in ten days. The toxines were collected from the mucus from the nose and swabbing the nasal cavity with small pledgets of cotton, and irrigating the nasal cavity with an ounce of water. These were placed in a well stoppered bottle, allowed to stand with occasional shaking, filtered, and ten minims injected subcutaneously. In four days ten minims more were given. The writer would suggest that tests be made of this method of treating asthma and hay fever.

In autotherapy there is practically no delay in starting the medication, as the patient has always with him in the infected area, the proper medicine in the very form adapted by Nature. The discharge can be filtered in a very few minutes at the bedside. If we wait for a few weeks before making another supply, another microorganism may have crept into the infected area during the interval, and we would not then expect to obtain the same good results, for we should not have this additional toxine from the complicating microorganism, and its corresponding tissue toxine as a part of our autogenous toxine complex.

If the patient is very weak or suffering with toxemia give proportionally less. The toxines are developed by autolysis from any and all of the microorganisms, both causative and complicating, and are in the filtrate. The filtrate is colorless, and perfectly transparent. It is evident that, by administering the freshly filtered toxines the different phases or stages of the disease can be met exactly with the corresponding toxines.

Toxines should always be filtered from the fresh discharges, and administered soon afterward. The writer is making many tests of treating pulmonary tuberculosis by injecting the filtered sputa hypodermically with apparently good results. He will report on these tests later.

He believes he cured one case of bloody dysentery by injecting about five minims of the filtered stool hypodermically. The writer would recommend that typhoid fever, typhus fever, cholera, etc., be tested by injecting a watery dilution of the filtered stool hypodermically. The writer is making tests of treating rheumatism and kindred diseases by using the patient's own morning urine, he believes successfully.

DOSES.

The reaction following the fresh autogenous toxines is slight; rarely will the temperature rise to more than 100° F. If the mixture of exudate and water

is allowed to stand two or three days before filtering, it becomes exceedingly toxic. Give a very much smaller dose of this. The only danger the writer has been able to discover is in giving succeeding doses of the fresh toxins. *Never give another dose as long as the patient is improving* on the dose preceding. If you do you will probably harm the patient. This appears to be true in many diseases. There is a notable exception to this, however, in gonorrhea, in which a daily dose appears to be necessary. In pulmonary tuberculosis the beneficial effect of the first dose may last as long as three months, and one dose will often cure an incipient case. In purulent infections a dose of the filtered toxins usually has to be repeated in from a week to ten days, although the condition of the patient should always be the indication for the repetition of the dose. Coincident with the discharge lessening or becoming thinner, the clinical symptoms of the patient will subside. *Never give more as long as the discharge is thin.* The filtrate may often be given by the mouth, as a prophylactic agent, although it should be always kept in mind that the dose by the mouth should be larger than when the toxins are given hypodermically.

"There is no subject in medicine where there is as great a diversity of opinion as the subject of doses, and in this comparatively new field of therapy it is a subject of which we know but little. The criticism of this method as crude is unjustifiable, for with a skilled appreciation of the nature of the infection, the response of the individual, the stage of the disease, the age, etc., the dose can usually be fairly accurately gauged and readily confirmed by experiment. It will be remembered in this connection that the dose of vaccine by the method now in vogue is to a considerable extent experimental."

The method of curing disease by injecting the filtered exudate is limited to those diseases whose causative microorganisms are caught in the filter, but it does not mean that this is the limit of autotherapy, for in all probability there will be devised other means of utilizing the autogenous toxins, as in cerebrospinal meningitis, for example, it is contended that the infectious element passes through the filter. It has long been known that aspirating the spinal fluid, and injecting it under the skin without withdrawing the point of the needle, will cure a certain percentage of cases; this is an autotherapeutic proceeding. Swan avers that he has immunized many people to scarlet fever by prolonged trituration of the scales of a patient who had the disease, with sugar of milk and giving this by the mouth. This is immunizing the patient with the natural unchanged toxins of the disease. The writer was the first to employ the natural toxins as a therapeutic and prophylactic agent in a systematic manner.

ADVANTAGES OF AUTOTHERAPY.

The advantages of autotherapy over the various vaccine therapies now in use may be briefly summed up as follows:

1. Autotherapy employs all of the *fresh autogenous unchanged toxins* from the causative microorganisms. No other therapy does this.

2. Autotherapy employs all of the *fresh autogenous unchanged tissue toxins* as enzymes, ferments, etc., that correspond to the causative bacterial toxins. No other therapy does this.

3. Autotherapy employs the *fresh autogenous unchanged toxins* of each complicating microorganism. No other therapy does this.

4. Autotherapy employs the autogenous tissue toxins that correspond to each complicating bacterial toxin. No other therapy does this.

5. Autotherapy employs all and the exact substances Nature employs when a natural cure is made. No other therapy does this.

6. *The patient carries with him his own cure* in the very form adapted by Nature to cure his condition. In the tropics, or the frozen north, in the camp, or aboard ship, in the city, or on the prairie, the cure is always at hand ready for use. No other therapy offers the same convenience.

7. There being *no foreign proteid present, anaphylaxis* never follows in the administration of the endogenous toxins, as far as the writer has been able to discover.

8. *It is cheap.* The merest waif of the city

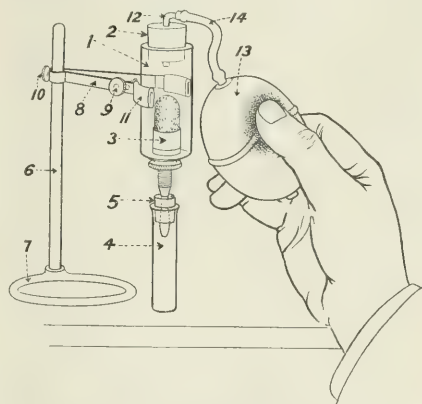


FIG. 1. The Duncan autotherapeutic apparatus. No. 1, for clinical or bedside use.

streets is as rich in curative medicine when he has an acute infection as the millionaire.

9. Autotherapy requires no extensive laboratory. *Nature's laboratory* is the laboratory of the autotherapeutic physician.

10. Autotherapy requires no skilled pathologist, one on whose reports absolute dependence can always be placed. The different stages and phases of the disease may be met with their corresponding autogenous toxins exactly, without loss of time.

11. The simplicity of autotherapy must appeal to every one; administering the autogenous toxins is a simple bedside proceeding.

12. Autotherapy is natural therapy, and we cannot get behind it.

DIRECTIONS FOR USING THE FILTER.

The apparatus the writer uses in autotherapy, for developing the autogenous toxin complex has been especially designed for the use of the practising

physician; one apparatus for the bedside and two for the office have distinct advantages. The clinical or bedside apparatus is put up in a case for convenience. This whole apparatus may be sterilized in the office and not opened till ready for use at the bedside. The air pressure in the bedside apparatus is operated by hand. In the office apparatus the pressure is operated from that in the water mains. It may be well to state here the porcelain part belonging to each apparatus is the same.

The clinical or bedside apparatus is shown in Fig. 1. The air pressure that forces the soluble toxines through the porcelain part, is obtained by means of an atomizer bulb, which upon compression forces the air through a perforated stopper on top of the substance to be filtered. This pressure is kept up till a sufficient amount of the toxine complex is obtained.

This is the simplest and most convenient and cheapest apparatus and is called the Duncan autotherapeutic apparatus No. 1.

The Duncan autotherapeutic apparatus No. 2, designed for office use, is somewhat different from the first. No mechanical effort on the part of the physician is necessary as in squeezing the atomizer bulb. The pressure of water from the mains is utilized to create a suction on the under side, tending to draw the toxine complex through the porcelain part. There is a special part with this apparatus that screws on the faucet, called a syphon. The water in escaping from the faucet through the syphon creates a suction of about twelve pounds to the square inch on the under side in the suction flask. This suction tends to draw the filterable toxine complex through the pores of the filter into the flask. The main difficulty in using this filter is the amount of water that is required. The physician may also be inconvenienced at first by not having a thread on the faucet outlet to which the syphon is screwed. This is the standard thread and is on the majority of faucets; if not, a plumber can put one on with little trouble. In the cities the objections cited above would amount to but little, as the time for filtering is usually not over fifteen minutes, but in the country where the water supply is obtained from tanks, the amount of water used may be a prohibitive factor that would not warrant its universal use. For the convenience of the country practitioner, who may have a limited supply of water under pressure, the following apparatus has been designed.

The Duncan autotherapeutic apparatus No. 3 consists of an iron tank in the form of a cylinder in connection with the standard filter or porcelain part; this tank is about fifteen inches high, and ten inches in diameter. The water from the mains is let into the bottom part of the tank. The top of the tank is connected with the filter as shown in Fig. 3. When the water is turned into the tank, it rises and compresses the air. The air in turn presses on the substance to be filtered, tending to force the toxine complex (or all of the filterable toxines) through the porcelain part into a suitable receptacle. About a quart of water is run into the tank when the water is turned off, but the air pressure is maintained. This apparatus may also be started to filter, and the physician may turn his attention to other things; returning in about fifteen

minutes, he finds the toxine complex ready for use.

In preparing the crude end product for filtering, it is the writer's custom to mix one part of the

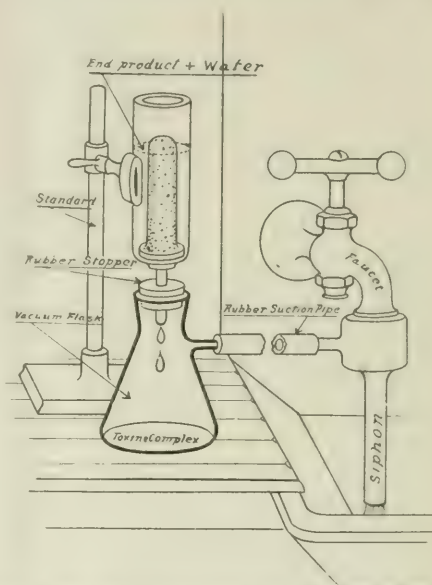


FIG. 2.—The Duncan autotherapeutic apparatus No. 2, for office use.

pathogenic discharge with from one to twenty parts of distilled water, the extent of dilution and the frequency of dose depending on the nature of the infection, response of the individual, etc. These are placed in a well stoppered bottle and thoroughly

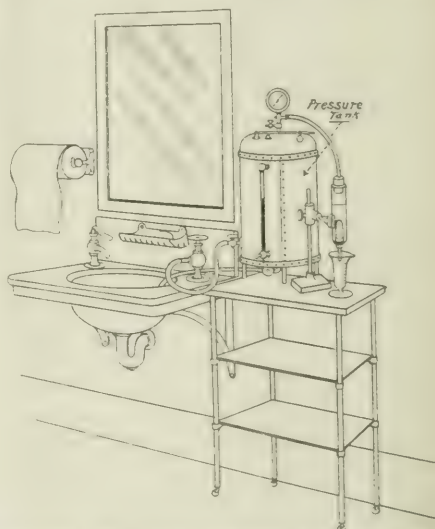


FIG. 3.—The Duncan autotherapeutic apparatus No. 3, for office use.

shaken. The bottle is now let stand from about an hour to twelve hours with occasional shaking, to dissolve the soluble toxines, or place them in solution. The solution is then filtered. The filtered solution (or the combined toxines) is perfectly sterile if proper care is exercised in filtering. The act of filtering is simplicity itself.

The filters should be boiled for from fifteen minutes to half an hour, before and after using. After using, the cylinder should be taken apart and rinsed under a running faucet, and the accumulated matter brushed off lightly with a small scrubbing brush, not too soft and not too hard. At each brushing a very thin layer of the surface itself is brushed off, whereby one regains a new filter surface. Before a new filter is put into use, it should have water run through it, for it will run cloudy for a few minutes. The filters are so constructed that all parts are detachable to admit of thorough cleansing and sterilizing. There is no place where dirt can lodge. The toxines that pass through this filter are not changed by the process of filtration.

If it is deemed advisable, a new porcelain part may be purchased for each patient, as the cost is but \$1.25. Between uses, the filter should be reversed and distilled water passed through it. A filter of this nature may be used for months, if proper attention is given it. A number of extra washers should be purchased, to be at hand.

The writer is indebted to a number of his confrères and coworkers for able and friendly criticism of this paper, for which he wishes here to express his thanks and appreciation for the time consumed and interest manifested in the work he is developing. He especially desires to mention Dr. Henry T. Brooks for pathological determinations; D. J. Mangan, D. V. S., for innumerable tests on animals, and Dr. William H. Freeman for review of the manuscript.

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A NEW TOURNIQUET FOR INTRAVENOUS WORK.

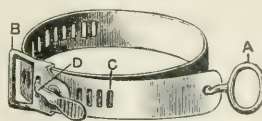
By P. B. THATCHER, M. D.,
AND E. J. HACKNEY, M. D.,
Philadelphia.

The direct introduction into the venous circulation of definite remedial agencies, or bland combinations of such, having a selective action for the correction of certain abnormal conditions of the blood, or as adjuvant treatment in a number of physical ills, is rapidly becoming of greater interest to the profession.

The latest use of this method of which we are aware, is that of the administration intravenously

of ether and normal salt solution, for producing general anesthesia. In operations on the head or neck it is of special convenience, as the surgeon is not handicapped by the presence of the anesthetist. Following the investigations by Burkhardt, in Germany, this method is now in use at St. Bartholomew's and the University College Hospitals, London.

In the beginning of our intravenous work we found that there was no tourniquet to be obtained which did not require the services of an assistant to release the pressure at the elbow, after the needle had entered the vein. As a slight movement of operator or patient will dislodge the needle after it has been properly introduced, it is necessary, where no assistance is at hand, to have a tourniquet which can be released by the slightest pressure of the operator at the proper time, causing no motion of the arm of the patient whatever. Our instrument has been designed to meet this requirement.



Thatcher and Hackney's tourniquet for intravenous work.

This tourniquet consists of a thin band of steel, seventeen inches in length and one inch wide, with perforations (c), into which a sliding ratchet suc-

cessively engages, controlled by the release lever (d).

The instrument slips over the forearm like a bracelet, and is tightened to the desired point by opposite traction on the permanent handle (b) and by the detachable hook (a).

Automatic release is secured by slight pressure on the lever (d). A light towel is placed around the arm at the point of intended pressure, and the tourniquet fitted over it. This is absolutely essential in order to protect the arm from the possibility of slight abrasion from the engagement of the sliding ratchet.

711-712 FLANDERS BUILDING.

Abstracts and Reviews.

THE PROBLEMS OF OBSTETRICAL PRACTICE.*

By W. W. CHIPMAN, B.A., M.D., F.R.C.S.(EDIN.),
Montreal,

Professor of Obstetrics and Gynecology, McGill University.

It was in 1850 that White initiated the clinical teaching of obstetrics. Preceding this time there had been no practical instruction in this department of medicine, and the teaching of obstetrics had run a poor third to that of general medicine and surgery.

Parturition is unquestionably a physiological process, but even so far too frequently a calamity for the mother. Even at the present time 500 women die annually of childbirth in Canada and the New England States, while some 5,000 more are permanently disabled. The cause may justly be

*Summary of a lecture before the Third Clinical Congress of Surgeons of North America, New York, November 14, 1912.

considered to lie in the insufficient teaching of practical obstetrics. Out of 120 medical schools investigated, only one half were found to offer anything like adequate instruction in obstetrics, and in only one sixth of these was proficient clinical teaching afforded. Only too frequently the practical side of the obstetrical teaching consists merely in the observation at a distance of a very few cases of normal delivery. Under such a curriculum the student may become a trained observer of obstetrics, but scarcely a practical obstetrician. Statistics may be brought to show that in the United States it is safer for a woman to have her abdomen opened surgically than to bear a child. Only too often the glitter of surgery preoccupies the student's mind greatly to the damage of his consideration of obstetrics. A recent article in the *Journal of the American Medical Association* upon the conduct of normal labor, while bad in itself, did much good through the wholesome and widespread indignation that it aroused, and the communications it brought out exposing its errors in teaching.

The course in obstetrics offered the student at the McGill University emphasizes first of all the practical management of normal labor or spontaneous parturition. The proper management of normal labor, it is taught, should begin long before the onset of the event itself. In cases where the obstetrician's services are engaged in advance, the patient should be seen six weeks before the time of her expected confinement. A most careful examination of every pregnant woman should be an established routine on the part of the physician responsible. This is particularly necessary in primiparæ, in whose cases the omission of a painstaking ante partum examination is nothing other than a gross sin. The presentation, size, and position of the child should be determined; careful external pelvic measurements should be made, particularly of the external conjugate and of the transverse diameter of the outlet. If these measurements are satisfactory, no internal examination of the patient need be made at this time. Certain rules may now be laid down for the guidance of the attendant: 1. The fetal head should be well settled into the pelvic brim. 2. If a breech presentation is discovered, let it alone. 3. Remember the importance of regular routine examination of the urine, particularly as to specific gravity and albumin. In the conduct of the labor itself, a sterile gown and sterile rubber gloves are particularly important. The conduct of the first and second stages of labor will not now be considered.

The most important of the third stage of labor is equally important. After the delivery of the child the uterus should be given ample time to recover itself, thirty minutes at least being permitted. There should be no haste. The fundus should be kept upon the fundus merely that its condition may be continuously observed. Extrusion of the placenta is a physiological process, accomplished by the formation of the retroplacental hematoma. When the placenta has become separated, the fundus rises somewhat. At this time the Cord is cut off. Delivery of the placenta may be employed; at the same time the woman's assistance is enlisted by directing her to bear down. A retained placenta is almost

a truly adherent placenta is rare. Throughout the entire labor two ideals cannot be too rigidly held in mind, or too emphatically advocated: 1, Absolute surgical cleanliness, and, 2, masterful inactivity on the part of the attendant. Upon this basis the safe delivery of eighty per cent. of all cases is assured, and the final verdict will be "well done."

There is no more perplexing problem in obstetrical practice than the unengaged fetal head at the end of the first stage of labor, with intact or very recently ruptured membranes. In the primipara the head is usually found well engaged in the pelvic inlet at the time that the patient goes into labor. If it is not so, there is present, as a rule, no little disproportion between the size of the head and the pelvic capacity. Where this disproportion is well marked, delivery of a living child by way of the normal birth canal is impossible, and the indication for Cæsarean section is clear. When slight, one of the most difficult problems of obstetrics is presented, which demands the application of the utmost judgment and skill in the possession of the attendant. As a hypothetical case, a patient may be considered having a true conjugate of nine cm., and a fetus whose biparietal diameter measures nine, 9.1, or 9.2 cm. Here the importance of prophylaxis comes prominently into view, for if the eighth month visit had been made, the condition of the mother's pelvis would have been discovered, and the problem solved by proper treatment before the onset of labor. When this visit has not been made, the problem unexpectedly presenting itself to the obstetrician at the end of the first stage of labor, how shall he proceed?

First, he must determine as accurately as possible the exact degree of disproportion existing between pelvis and head, and upon this information formulate his plan of treatment. Here method and an absolutely clean technique are, as always, essential. The catheter should be used, the bladder emptied, and the condition of the fetal heart inquired into. Under anesthesia and with surgical cleanliness, the diagonal conjugate must be estimated, either upon the fingers alone or by means of the pelvimeter of Hirst. In this case it will be found to measure eleven cm. and it will not matter particularly whether the pelvis is of the simple flat or the justomino variety. The pelvis having been examined, the size of the child, particularly of its head, should be estimated. The fundus will be found to measure thirty-five cm. above the symphysis pubis, indicating an average full term child. The size and lie of the child's head must next be noted and the attempt made to measure the head itself through the abdominal wall by the method of Ellice McDonald. Finally the relationship of head to pelvic inlet should be ascertained by the employment of Müller's method of impression, or that of Munro Kerr. With one hand within the vagina and the other upon the abdominal wall, the fetal head is pressed downward and backward into the superior strait. Normally, the head may be made to enter the inlet by this method; if not, the degree of relative disproportion may be determined in this way. In the proposed patient, the head may be made to engage in the pelvic inlet with but little overlap, and only moulding is necessary to permit its passage

onward. The patient should be left alone. In eighty per cent. of such cases, with strong uterine contractions, sufficient moulding will take place, and spontaneous delivery follow. The patient may be placed in the Walcher position as long as she will tolerate it, thus increasing the true conjugate one cm. Pressure may be made on the abdominal wall, and upon the head itself, downward and backward. The genupectoral position may be tried. Do not hurry, do not turn. Version should be left to the expert, for very fine distinctions make this possible, or impossible, and an error in calculation means the death of the child.

Both mother and child should be watched closely for four hours, and if progress has not been made by this time, the axis traction forceps should be applied, with great care, and but moderate traction made. If then the head does not advance, the child's life should be discarded in the interest of the mother's, and craniotomy performed. This unfortunate outcome may take place once, but should never occur a second time in the same woman and under the same doctor's care.

CARCINOMA OF THE UTERUS.*

By THOMAS S. CULLEN, M.D.,
Baltimore,

Clinical Professor of Gynecology, Johns Hopkins University.

At the present time cancer of the body of the uterus is being treated with fair success. Two thirds of the patients with this condition are cured by hysterectomy, the microscope contributing to our success by making a positive diagnosis where the tissue removed by curettement is sectioned and examined. On the other hand, cancer of the uterine cervix presents a different aspect, and the results prevailing to-day are far from gratifying to the surgeon, if not actually disheartening. The number of cases of cancer of the cervix coming to the operating table is very small when compared to the number of deaths attributable to this disease. The exact percentage of operability is difficult to determine in this country. Certain it is, however, that the vast majority of these patients present themselves at the hospital only when the disease has advanced far beyond the possibility of operative cure. Many cases are seen in the out patient departments, while but very few of these find their way to the operating table. When the uterus itself is mobile or there is but slight infiltration of one broad ligament, operation offers some hope of cure. But a fixed uterus, accompanied by extensive involvement at one or both sides, represents a growth well beyond the possibility of surgical eradication. Just how extensive the growth may be and whether or not operation is feasible, can be determined only by examination under an anesthetic, an opportunity that should be afforded every woman the victim of cervical cancer.

The operation itself should never be performed by the vaginal route, except possibly in the very

obese individual. In cases where the actual cautery has been thoroughly applied to the cervical growth, the uterus will be found more free upon examination one week later, while the growth itself will seem to have shrunk. Whatever apparent advantage may have been gained in this way is more than counterbalanced by the fact that these patients take a second anesthetic very badly indeed, and for this reason the risk of the abdominal portion of the operation is greatly increased. It is customary at the present time to do both the cervical cauterization and the laparotomy under the same period of anesthesia. The cervix is cauterized, an iodine pack introduced, and the abdominal operation immediately proceeded with.

Some details are worthy of particular attention, as aiding in the reduction of the mortality. A free incision, permitting a good exposure, should be made. Where the abdominal wall is thick, a wedge of fat may be excised. An electrically heated table will combat the tendency to shock, thus preserving the patient's general condition to the utmost. The best illumination obtainable, as by the Zeiss light, is essential. Such advantages as these aid the operator in avoiding shock and hemorrhage, and give the patient the best chance of surviving an exhausting operation. The Trendelenburg position is not used until after the ureters have been dissected out. In the thin individual no great difficulty may be met with until the vaginal veins are encountered. The vagina is dissected well down to the pelvic floor, ligated at its lateral margins, and divided with or without the use of the Wertheim clamps.

The pelvic glands may or may not be removed. If the patient's condition is good, it is preferable to remove them. The fact should be borne in mind that all enlarged glands are not necessarily cancerous, but may be enlarged because of septic absorption. The vaginal mucosa is united with the vesical peritoneum in front and with the rectal peritoneum behind, the pelvic peritoneum brought together, and the abdominal wound closed. A gauze drain may be used in the vagina, extending to the region of the broad ligaments. In some cases the abdominal wound may be drained, and the patient placed in the Fowler position. The duration of the operation will vary. In the early cases the operation is less difficult, in the more advanced more so. The patient's vitality is often at low ebb, due to prolonged suppuration and recurrent hemorrhages, and after tolerating operation for an hour, or an hour and a half, the patient collapses. Ordinarily the Wertheim operation is one of the most difficult in surgery. The patient should be stimulated early, before the alarming symptoms of collapse supervene.

At a recent meeting of the American Gynecological Association, an attempt was made to establish American statistics in regard to the results of treatment of cancer of the uterus by surgeons in this country, which brought to our attention two notable facts. First, that there was little in this country in the way of statistics relative to the treatment of cancer of the cervix; second, that almost universally the women coming under treatment for cancer of the uterus did not appear until the disease had advanced beyond the possibility of operative cure. Of seventy patients with cancer of the cervix operated

*Summary of a lecture before the Third Clinical Congress of Surgery of North America, Academy of Music, Brooklyn, New York, November 14, 1912.

upon at the Johns Hopkins Hospital by Doctor Kelly and his assistants, and reported upon five years after operation, it was found that twenty had died primarily, nine had disappeared, two had died of pneumonia, fourteen were then free of recurrence, the remainder having died in the interval. Of forty-eight cases done by the writer, thirteen patients are free of recurrence after five years. The prognosis is uncertain even after operation. As a rule the glandular type of cancer tends to recur early, but frequently cases that might be regarded as cured judging from the operation alone show early recurrence, while others thought to be less favorable remain free for considerable time.

As to temporary relief by means of an incomplete operation, authorities differ, some holding that the palliative operation is a menace to the patient. When the offensive discharge, the recurrent hemorrhages, the occurrence of fistulæ, and the onset of pressure symptoms are considered, it seems only right to give these patients every opportunity of even temporary relief, even at the risk of hastening the development of the growth. The excellent German statistics are favored by the fact that the German women tend less to obesity than do the women in this country, thus permitting a better operative exposure. The education of the public in Germany in regard to cancer is well in advance of that in our country, the patients coming under treatment earlier in the disease. In the German clinics fifteen operations for cancer of the cervix may be done in a single month by a single operator, who so becomes particularly skillful in the performance of the operation itself. This is an important factor in the reduction of the mortality. In the United States steps should immediately be taken to instruct the people in regard to cancer of the uterus.

The laity has become well informed as to appendicitis and tuberculosis, and could be similarly taught the earliest symptoms of cancer of the uterus. Instruction as to what cancer is, the earliest symptoms by which its presence may be suspected, and the fact that when taken early it may be cured, would all tend to bring these patients under treatment, while the possibility of eradicating the disease still exists. The popular fear of cancer, now so generally observed, would greatly facilitate such a campaign of publicity. Furthermore, the profession should follow and study these cases with the greatest care. On such measures as these depend our progress and success.

Therapeutical Notes.

Treatment of Glaucoma.—G. C. Savage, in the *Southern Medical Journal* for May, 1912, describes his experience with subconjunctival injections of sodium citrate solution, as first advocated by Fischer and Martin, in one case of subacute and three cases of chronic glaucoma. The method is as follows: After cocaineization of the eye, a hypodermic syringe is charged with a sterile sodium citrate solution, not weaker than four per cent. nor stronger than five per cent., and from five to fifteen drops of the fluid injected beneath the conjunctiva, the needle entering just behind the corneoscleral

junction. There is more or less pain for some hours after, but the patient is then freed of all suffering. The injection should be repeated when there is evidence of a return of the excessive intraocular pressure. After a few weeks a solution consisting of one part of five per cent. sodium citrate and two parts of normal salt solution, may be substituted for the citrate alone, causing less pain. Sodium carbonate in five to ten grain doses should be given internally every two or three hours during the treatment.

In each of Savage's cases the tension was promptly reduced by these measures. In the case of subacute glaucoma, the vision, previously nil, in twenty-four hours became 10/30. Two days later the tension had increased again, and the vision was again at zero; a second injection was given, and in twenty-four hours the vision was 10/20. After two more injections an iridectomy was performed.

In the three cases of chronic glaucoma, the injections proved very efficient in relieving pain by lowering the intraocular tension, adding considerably to the effect of eserine, which was already being given. Savage thinks it proper to use eserine in conjunction with the Fischer treatment. In acute or subacute glaucoma he would, obviously, not hesitate to do an iridectomy; this operation is greatly facilitated by the previous reduction of tension with sodium citrate. After the iridectomy, the injections should be resorted to as soon as the wound has sufficiently healed.

Treatment of Diarrhea in Children.—R. Fischl, in *Nouveaux remèdes* for June 24, 1912, is credited with the following combination for use in cases of diarrhea in children where dietary restrictions or alterations are not considered necessary:

R. Gambir,	2 grammes;
Tincturæ cinnamomi,	10 grammes;
Benzosulphinidi,	0.925 gramme;
Aquæ destillatæ,	90 grammes

M. Sig.: One teaspoonful every half hour.

Respiratory Gymnastics in Chronic Pleuritis.

—Henri Dufour, in *Bulletins et mémoires de la Société médicale des hôpitaux de Paris*, July 5, 1912, reports the case of a man suffering from empyema of long standing in whom, Estlander's operation being refused, nonoperative measures were exclusively relied on, with ultimate satisfactory result. X ray examination upon injection of bismuth paste showed a large pleural cavity extending from the lower margin of the thorax to the upper border of the scapula. Endopleural irrigations of an alcoholic preparation and of colloidal silver were alternately practised, but stress was chiefly laid on respiratory gymnastic exercises, consisting of the performance two or three times daily of slow, deep respirations, with elevation and depression of the arm on the affected side corresponding in time with inspiration and expiration. The opposite side of the thorax was simultaneously strongly compressed in order to prevent its expansion during the exercises. After some months of treatment a complete cure, with disappearance of the pleural cavity, was obtained, though the case had been, more properly, one for surgical intervention.

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CHARLES E. DE M. SAJOUS, M. D., LL. D.,

Supervising Editor.

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INFLUENZA AND PNEUMONIA.

In our issue for November 23d we commented editorially upon the fact that Loeffler's bacillus could no longer be considered a necessary factor in the pathogenesis of influenza, this organism being absent in nearly two thirds of cases of the disease, while the pneumococcus predominated among the pathogenic germs found in the sputa. We urged that inasmuch as, in keeping with the prevailing views, influenza could be evoked by different kinds of bacteria, the most prominent of which was the pneumococcus, we should always be on our guard against pulmonary complications in these cases.

Bronchitis, bronchopneumonia, lobar pneumonia, and pleurisy are not only of frequent occurrence as complications of influenza, but in cases in which the influenza bacillus occurs beside the pneumococcus, the former exerts a deleterious effect on the course of the affection awakened by the latter, or in fact upon any disease due to pathogenic organisms. As shown by Livierato some years ago, and others since, when the influenza toxine is injected into an animal in conjunction with some microbe only slightly pathogenic for that animal—Friedländer's bacillus in the rabbit for example—the virulence of the bacillus is increased. Again, when influenza toxine is added to cultures of a bacillus to which an

animal is but slightly susceptible—Eberth's bacillus in the rabbit for instance—successful inoculation occurs. The lesson afforded by these experiments simply rehearses what practical experience teaches, viz., that the presence of the influenza bacillus in the secretions means that of a factor which tends to debilitate the patient and render him all the more susceptible to the morbid influence of the other germs present—most prominent among which is the pneumococcus. In other words, *pulmonary complications, and particularly pneumonia, threaten every case of influenza*, and were this fact always borne in mind, many precious lives would be saved by timely treatment.

What timely treatment means under these conditions cannot be placed upon a footing of certainty, but this much is certain: The coal tar products, antipyrine, acetanilide, etc., so commonly resorted to in the treatment of influenza nowadays, are not adapted to ward off pulmonary complications. Their early history, when used as antipyretics in the course of infections, is studded with fatal heart failures due to their depressing action. Nor is random symptomatic treatment, that heritage of ignorant empiricism, likely to counteract the debilitating effects of the influenzal toxine or to promote a defensive reaction against the pneumococcus. Opiates, hypnotics, and antispasmodics all owe their physiological action to a temporary paresis of nerve centres,—merely another form of prostration added to that which the disease itself entails. Headache, insomnia, rhachialgia, etc., may seem to demand internal medication; but a clear exposé to the patient of the dangers such remedies entail, with cold compresses and menthol over the brow for the headache, hot fluids internally for the insomnia, and liniments over the aching back, will tide over the short period these symptoms last, while *judicious* medication is used to oppose the lethal trend of the influenzal process.

Just as we have urged in these columns that tuberculosis should be anticipated by active treatment for that disease in all cases of bronchitis which show any degree of chronicity, so do we urge that *pneumonia or bronchopneumonia should be anticipated in every case of influenza* by treating all such cases remedially as if pulmonary complications had already developed. Such a course involves no neglect of the primary disorder since the prophylactic agents indicated are as efficient as any now available to check its progress. Calomel in so called tonic doses, one twelfth grain every two hours until one grain has been taken, to enhance the antitoxic activity of the liver, followed, if there is no cough, by sodium benzoate, ten grains every three hours, or if there is a cough, by creosote carbonate (which,

though, an oil, is preferably given in capsules), five grains every three hours, taken in the midst of a meal when possible to prevent gastric disturbances, have served us faithfully even though pulmonary phenomena had already begun. Others may have better means at their disposal; so much the better—provided that, *from the start*, the death dealing proclivity of influenza is realized and thwarted.

THE NEW ORTHOPEDIC SECTION OF THE AMERICAN MEDICAL ASSOCIATION.

The orthopedic surgeons are to be congratulated upon the success of their efforts to establish a section in orthopedic surgery of the American Medical Association, which will hold its first session at the meeting of the latter next summer in Minneapolis. The officers are in hopes that the younger men who are doing work in this branch, as well as general surgeons who do orthopedic work occasionally, will interest themselves in this section and understand thoroughly that membership is by no means to be confined to specialists of superior skill and experience. The NEW YORK MEDICAL JOURNAL has always recognized the high importance of this kind of surgery; indeed it has given special attention to all medicine as well as surgery that relates to the child, and will welcome therefore communications from members of the new section and endeavor to give them the prominence and illustrative adornment that they deserve. Dr. Newton M. Shaffer, chairman of the section, 31 East Forty-ninth Street, New York, suggests that this is a good opportunity for orthopedists who are not members of the association to become such.

BASTIAN ON THE ORIGIN OF LIFE.

References to the work of the undaunted Professor H. Charlton Bastian on the origin of life were made editorially in our issues for November 18 and December 23, 1911, while a summary of the work done up to that time appeared in the latter issue from the pen of the distinguished biologist himself (page 1270). In the *Lancet* for November 30th last, Professor Bastian once more replies to some of his critics, taking up the various doubts thrown on his work one at a time.

Some commentators have suggested that the objects which he found in his sealed tubes were non-living organisms. To this Bastian replies that his organisms multiply freely when transferred to other suitable nutrient medium. The suggestion that the organisms found in the sediment of the tubes were not there until the tubes were opened

and then gained entrance in the inrush of air, is ridiculous, for the inrush of air is very slight, certainly insufficient to carry any organism to the bottom of the tube. That the organisms have been contained in the pipette used for the removal of the sediment is refuted by the statement that the pipette is always thoroughly heated in a spirit lamp just before being introduced into the tube. Some of the critics suppose that the torulæ found fall from the air on to the drop of fluid for examination. As this drop is contained in the pipette until it reaches a clean slide, where it is deposited and then covered at once with a clean slip, such an argument is invalid. It is further refuted by the fact that many tubes yield barren drops, yet all the conditions were precisely similar. Others contend that the organisms are only the dead organisms which are in the fluids used in the manufacture of the media. It is granted that organisms may occur in very small numbers in some of the ingredients used, but these are seldom sufficiently numerous to be found in control tubes. Sterilization at 120° to 145° C. for five to twenty minutes on three occasions would kill any of these which might be present.

But, after the lapse of months with the tubes exposed to suitable conditions, elementary living organisms are found in large numbers. Bastian believes that these arise *de novo* in the fluid which has been enclosed in hermetically sealed glass tubes and sterilized as described. He believes that their origin takes months, and that their growth in this elementary stage is very slow. He contends that the visible forms which resemble bacteria and torulæ, and which are present only after many months of incubation, are not the original forms of this spontaneous life, but are higher stages, in the course of development, the lower being submicroscopic. Another fact in support of Bastian's contention regarding his spontaneous generation of life is that the chemical solutions which he employs in making up the medium for the development of these organisms undergo changes with time which cause them to lose their powers of supporting this process of spontaneous development and they, therefore, yield barren tubes. Overheating of the sealed tubes, as by exposure to the hot summer sun, will suffice to destroy the developing organisms and such tubes will be barren. Many of the tubes, barren on account of age of the solution of silica, have been inoculated with organisms taken from old stock supplies and they have shown free growth and multiplication of the organisms. Therefore they are not incapable of supporting life, but they are quite incapable of originating it.

Having offered the suggestion that the forms of life which he can demonstrate to have arisen in his

sealed tubes are not the earliest stages of life but only the later, and visible, forms, Bastian concludes by saying: "It may be safely affirmed that living matter, like crystalline matter, must always begin from a collocation of its elements, and then can only, after a time, reveal itself as minutest particles tending to develop in this or that manner in accordance with the extremely varied nature of the initial molecular combinations. And for our sterilized solutions we can only suppose that the conditions are such as merely to permit of the production of ultramicroscopic particles that slowly, in the course of months (rather than in a few days after the manner of infection by preexisting organisms), develop into bacteria and torulæ, though the latter have the potentiality of growing into simple moulds."

Discussion of the matter has received new impetus from the sensation caused by the recent utterances of Schaefer, and, although we may be far from satisfactory conclusions, still many investigators will persist in their belief that life is but a phase of the omnipresent force already identified under its protean forms of heat, light, and electricity.

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PNEUMONIC PLAGUE AND IMMUNIZATION.

The June number of the *Philippine Journal of Science* contains very instructive and interesting studies on pneumonic plague and plague immunization. Although it does not bring out anything new or startling a review of the twelve articles which the issue contains should give a clear summary of our present knowledge of pneumonic plague. The issue also contains a number of illustrations very well done, especially one of the human lung in pneumonic plague, showing well marked areas of lobular pneumonia and pleural exudate. The illustrations showing the physicians and attendants at the plague hospital remind one of the well known pictures of the middle ages depicting physicians and carriers during a plague epidemic.

It is stated in this issue that the only great epidemic of pneumonic plague of modern times occurred in Manchuria during the winter of 1910-1911, when the atmospheric temperature was many degrees below zero centigrade, and the disease spread with amazing rapidity. Although, during the past fifty years, there have been millions of plague cases in India, and from two to five per cent. of these have been of the pneumonia type, yet this form of disease has not assumed epidemic proportions; the largest epidemic of this kind in India, with 1,400 deaths, occurred in Kashmir, at an elevation of 1,524 metres above the sea level, during very cold weather, while during the present epidemic about 50,000 people died. From this observation the conclusion is drawn that the failure of pneumonic plague to spread in India is due to the high temperature that prevails there and to the

fact that the plague organisms, contained in fine droplets of pneumonic plague sputum, will suffer death from drying in a few minutes unless they are suspended in an atmosphere with a small water density. It seems to be without doubt that infection in pneumonic plague follows the inhalation of droplets of pneumonic sputum directly from man to man and by the more or less intimate contact of healthy individuals with an infected person. Whatever may have been the primary source of the epidemic its dissemination occurred quite independently of tarbagans, rats, donkeys, or other animals. There seems to be no method of treatment which can be called successful, and vaccination does not afford the same protection against pneumonic plague as against bubonic plague. The only successful preventive would be the strictest personal precautions against direct contact and inhalation of air pregnant with pneumonic plague sputum. Doctor Strong speaks of these personal precautions and says that he and his colleagues never entered the wards unless protected by a proper mask, by goggles, by a cotton uniform, and usually also by rubber gloves. Although they were in the wards each day until the end of the epidemic and were often with patients for several hours continuously, giving intravenous injections, leaning over coughing patients, exposing agar plates before them, making physical examinations, etc., they remained entirely healthy. The best mask is stated by Barber and Teague to consist of a hood of heavy Canton flannel, covering the entire head and tied in snugly at the neck; with a window in front it is not so very uncomfortable. But it must be remembered that no mask offers an absolute barrier to the passage of the bacilli into the mouth and nostrils of the subject, and the authors warn against the false sense of security which may result from wearing a mask.

AUTOTHERAPY.

We have given considerable space to the results and theories of Dr. Charles H. Duncan in this and the previous issues of the *JOURNAL*, for the theory involved is of fascinating interest. If the heterogenous vaccines are valuable, as many competent therapists maintain, it follows logically that the autogenous are equally if not more so. The necessary equipment lies ready to every practitioner's hand, there is no expense involved, and the procedure does not contraindicate drafts upon the ordinary materia medica; consequently we expect that the author's request for a fair trial will be widely complied with, and look forward with interest to reports from therapists everywhere. Not least among the inducements to try this simple method is the apparent freedom from all danger.

PHYSIOLOGICAL TISSUE INFERIORITY AND ENTEROPTOSIS.

Tuffier gave the name of *infériorité physiologique des tissus* to a peculiar laxity of the body tissues observed in young girls. These children have a narrow thorax, too long a neck, the head bent forward, a tendency toward the vertical on the part of the lower ribs, and predispositions to flat foot

and lordosis. Another phenomenon is their ability to play to perfection the childish game of subluxating the first phalanx of each finger on the metacarpal of the preceding one, a trick familiar to school children. The significance of this laxity is pointed out by P. Desfosses in *Presse médicale* for November 30, 1912; such girls are extremely likely to suffer in later life from enteroptosis. Even at the age of puberty, palpation is likely to disclose a lowered liver and an accessible right kidney, while the x ray will show a gastropptosis and a prolapsed colon. Leucorrhœa and irregularities in menstruation are common among them.

THE COMPLIMENTS OF THE SEASON.

Christmas will have come and gone before the next issue of the NEW YORK MEDICAL JOURNAL reaches our readers, hence we shall not be considered premature in our wish that they enjoy as much of the holiday spirit as is possible to men for whom the festival means probably only more work than usual. May their patients greet them with even more than the customary joy, and may their homes radiate seasonable comfort and good cheer!

Medical Law.

X. THE PHYSICIAN AS WITNESS.

In the case of *People vs. Fritch*, 136 Northwestern Reports, 493, the Supreme Court of Michigan reviewed the trial and conviction of a doctor on the charge of causing death, in attempting to procure an abortion.

Upon the trial, Doctor Grimes, who, in connection with other physicians, made a post mortem examination of deceased, after testifying to the condition in which he found the body, was asked the following question:

"I want to ask you a hypothetical question. Supposing that the uterus of this dead girl, Maybelle Millman, after her death, with the portion of the body containing it, had lain in Ecorse Creek and Detroit River from the night of August 27th, 1909, to the 6th day of September, 1909, a period of ten or twelve days, that it was then recovered and a post mortem examination was had upon it and other portions of the body which developed the following facts: An enlargement of the vagina, the cervix more or less dilated, so that an ordinary metal probe about one quarter of an inch in diameter could be passed without using any force, and a quarter inch glass probe could be passed through the outer to the inner os without force, and through the inner os into the uterus with very slight force, the uterus enlarged; two blood clots adherent to the posterior wall of the uterus, a microscopic examination of the uterus showing deciduous cells; the hair which grows about the private parts being shaved off, as if she had been prepared for an operation; the inside of the vagina and cervix and the uterus were found to be the tongue was protruding; the rectum dilated, which might indicate that she had been prepared for an operation; the proof in the case that the girl, just prior to the 27th of August, had passed two menstrual periods without menstruating; that she had used the usual abortifacient drugs, extract of cotton wood bark, to relieve herself of the pregnancy; had possessed a catheter, an instrument sometimes used to procure an abortion; had consulted her friends about her condition; was worried about it, and, upon the suggestion of one of her friends that the drug 'would bring her around' and relieve her of her preg-

nancy, had procured and taken more extract of cotton root bark, but without the desired result; had consulted a physician, this defendant, Dr. George A. Fritch, and had made an appointment with him about an operation, and had told her friends that the physician, this defendant, had told her that he would charge her \$25; that an arrangement had been agreed upon that she should pay \$10 down, and the balance as she could; that she would come to him on the following day, Friday, August 27th, in the afternoon. Taking all those facts together, what would you say, was the girl, beyond any reasonable doubt, pregnant on the 27th day of August, before her visit to the doctor?" To which he answered, "Yes." Also the following: "Q. I ask you this question, another question: Supposing you add to the foregoing facts that the girl's dead body has been dismembered, that is, cut into several parts or portions, and the various portions distributed and introduced into three sacks, the first sack containing the trunk or torso, that portion from the neck down to, or near the navel; the second sack the head and legs below the knees; the third sack that portion from above the navel to just below the knees; that this dismembering of the body had been done as indicated by every circumstance in the case in the office of the physician this girl had consulted, this defendant: that, after placing these several portions of the body in the sacks, he carried them from his office about 9 o'clock at night, put them in an automobile, conveyed them to Ecorse Creek between 9 and 11 o'clock at night, and, after putting two ordinary bricks in each of the first two sacks, threw them into the creek between the suburban railway bridge and the highway bridge, where the water was from eight to ten feet deep. Would these facts in connection with the facts contained in the previous questions, especially the fact that there were clots in the uterus found at the post mortem, lead you to believe, and would they all tend together to indicate to you beyond any reasonable doubt, that there had been a criminal operation by the physician with whom the girl had made the appointment, and who afterward thus dismembered and disposed of the body?" Upon objection the court said: "I want to save that question for a time. Q. I will ask another one: Supposing the post mortem examination exhibited the fact that the uterus was enlarged, the vagina enlarged, the cervix enlarged, the uterus empty, deciduous cells, blood clots in the uterus, would those, under all the circumstances and facts indicated in the previous questions, indicate that there had been a criminal operation upon the girl, Maybelle Millman?" A. "Yes." Q. "Do all these facts stated in the several questions confirm you in a belief fixed and settled that this girl, Maybelle Millman, was pregnant on August 27th, 1909, and that there had been a criminal operation that resulted in her death?" A. "Yes, sir."

Upon reviewing the case, Mr. Justice Ostrander, of the supreme court, presented the law justifying opinion evidence, and applied it to these questions in the following language:

The late Mr. Justice Campbell, delivering the opinion of this court in *Evans vs. People*, 12 Mich. 27, 35, used the following language, stating two important principles of the law of evidence applicable in the case at bar: "It is not always easy to determine the propriety of receiving or rejecting testimony concerning matters involving, apparently to a greater or less extent, medical or other scientific investigation. There are many cases where it is difficult to determine whether the facts to be examined are to be considered beyond the range of ordinary intelligence. And the decisions are by no means clear or satisfactory upon the distinctions. The principles on which the authorities rest are more consistent than the attempts to apply them. The primary rule concerning all evidence is, that personal knowledge of such facts as a court or jury may be called upon to consider should be required of all witnesses where it is attainable. It is also an elementary rule that, where the court or jury can make their own deductions, they should not be made by those testifying. In all cases, therefore, where it is possible to inform the jury fully enough to enable them to dispense with the opinions or deductions of witnesses from things noticed by themselves, or described by others, such opinions or deductions should not usually be received. But experience has shown that many cases exist in which it is impossible by any description, however graphic, to explain things so as to enable any one but the witness himself to see or comprehend them as they

would have been seen or comprehended could the jury have occupied his position of observation. In such cases, the witness must give his own impressions and conclusions or his narrative is useless; adding, however, as full explanations as the nature of the case will admit, so that his capacity and truthfulness may be tested as far as practicable." After giving some examples, he adds: "In all these cases the witness is allowed to testify to a result because, without such evidence, the jury cannot be supposed able to arrive at a knowledge of it, and therefore such aid is indispensable."

One of the principles enunciated is that the testimony of such witnesses is dispensed with whenever the point is reached at which the tribunal is being told that which it is itself entirely equipped to determine without the witness's aid. 3 Wigmore, Ev. § 1918. In the same opinion Mr. Justice Campbell states the rule, well enough known, but not always observed, that, when a scientific witness testifies to matters within the comprehension of the ordinary witnesses, he stands on the same footing with them as to all such testimony and, as to such matters, can give his opinions only where any other observer might do so. It does not require argument to prove that no medical witness called in the case at bar should have been asked for or permitted to give the opinion that a criminal operation had been performed. To say that in this case any operation must have been criminal does not meet the objection. It was the duty and province of the court, not that of expert witnesses, to advise the jury concerning the facts necessary to establish a crime.

The second hypothetical question set out in the statement of facts herein, called upon the witness to state who in his opinion committed the criminal act, and by necessary inference from all data supplied by the question itself called upon the witness to state, in substance and effect, that respondent was guilty as charged. The court interposed and the question was not answered. But the hypothetical question first above set out is little less objectionable. Undoubtedly it was competent to include in the premises for an expert opinion the fact that the girl supposed herself to be pregnant, having passed two monthly periods, because that fact, like a statement of it made by the girl as patient to the witness as her physician, might properly be considered. So all the evidence afforded by observation of the body of the deceased, considered with respect to the probable time when she died and the immersion of the body in water, should have been included in the premises stated. But how is it possible for a scientific opinion in the case to be aided by the facts that bricks were placed in the sacks with portions of the body, that decedent had taken cotton root, possessed a catheter, had made an appointment with the respondent about an operation upon terms stated, that the body had been carried in an automobile from the respondent's office to Ecorse Creek, that her body was dismembered in the office of the physician consulted by her? It was to data and observations impossible to lay before the jury and be comprehended by them, and such connecting and incidental data as afforded a basis for scientific opinion and deduction, that the experts should have been confined. The objections to the questions here stated were made by counsel for respondent and were overruled. That the error was prejudicial to respondent must be conceded. These witnesses whose opinions were rested in large part upon nonscientific data, which the jury was perfectly able to comprehend and estimate, whose answers to the questions could not well have been other than those which were expected and received, were particularly accredited by the court in the charge. I do not mean to intimate that in a proper case the opinion of a witness may not be based upon all of the testimony, when it is undisputed, nor that it is impossible to conceive of a state of facts used as the basis for opinion, one or more of which may be untrue or not proven, and the opinion still have value. I assume that the form of question used in this case suggested the instruction that, although some facts stated therein were regarded as not established, the opinion might nevertheless have value. But I cannot conceive that the value of a scientific opinion may properly be determined by a jury as they find the data upon which the opinion is based material or not material to the conclusion expressed by the witness.

For these errors and for others committed in the

trial, the conviction was set aside and a new trial ordered.

XII. MISCELLANEOUS REGULATIONS AND MATTERS.

In the case of *Finn vs. Modern Brotherhood of America*, 136 Northwestern Reports, 850, an action to recover a benefit under an insurance policy, the beneficiary was permitted to testify that she was present when the insured was examined by the defendant's physician and that he did not ask the insured the questions which the defendant in its defense to the action claimed were falsely answered.

The supreme court held that this evidence was competent and properly admitted.

It was also urged before the court that plaintiff was conclusively estopped to deny that the disputed answers to questions in the application were not the answers of the insured by the retention by her of the certificate without objection.

This question, having been submitted to the jury for determination, upon instructions to which neither party excepted, the supreme court declined to interfere, but expressed the view that the question was properly given to the jury.

News Items.

The Harvey Lectures.—The next lecture in the course will be delivered on the evening of January 18th, at the New York Academy of Medicine, by Major Charles J. Russell, Medical Corps of the United States Army, his subject being the Prevention of Typhoid Fever.

Civil Service Examinations.—Among the positions for which the New York State Civil Service Commission will hold examinations on January 11th is that of trained nurse to State institutions, the salary being \$420 to \$500 a year, with maintenance. This examination is open to both men and women.

Use of the Common Towel Prohibited.—The Secretary of the Treasury has notified medical officers of the Public Health Service, State and local health authorities, and all others concerned, that Article 3, of the general Interstate Quarantine Regulations has been amended by the addition of the following paragraph:

Common carriers shall not provide in cars, vehicles, vessels, or conveyances operated in interstate traffic, or in depots, waiting rooms or other places used by passengers traveling from one State or Territory or the District of Columbia, to another State or Territory or the District of Columbia, any towel for use by more than one person: *Provided*, That towels may be used again after having been sterilized with boiling water.

Syracuse Medical College Dispensary.—The cornerstone of the new dispensary building of Syracuse Medical College was laid, with suitable ceremonies, on Saturday afternoon, December 14th. Chancellor James R. Day, of the university, put the stone in place, after which the guests adjourned to the medical college, where addresses were delivered by Dr. William S. Thayer, of Johns Hopkins University; the Hon. Augustus S. Downing, first assistant commissioner of education, and the Hon. Alan C. Forbes, representing the free dispensary association.

Banquet of the Methodist Episcopal Hospital Ex-Internes.—The twenty-fifth anniversary of the founding of this institution was celebrated on the evening of December 11th with a banquet given by the Society of Ex-Internes of the Methodist Episcopal Hospital. Practically every former interne of the hospital who is now practicing medicine in Brooklyn was present, and all joined in the presentation of a loving cup to Dr. Lewis S. Pilcher, one of the founders of the institution. Dr. William F. Campbell made the presentation speech. Dr. Robert W. Shearman, president of the society, was toastmaster, and among those who responded to toasts were Dr. Henry P. de Forest, Dr. H. Beeckman Delatour, and Dr. H. G. Webster.

Cayuga County Medical Society.—At the annual meeting of the Medical Society of the County of Cayuga, N. Y., held in Auburn on November 10, the following officers were elected: President, W. St. John, of Auburn; vice-president, Dr. W. St. John, of Weedsport; secretary, M. J. Lewis, of Auburn; treasurer, F. A. Lewis, of Auburn; George W. Greene, R. C. Almy, C. B. Smith, A. W. Gilmore, and E. J. Eldridge, all of Auburn; delegates to the House of Delegates State Society, C. B. Smith, Edwin; alternate, S. E. Austin; for delegate to the State District Branch, H. E. Burdick; alternate, Ledra Heazlett.

Physician Wanted in a Missionary Hospital in Mexico.—Dr. William B. Smith, candidate secretary of the Student Volunteer Movement for Foreign Missions, states that there is a vacancy on the staff of the Good Samaritan Hospital, at Guanajuato, Mexico, a first-class hospital recently established by the Methodist Episcopal Church. The yearly report of the hospital shows 300 visits to homes, 4,579 consultations, 24,523 treatments, 12,200 minor and 270 major surgical operations, and medicines furnished to 17,587 patients. The persons treated represented fifteen nationalities. Communications may be addressed to the director of the hospital, Dr. Levi B. Salmans, Good Samaritan Hospital, Guanajuato, Mexico. Mr. Smith will be glad to communicate with any medical men who are interested in the need for physicians in foreign lands. The address is 125 East Twenty-seventh Street, New York.

Venerable Diseases to be Reported in New York.—On December 17th Commissioner Lederle sent out circular letters to the physicians of the greater city of New York, informing them that in future they will be expected to report promptly all cases of venerable diseases coming under their observation, omitting the name and address of the patient, but stating the sex, age, character, and stage of infection, and all other information. A supply of report cards to be used for this purpose will be furnished by the department upon application. The Wassermann test for the diagnosis of syphilis is made without charge by the health department, which also provides facilities for the free bacteriological examinations in the diagnosis of gonorrhea. A diagnosis clinic for venerable diseases is held every morning at the central office of the department, where patients may be referred by physicians. For further information apply to Department of Health, Division of Communicable Diseases, Centre and Walker Streets, New York.

Personal.—Dr. Reid Hunt, of the United States Public Health Service, has been appointed a member of the board recently created by the Bureau of Mines to investigate the hygienic precautions against dangers in mines.

Dr. James H. Brown has resigned as chief resident physician of the Episcopal Hospital, Brooklyn, and will devote his time in future to his private practice.

Dr. Morris J. Lewi, of New York, for more than twenty years secretary of the State Board of Medical Examiners, has resigned. Dr. George W. Hoffman of New York, assistant in clinical pathology at the College of Physicians and Surgeons, has been appointed by the State Board of Regents to succeed Dr. Brown.

Dr. Russell D. Carmen, of St. Louis, will assume charge of the x-ray laboratory in the Mayo Clinic, Rochester, Minn.

Dr. Franz Pfaff, who has been connected with the Harvard Medical School since 1894, has tendered his resignation as professor of pharmacology and therapeutics, to take effect on January 1, 1913.

Dr. William Greenfield has been appointed a full time instructor in pathology at the Baltimore College of Physicians and Surgeons, and Dr. Thomas L. O'Brien, of Philadelphia, has been made assistant in anatomy in surgery in the same institution.

Dr. John G. Cecil has resigned from the executive committee of the medical faculty of the University of Louisville, and Dr. J. Garland Sherill, professor of surgery in the university, succeeds him.

Dr. George W. Hoffman, of the University of Medicine and Dentistry, has been elected a member to deliver the Cartwright lectures of the Alumni Association of the College of Physicians and Surgeons, at the University of Medicine and Dentistry, at Newark, N. J., in 1913. The date of the delivery of the lectures will be announced later.

Chautauqua County Medical Society.—The annual meeting of the Medical Society of the County of Chautauqua, N. Y., was held in Jamestown on December 10th, under the presidency of Dr. H. A. Eastman, the retiring president, who delivered an address on the Use of Obstetric Forceps. Dr. F. C. Rice, of Ripley, read a paper on the Treatment of High Blood Pressure, and Dr. Charles E. Goodell, of Jamestown, presented a paper on Duodenal Ulcer. The election of officers resulted as follows: President, Dr. N. G. Richmond, of Fredonia; first vice-president, Dr. George F. Smith, of Falconer; second vice-president, Dr. F. C. Rice, of Ripley; secretary and treasurer, Dr. J. W. Morris, of Jamestown (reelected); delegate to the State society, Dr. V. M. Griswold, of Fredonia; alternate, Dr. F. C. Rice, of Ripley; censor, Dr. E. M. Seashell, of Jamestown (reelected). Dr. James Watt, of Sherman, and Dr. Eliza F. Cotts, of Jamestown, were elected to membership.

Doctor Wiley's Successor.—On December 16th President Taft named Dr. Carl L. Alsberg to succeed Dr. Harvey W. Wiley as chief of the Bureau of Chemistry, Department of Agriculture, and administrator of the pure food and drugs act. Doctor Alsberg is now employed as a chemist in the Bureau of Plant Industry of the Department of Agriculture. He graduated from Columbia University, receiving the degree of A. B. in 1892, and the degree of M. D. in 1900, from the College of Physicians and Surgeons. He then went to the University of Strasbourg; was a research worker at the German Imperial Institute for Experimental Therapeutics at Frankfurt-on-the-Main, and studied at the University of Berlin, working while in Germany under Schnieburg, an authority on chemical pharmacology. In 1903 he took charge of the department of biological chemistry at the Harvard Medical School. In October, 1908, he entered the Bureau of Plant Industry, where he has been in charge of the pharmacological laboratory, working specially on plants poisonous to stock.

An Appeal for the Slater Industrial School for Negroes.—The Slater Industrial and State Normal School for Negroes, at Winston-Salem, N. C., one of the most important educational institutions for colored people in the south, has lands and buildings, including a hospital, which cost over \$50,000 and are owned by the institution. Some time ago a citizen of Winston-Salem tendered the trustees \$5,000, provided they could raise a like amount, to be used in building a hospital, where colored girls could be educated as trained nurses. His offer was accepted, and with the \$10,000 a hospital was built worth double this amount, as the students and friends of the school did much of the manual labor. The remarkable result of this gift has induced the State Legislature to offer \$12,000 for the enlargement of the school, provided a like amount can be raised by the trustees. Mr. William A. Blair, of Winston-Salem, treasurer of the school, appeals to all who are interested in the work of the school to assist with a small contribution.

Assistant Surgeons in the Public Health Service.—A board of commissioned medical officers of the United States Public Health Service will be convened to meet at the Bureau of the Public Health Service, Washington, D. C., on Monday, January 13, 1913, for the purpose of examining candidates for admission to the grade of assistant surgeons in the service. Candidates must be between twenty-three and thirty-two years of age, and graduates of a reputable medical school. Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur. After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon. Assistant surgeons receive \$2,000, passed assistant surgeons \$2,400, surgeons \$3,000, and senior surgeons \$3,500 a year. When quarters are not provided, commutation at the rate of \$30, \$40, and \$50 a month, according to the grade, is allowed. All grades above that of assistant surgeon receive longevity pay, ten per cent. in addition to the regular salary for every five years' service up to forty per cent. after twenty years' service. The tenure of office is permanent. Officers traveling under orders are allowed actual expenses. For further information, or for invitation to appear before the board of examiners, address Surgeon General, Public Health Service, Washington, D. C.

Pith of Progressive Literature.

MEDIZINISCHE KLINIK.

November 3, 1912.

1. MATTHES: Diagnosis of Miliary Tuberculosis.
2. MEYER: Pharmacology of Vegetative Nervous System.
3. HEINE: Tuberculosis and Tuberculin (*To be continued*).
4. RISENFELD: Juvenile Paralysis.
5. JANKOWSKI: Percussion of Apices in Pulmonary Tuberculosis.
6. LENZMANN: Therapy of Tussis convulsiva.
7. BECKER: Anthrax and Sphacelus.
8. WÄNGERLIN: Middle European Land in Its Plant Development.
9. KAHANE: Physical Therapy of Heart Diseases (*To be continued*).
10. ASCHREIM: Therapy of Contracted Pelvis.
11. SCHULTZE and STÖRBERG: Apoplexy in Arteriosclerotic Patient. Result of Drenching.

November 10, 1912.

12. RUMPE: Treatment of Traumatic Heart and Vascular Diseases.
13. MARCUS: Atony of Prostate.
14. HEINE: Tuberculosis and Tuberculin (*Concluded*).
15. DECKER: Pancreatic Cyst.
16. KYAW: New Treatment of Acute and Chronic Gonorrhea. Prostatitis and Urethritis, by Thermopenetration and Hot Water Lavage.
17. SIMMONDS: Thermopenetration in Chronic Gouty Prostate.
18. ADLER: Pathogenesis of Acute Gout Attack.
19. TREBER: Melubrin.
20. LAMERS: Noviform in Gynecology.
21. SEINITZ: Application of Wassermann Reaction in Internal Medicine.
22. SELLIE: Action of Dyes in Combination with Poisons and Drugs.
23. KAHANE: Physical Therapy of Heart Diseases (*To be continued*).
24. ROSENBERG: Experimental Diabetes; Relation to Organs of Internal Secretion.
25. PRINGSHEIM: New Results in Tuberculosis Research.

November 17, 1912.

26. HOFFMANN: Early Diagnosis of Active Pulmonary Tuberculosis with Special Reference to Choice of a Place for Cure.
27. PERETTI: Gynecology and Psychiatry.
28. NOIL: Etiology and Therapy of Mastitis puerperalis.
29. FRILICHENFELD: Post Mortem Decisions Concerning Accident in Diseased Bloodvessels.
30. FORLI: Clinical Significance of Ghilarducci's Reaction.
31. SZILY: Chemotherapy of Lues oculi.
32. HEZBERG: Treatment of Pruritus vulvæ with Pitylen.
33. STEPHAN: Treatment of Flat Foot.
34. FRANKEL and HAUPTMANN: Chloroform for Pertussis.
35. NASSAUER: Powder Treatment of Discharges from Vagina.
36. JACOBSON: Researches in the Theory of Descent.
37. NEWERTH: Practical Hints.
38. KOENIGSFELD: Advances in Serological Diagnosis of Tumors.
39. LAQUEUR: Physical Therapy.

November 24, 1912.

40. HOCHHAUS: Abdominal Typhoid.
41. CASSIRER: Sympathetic Nervous System in Pathology of Vasomotor Trophic Nerves.
42. SCHELLING: Albuminuria, Pulse Frequency, Knee Jerk, Tremor of Eyes, Tongue, and Hands, Melbury's and Eib's Points of Tenderness, Mastodynia, Ovaries: After Examinations of Normal Persons.
43. GAISBOCK: Hematology of Potassium Chloride Poisoning.
44. GALISCHE: Simple Method of Overcoming Obesity.
45. VOS: Erysipelas in Man Treated with Serum.
46. STOKAR: Salvatrin in Practice.
47. GUTOWITZ: Aleudrin, New Hypnotic and Sedative.
48. CAMMERT: Noviform.
49. ZAHN: Phobol (Chlormelacetol).
50. KAHANE: Physical Therapy of Heart Diseases (*To be continued*).
51. SEROG: Diagnosis and Treatment of Multiple Sclerosis.
52. SEIGE: Narcotics.

1. **Diagnosis of Miliary Tuberculosis.**—Matthes concludes this interesting article by saying that the diagnosis of miliary tuberculosis is otherwise uncertain fever conditions is assured when choroidal tubercles are present; further, that the early diagnosis can be detected by Röntgen findings. In a series of cases lumbar puncture was of diagnostic assistance, especially so in conjunction with the characteristic skin lesions. In the near future, when statistics are more complete, the blood findings may be of great value in regard to decreased lymphocytosis and a relative polynucleosis and marked fluctuations of the leucocytes.

5. **Percussion of the Apices in Tuberculosis.**—Jankowski says that there are cases of "paradoxical combination": 1. A tuberculous process usually raises the percussion note, but is also able to lower

the pitch, giving a tympanitic character. 2. The latter quality may appear with other symptoms, and thus confirm the diagnosis, or it may be the only sign to show that an apical tuberculous process is invading the lung. 3. Further, the lower percussion note is one of the earliest symptoms of pulmonary tuberculosis and is sometimes of unquestionable value in early diagnosis.

9. **Physical Therapy of Heart Disease.**—Kahane advises the following hygienic and dietetic measures in diseases of the heart: 1. Rest is the most important therapeutic measure in acute or well advanced chronic heart insufficiencies; absolute rest in bed in acute endomyocarditis and pericarditis of long duration; also avoidance of brisk movements. Rapid sitting up in bed is dangerous, as acute cerebral anemia or cardiac paralysis may result. Soft stools which can be evacuated with patient lying supine can be obtained with rhubarb and salts. In chronic heart insufficiencies with weakness and exhaustion, prolonged rest with admonitions against long or loud talking, comfortable position, for example, raised back rest with movable pillows are suggested. Rest in bed does not demand confinement in a room; in pleasant weather the bed, divan, or armchair can be rolled out into a garden with proper protection against direct rays of the sun and strong wind. 2. In cases where absolute rest is not indicated, a quiet, regulated existence, sufficient sleep at night, rest after meals, avoidance of excesses of any nature, avoidance of coffee houses and restaurants, prohibition of dancing for young girls and women with heart insufficiency are indicated. 3. Care must be taken of the skin and mouth. Tepid baths, 86° F., should be given; in stronger individuals a rub down to 68° F.; in bedridden patients daily rubbing of the skin with cognac and the addition of salt or menthol, or rubbing with water to which has been added an aromatic agent, e. g., eau de cologne. Frequent gargles of the mouth and throat are excellent with one per cent. thymol solution or with water to which has been added cognac and sodium bicarbonate. 4. Fresh, clean, temperate (64° F.) humidified air should surround the patient. Vessels with salt water or pine needle extract in water should be placed in the room. The sleeping apartment should be large, well ventilated, not too cold, not too warm, the coverings not too heavy. 5. Clothing must not be tight or heavy. Women must avoid corsets, tight skirt bands, garters, or shoes; men must avoid constricting belts or suspenders, and use flannel underwear in cold, damp weather, and waterproof shoes. 6. Warn against sexual excesses, especially after meals or the ingestion of alcohol. In married women the dangers of pregnancy, birth, and puerperium should be pointed out. Marriage is interdicted for girls, and conception for women. 7. Work. Hard physical exertion, intensive mental application, or heavy responsibilities are not fit for these patients. 8. Diet and diet cures. General rules for cardiac patients cannot be laid down, since many individual factors, the condition of the gastrointestinal tract must be taken into consideration. In cases where absolute rest in bed is indicated the diet is regulated accordingly. Fluid diet at first, purées later. Copious meals must

never be taken; five meals a day at two to three hour intervals, the last meal light, two or three hours before retiring. For nourishing the heart muscle, proteid and sugars are of the greatest value. Coarse foods, or those difficult to digest or those producing flatulence should be avoided. Drinks are of the utmost importance in point of quantity and quality; they should not exceed 1,500 c. c. in twenty-four hours. The sudden overburdening of the heart contraindicates the imbibition of large quantities. Alcohol has no place in the dietary; it is a drug and not a food and in large doses a specific poison for the heart. In acute insufficiency it serves its good purpose for stimulation. Coffee and tea may be given in weak, small quantities in nonhabitues and in not overirritable patients. Chocolate, on account of its constipating effect, is not recommended. Tobacco is contraindicated. Long, strict, milk diets are not to be given. Cream, on account of its smaller bulk for equal nourishing value, is better. Whey, because of its stimulating effect on the intestines, is given in plethoric, obese individuals, and is equivalent to fruit cures. Yoghurt and finely divided cream cheese are permissible. The extraordinary significance of sugar for heart work is far from being fully recognized. Milk sugar, fifty grammes in two hundred c. c. water, from three to four times daily, is highly recommended, also cane sugar up to two hundred grammes a day; astonishing results are obtained, especially in degenerative diseases of the myocardium. Lactovegetable diet is excellent in cases with hyperthyroidia, but a purely vegetable diet is not nearly as good. Author names an exhaustive list of places where an equable, dry, sunny, clear atmosphere makes the life of the patient comfortable.

18. **Pathogenesis of an Acute Attack of Gout.** Adler believes that the classical attack in the large metatarsal phalangeal joint is due to a neuritis in the nerves of the toe, the internal dorsal cutaneous nerve, a branch of the peroneal, and the internal plantar nerve, a branch of the tibial. The reasons are: 1. Pains in the region of the sciatic nerve are frequent in patients suffering from gout. 2. Frequently, immediately after the ingestion of harmful substances, burning and lancinating pains arise in the toe and shooting pains in the sole of the foot along the course of the internal plantar or in the calf of the leg in the region of the peroneus, which disappear as rapidly, without leaving a trace of a swelling or without inaugurating a typical attack. 3. In contrast to articular rheumatism, there exists, in an acute attack of gout, an extraordinary hyperalgesia of the outer integument which is noticeable on very slight contact pressure, even when the least tension on the underlying parts is avoided. (Magnus-Lévy). 4. The region of the joint is not tender in all of its parts, but only in definitely localized points, as may be proved by the immediate removal of the hyperalgesia by the application of wet compresses. These points seem to coincide with those places where the nerves traverse the joint. A tender point is constant over the lateral aspect of the foot near the head of the first metatarsal where a branch of the internal plantar passes. 5. Stretching of the sciatic or peroneal nerve or the pressure of a hard object on them, as in sitting or leaning on

the edge of a chair increases the pain in the big toe or initiates it. 6. The pains of gout become exacerbated in the night as in sciatica.

41. **Rôle of Sympathetic Nervous System in the Pathology of the Vasomotor Trophic Nerves.**

Casirer says that the symptoms of vasomotor trophic nerve disturbance, which he classifies with the group of organoneuroses (organs of vasomotility and related organs), represent stimuli of the various divisions of the sympathetic nervous system. The last cause depends on an extensive inherited or acquired disturbance of this system.

ZENTRALBLATT FÜR CHIRURGIE

November 5, 1910.

1. A. BARBER: Simple Sutures for Closure of Small Arteries.
2. C. THOMPSON: Local Sutures in Gastrointestinal Surgery.

ZENTRALBLATT FÜR INNERE MEDIZIN

October 28, 1910.

1. L. M. MULLER: Food, Heat, and Vasomotor Function in Pulmonary Tuberculosis Experiments.
2. OSCAR DAVIES: Tubercle Toxin and Food Relations.
3. ALEXANDER OSZKAT: Removal of Albumin and Estimation of Renal Nitrogen in Food and Secreta from the Urine.

BULLETIN DE L'ACADÉMIE DE MÉDECINE.

November 5, 1910.

NELLE DESCLAUX, and GUILLAUME: Direct Blood Transfusion in Hemorrhage Due to Gastric Ulcer.

Direct Blood Transfusion in Hemorrhage from Gastric Ulcer.—Netter, Desclaux, and Guibaut report the case of a South American in whom blood transfusion from his brother in law, a Slav, caused intense pain in the kidney regions, followed by violent palpitation, headache, a sensation of constriction in the temples, and repeated rigors. Four days later, hemolytic phenomena, manifested in a general subcutic huc of the skin and sclere and a red coloration of the urine appeared; these symptoms lasted two days only. The effect of the transfusion on the patient's general condition was excellent. The racial difference between the donor and recipient may have had some relationship to the temporary untoward effects witnessed.

LYON MEDICAL

November 5, 1910.

L. G. GALLAVARDIN: Oscillatory or Palpation Methods in the Determination of the Systolic Blood Pressure.

Oscillatory or Palpation Methods in the Determination of the Systolic Blood Pressure.—Gallavardin states that, while there is no doubt that the oscillatory method is best for the determination of the diastolic blood pressure, the method of palpation of the radial is far superior for the systolic pressure. If the systolic pressure is taken at the first appearance of oscillations in the mercury column when the pressure in the rubber cuff is being gradually lowered, the reading will be too high, as the blood does not yet pass to the centre of the cuff, whence the actual pressure is most accurately transmitted to the manometer, but only enters under the upper margin of the cuff, where the pressure exerted by the latter on the artery is less than at the middle of the cuff. The inaccuracy thus arising in the oscillatory method is proved by the fact that the systolic readings thus obtained average twenty mm. Hg. higher than with the palpation method. The reading obtained by palpation is even itself a little

above the actual pressure observed by direct connection of the manometer with a cut artery. This is due to the loss of pressure occurring in the transmission of the pressure from the cuff through the tissues of the arm to the artery; such a loss occurs even under the middle of the cuff.

PARIS MÉDICAL.

November 9, 1912.

1. SICARD: Treatment of Facial Neuralgia and Hemiparesis.
2. CALVÉ and LAMY: Abbott's Treatment of Scoliosis.
3. JOE and LEVY: Paratyphus Infection of Liliary Passages.
4. LOIR: Preserved Foods and Infants.

November 16, 1912.

5. LIAN and BARRON: Chronic Medianastinitis.
6. LEREBoullet: Opothorapy in Tuberculosis.
7. SCHWARTZ: Treatment of Fractures of Surgical Neck of Humerus.
8. RYLAND: Comparative Value of Methods for Improving Hearing.

2. Abbott's Treatment of Scoliosis.—Calvé and Lamy tell how Calvé paid a personal visit to America, where he had an opportunity to observe Abbott's method of work, which was fully described in the *NEW YORK MEDICAL JOURNAL* for April 27, 1912. The writers have a high opinion of the value of overcorrection in scoliosis and promise further accounts of their success in its application.

4. Infants and Preserved Foods.—Loir cites the opinion of Flamain that, especially for children born in the spring, condensed milk is the best of all artificial foods. Flamain has prescribed condensed milk for twenty years, and maintains that it prevents the green diarrhea that kills from twenty to forty thousand babies a year in France, and is due solely to the use of fresh cow's milk, some of it very carefully prepared. Flamain is well aware of the opposition to his view of many prominent French and other authorities, but he is firm in his belief. Loir continues that no well founded objection to condensed milk has ever been formulated, and avers that whenever scurvy, rickets, etc., have been attributed to condensed milk, it will be found on investigation that other foods have entered into the case. Loir warns against confounding condensed milk with infant foods into the composition of which starch enters.

6. Opothorapy in Tuberculosis.—Lereboullet states that various kinds of opothorapy have proved valuable in this disease, even if not so satisfactory as direct antituberculosis treatment. Thyroid medication he considers dangerous for pulmonary subjects, but liver opothorapy is excellent in hemoptysis, and suprarenal and pituitary opothorapy has been found useful. Bayle, of Cannes, has a high opinion of splenic opothorapy, considering it indeed a specific; Lereboullet doubts this, but thinks well of pancreatic medication in the early stages, but not in the stage of cavities. Testicular and ovarian opothorapy is still under trial. Raw meat is still relied on as a food in consumption, representing muscle opothorapy.

PRESE MÉDICALE

November 2, 1912.

1. M. CARRIEU and J. ANGLADA: How May Diagnostic Value of Agglutination Test with *Micrococcus melitensis* Be Rendered Less Uncertain?
2. ALEXANDER CAWADIAS: Systematic Palpation of Large Intestine.
3. HENRI LABBÉ and GEORGES VITRY: Undialyzable Component of Urine under Normal Conditions.

November 6, 1912.

4. J. A. SICARD and E. DESMARET: Dorsal Spinal Ganglectomy.
5. E. WEILL, C. GARDÈRE, and A. DUFOUT: Hemolytic Tuberculous Anemia.

1. Diagnostic Value of Agglutination Test with *Micrococcus melitensis*.—Carrieu and Anglada state that the agglutination test in Malta fever is far less certain in its results than a blood culture or the reaction of fixation. Its value may, however, be increased by the simultaneous employment of three confirmatory procedures: The performance of the test under high dilution; investigation of the agglutinating power of a given serum with respect to several cultures, and the heating of the serum to 55° or 58° C. for a half hour before carrying out the test.

5. Hemolytic Anemia in Tuberculosis.—Weill, Gardère, and Dufourt report a case of rapidly fatal tuberculosis in a child of six years in which the first prominent symptom noticed, along with digestive disturbances and headache, was anemia. This was followed by glandular enlargements, bronchitis, and finally miliary tuberculosis, death occurring four months after admission to a hospital. The red cell count two weeks before death was 2,150,000. Some time before this, soon after admission, it had been found the patient's serum, when brought in contact with her own red corpuscles, caused hemolysis, beginning at once and complete in half an hour; control sera from other persons did not have this effect. Hemolysins occur very frequently in tuberculosis, but generally only in the advanced stages, with destruction of tissues or caseous areas; in this case, however, they appeared early. The authors, from experimental work, do not believe the tubercle bacilli themselves have any hemolytic power. The hemolysins appear to arise mainly from the red corpuscles themselves.

SEMAINE MÉDICALE

November 13, 1912.

KLIPEL and MATHIEU-PIERRE WEIL: Pupillary Inequality in Cerebral Hemiplegia.

Inequality of Pupils in Cerebral Hemiplegia.—Klippel and Weil estimate that well marked pupillary inequality occurs in two fifths of all cases of cerebral hemiplegia. In comatose hemiplegics the smaller pupil is on the side opposite the brain lesion, i. e., on the same side as the paralysis. Cerebellar lesions may also produce pupillary inequality. This sign appears in all but a very few cases at the onset of coma; in one of the authors' cases it did not appear, however, until forty-eight hours after. It is due to inhibition of the involved hemisphere, causing contraction of the pupil on the opposite side, while the other pupil remains as before. This is analogous to the pupillary contraction occurring in normal sleep, in chloroform narcosis, and under the influence of morphine, nicotine, alcohol, and bromine. As the hemiplegic patient approaches death and the vitality in the uninvolved hemisphere becomes reduced, the pupil previously the larger also contracts and the inequality disappears. In patients not in a state of coma, on the other hand, the inequality is due to irritation of the involved hemisphere, which causes the opposite pupil, i. e., that on the same side as the paralysis, to dilate. This is analogous to the mydriasis induced experimentally by electrical stimulation of the cortex. The authors point out the utility of pupillary inequality in distinguishing between organic and hysterical hemiplegia. The condition of the pupil of the oppo-

The plates should be removed thirty to forty days later under local anesthesia. These procedures gave good results in the author's case.

2. Surgical Treatment of Primary Epithelioma of Clitoris.—Basset lays stress on the necessity of removing not only the lymphatic ganglia of Scarpa's triangle, but also the retrocrural group, on both sides, in operating for epithelioma of the clitoris. He describes the successive steps of an operation fulfilling this desideratum. The retrocrural glands are reached by opening the inguinal canal and tracing the afferent lymphatic channels, with the surrounding cellular and fatty tissues, to the vicinity of the iliac vessels.

3. Aseptic Necrobiosis of Uterine Fibromyomata.—Barbouth states that this form of degeneration in fibroids, while probably often latent, may give rise to an acute, apparently serious illness, characterized by high fever, violent abdominal pain, and abundant metrorrhagia. The presence of this condition of isolated cellular necrosis, instead of massive gangrene, may be suspected where there is no infection to account for the fever, and the leucocyte count and blood culture prove negative. The prognosis, notwithstanding the alarming symptoms, is no less favorable than in cases of ordinary fibroids subjected to hysterectomy. In the author's five cases the postoperative results were uniformly good. Histologically, fibroids with aseptic necrobiosis, which are red, wine colored or yellowish, show a degeneration which is either massive or present in numerous small areas. There are two varieties, dry necrobiosis and necrobiosis with edema. The condition shows three phases in its development: Diminution of muscular fibres, with apparent increase in the connective tissue fibres; incomplete necrobiosis with thromboses, interstitial hemorrhages, and occasionally edema; complete necrobiosis. The pain is due to the hemorrhages.

ROUSSKY VRATCH

September 29, 1912.

1. I. P. PAVLOFF: Chief Laws of Activity of Central Nervous System as Manifested by Study of Conditional Reflexes.
2. V. V. SAVITCH: Local Irritation as Chief Cause of Secretion of Intestinal Juices.
3. M. G. NEMZER: Serum Anaphylaxis.
4. E. F. GOLTZINGER: Relation between Morbidity of Diseases of Chest and Abdomen and General Morbidity.
5. I. V. ZAVADSKY: Diagnosis of Gout; Investigation of Blood for Uric Acid.
6. M. N. ENOPREFF: Serum Treatment of Hemophilia.
7. L. V. ROZOFF: Presence of Colloidal Nitrogen in Urine of Patients with Cancer.
8. M. P. NIKITIN: Clinical Picture of Affections of Optic Thalamus.
9. G. V. SHOR: Cysts of Jaws and Adamantinoma.
10. P. CH. VANACH: Operative Treatment of Paralysis of Facial Nerve.
11. V. N. ELEONSKAJA: Anatomical Changes in Vascular Covering of Eye in Leukemia.
12. A. M. LEVIN: Monothermia in Croupous Pneumonia.
13. M. K. PETROFF: Effect of Serum from Tuberculous Patients on von Pirquet Reaction.
14. P. S. KAYE: Application of Apparatus for Increase of Pressure in Treatment of Emphysema.
15. P. V. TROITSKY and M. K. PETROFF: Microscopic Changes in Rabbit's Heart under Influence of Prolonged Administration of Small Doses of Digitalis.
16. G. PH. LANG: Movements of Chest Wall Caused by Action of Heart.
17. A. I. TCHACHOVSKAJA: So Called Dissecting Aneurysm.
18. U. DZHANELIDZE: Penetrating Wound of Heart. Suture, Recovery.
19. M. I. NEMENOFF: Treatment of Basedow's Disease with X Rays.
20. V. A. DEGTJAREVA: Investigation of Secretory and Motor Functions of Stomach.
21. V. M. ROKITSKY: Two More or Less Rare Cases of Diffuse Peritonitis.
22. A. IA. BUCHSHTAB: Foreign Bodies in Intestines.
23. M. A. SHEREMETSINSKAJA: Intestinal Obstruction Due to Chylous Cyst of Mesentery.

24. M. V. SOKOLOVA: Complete Eversion and Prolapsus of Bladder through Urethra.
25. U. G. MALIS and G. V. SHOR: Enchondroma of Pelvis.
26. I. L. OKINTCHITS: Obstetric Casuistics.
27. M. A. TEREBINSKAJA-POPOVA: Bacteriology of Pelvic Exudates in Diseases of Female Genital Organs.
28. V. P. PREDOROFF: Changes in Fertilized Ovum in Missed Abortion.
29. F. A. TZUR-MULEN: Habitual Miscarriage and Habitual Premature Births.
30. V. P. RAVSKAJA: Casuistics of Febrile Course of Tertiary Syphilis.
31. M. P. GUNDOROFF: Iodine Parotiditis and Syphilitic Parotiditis.
32. I. A. SHABAD: Abnormal Scarlatinal Rash.
33. B. V. VLADYKIN: Poisoning with Vinegar, According to Records of Municipal Petropavlovsky Hospital from 1904 to 1910.
34. A. A. RUSAKOVA-LIVOVITCH: Saksk Mud Baths for Treatment of Diseases of Women.

2. Secretion of Intestinal Juice.—Savitch found that the secretion of the digestive juices of the intestine depends principally on local irritation rather than distant reflexes.

3. The Danger of Anaphylaxis.—Nemzer concludes from a study of hospital records that the danger from repeated injections of antitoxic serum under ordinary conditions is far less to the patient than that from the disease when left untreated. Inasmuch as the danger from anaphylaxis is in proportion to the dose of the serum, it is desirable to employ for the second injection a serum of high potency. The laboratories should not market serums that are less than two months old, as the sensitizing and toxic substance are diminished approximately one half during that period. It is also advisable to follow the method of the Pasteur Institute of subjecting the serum before it is placed on the market to a temperature of 56° C. for one hour, four days in succession, thus removing the toxic substances without diminishing the antitoxic strength.

18. Suture of the Heart.—Dzhanelidze reports a case of a stab wound of the heart, one cm. in length, successfully closed by stitches. The operation was performed two hours after the injury.

19. X Ray in Exophthalmic Goitre.—Nemenoff treated successfully with the Röntgen rays five patients with Basedow's disease. All the manifestations of the disease, with the exception of the exophthalmos and the goitre, disappeared promptly under treatment.

21. Peritonitis Following Reoperation.—Rokitsky reports one case of peritonitis following a ruptured splenic abscess, after an attack of typhoid fever, and another, following a perforated duodenal ulcer. In both cases an operation was performed soon after the perforation, and the patients recovered. He offers the suggestion that indefinite fluctuations of temperature during convalescence in typhoid fever, accompanied by sweats and pain in the left shoulder, point to abscess of the spleen. Further, if acute peritonitis develops after the fourth or fifth week of typhoid fever, there is a possibility of a ruptured splenic abscess.

29. Habitual Miscarriage.—Tzur-Mulen recommends the administration of iodide of potassium in all cases of habitual miscarriage.

BRITISH MEDICAL JOURNAL.

November 30, 1912.

1. Report of Committee on Treatment of Simple Fractures.
 2. H. C. BASTIAN: Further Experiments Concerning Origin of Life.
- 1. Simple Fractures.**—The committee of the British Medical Association offers the following conclusions: 1. In children nonoperative treatment

of fractures of the long bones except of both bones of the forearm yields as good results as does operative treatment. 2. In comparison with nonoperative results in children the results of similar treatment in those past childhood are not satisfactory. 3. As age advances there is a progressive depreciation of the functional result of nonoperative treatment. 4. This effect of age is less marked in cases treated by immediate operation. 5. Only the method which definitely promises a good anatomical result should be accepted as the method of choice. 6. Functional results may be good even with an indifferent anatomical result. 7. Operative treatment should not be regarded as a method to be used after the failure of the nonoperative, as the results of secondary operations are very unfavorable compared with those of immediate operations. In order to secure the best results, operation should be undertaken as soon after the accident as practicable. 8. Operative treatment of fractures requires special skill and experience. It is not a method to be undertaken by any except those who have constant practice and experience in surgical procedures. 9. A considerable proportion of the failures of this method of treatment are due to infection of the wound, which may occur even with the best technique. 10. The mortality is so small that it cannot be urged as a sufficient reason against operative treatment of simple fractures of the long bones.

2. **Origin of Life.**—See editorial article, page 1287.

LANCET.

November 30, 1912.

1. T. C. ALLBUTT: Relations of Pleurisy to Tubercle.
2. C. MERCIER: Drunkenness and Physiological Effect of Alcohol.
3. T. WILSON: Cysts of Appendix, Pseudomyxoma of Peritoneum.
4. T. W. FIDY: Pseudomyxoma of Peritoneum with Cystic Disease of Appendix.
5. P. N. PANTON and H. L. TIDY: Colon Bacillus in Blood.
6. K. JONES: Obstructive Jaundice Relieved by Operation.
7. A. G. L. READE and L. G. CALEY: Value of X Rays in Diagnosis of Tuberculosis in Children.
8. J. E. ANDERSON and W. H. FROST: Transmission of Polymyxitis by Stable Fly.

2. **Drunkenness.**—Mercier discourses at considerable length upon the extremely slight occurrence of drunkenness in England, showing that if we take the convictions for alcoholic intoxication in England for the year, there are but 80,000 for the entire thirty-two millions of population. But, if we consider that many of these convictions are of the same person one, or even many times, the proportion falls. On this basis a very liberal estimate of the prevalence of drunkenness is one in 8,000 of the population. Further, Mercier concedes the deleterious effects of drunkenness, both on the individual and on the race in general, and adduces evidence to controvert, at every point, the contention that the English are a decadent race. In fact he shows that they are a very rapidly advancing race, both physically and mentally. He subjects the overenthusiastic teetotaler to the most telling ridicule and shows the utter falsity of his claims regarding the enormous increase of drunkenness. He shows, in fact, that drunkenness has declined phenomenally rapidly in the past few generations. Part of this decline he attributes to the necessity for a clear head and prompt reflex response which has been engendered by the recent developments of mechanical means of transportation and manufacture. As to the question of why

the drunkard takes alcohol, Mercier believes that few or none take it on account of the taste, but that it is commonly used for the stimulant effect which it has and the euphoria which it causes. It is the necessity for the increase of the dose in order to derive these beneficial effects that leads to the development of the alcoholic habit. Mercier is of the opinion that the use of small amounts of alcohol by persons past middle life is altogether beneficial if taken at the end of the day when the natural powers are beginning to lag. He does not take the stand that the use of alcohol should be encouraged, but he does most emphatically contend that the present scare about the decadence of the race and the increase of intemperance is unfounded and unwarranted.

3. 4. **Pseudomyxomata.**—Wilson reports two cases in which the appendix was found to be cystic, being involved by a pseudomyxomatous growth precisely similar to that found in cases of cysts of the ovary, known as pseudomyxoma of the peritoneum. In both cases the condition was primary in the appendix and the ovary was not involved. He notes that as yet there has been no report of the occurrence of metastases as is the case when the condition involves the ovary. He believes that this condition arising in the appendix is so rare on account of the fact that the necessary antecedent conditions are seldom present. The cavity of the appendix must be cut off from the lumen of the cecum and the distention of this cavity with mucus must progress without the occurrence of pyogenic infection.—Eden adds to the two cases detailed by Wilson one other in which the appendix was apparently the seat of a primary cystic involvement, although there was also associated with it a similar lesion of the ovary. Microscopical examination of the wall of the appendicular cyst showed the lining cells to be large columnar and most of them were either overdistended with mucoid material or had actually broken and liberated their contents.

5. **Colon Bacillus in the Blood.**—Panton and Tidy report the finding of *Bacillus coli* in cultures of the blood from three patients ill with acute infections. In each case the cultures which they obtained were pure. One patient subsequently died and was found to have had an abscess of his appendix with much metastatic infection. The second had a fatal cystitis secondary to enlargement of the prostate. The third had late puerperal infection. In two of the three cases the successful cultures were obtained with blood drawn at the beginning of a true rigor. Previous cultures in each of these patients had proved negative. The fact that the successful cultures bore this close relation to the onset of a rigor leads the authors to suggest that there may be a direct relationship between the entrance of considerable numbers of organisms into the blood stream and the onset of a chill.

7. **Tuberculosis in Children.**—Reade and Caley examined a series of children whose main symptoms were wasting, loss of appetite, headache, and general weariness. Many complained of cough which was worse at night. In some there were very slight rises of temperature after exertion. All reacted to the von Pirquet skin test. In most the physical examination of the lungs was normal. The

x ray, however, showed definite shadows about the root of the lungs in every case. The authors have found that children of corresponding ages who are demonstrably free from any tuberculous infection do not show the presence of these shadows. Their presence, therefore, becomes of very great importance in just this class of doubtful cases, and the authors believe that these shadows indicate the presence of tuberculosis.

8. **Transmission of Poliomyelitis.**—See the JOURNAL for October 5th, p. 701.

BOSTON MEDICAL AND SURGICAL JOURNAL.

December 5, 1912.

1. JOHN M. CONNOLLY: Heredity; Law of Gregor Johann Mendel.
2. GEORGE H. WRIGHT: Teeth and Relation to Body.
3. GERARDO M. RALBONI: Treatment of Pulmonary Tuberculosis by Artificial Pneumothorax, According to Forlanini.
4. J. EARLE ASH: Study of Blood in Case of Severe Hemorrhage.
5. WILLIAM H. SMITH and ROGER KINNICUTT: Fatal Endocarditis Due to Capsulated Gram Staining Diplococcus, Occurring in Chains.
6. E. LAWRENCE OLIVER: From Skin Department of Massachusetts General Hospital. Treatment by Salvarsan during Past Year.

4. **The Blood after Severe Hemorrhage.**—Ash had the opportunity to study the blood of a young woman after she had suffered from a severe hemorrhage. About twenty-four hours after its apparent onset the leucocytes numbered 40,000. The abdomen was opened and found to contain a ruptured gestation sac in the right tube. The abdomen was closed without drainage, and the patient received 1.5 litre of normal salt solution by bowel immediately afterward, and about a litre in the same way on each of the following two days. Beginning eighteen hours after the operation a series of examinations was made, the results of which are shown in a table. Ash calls particular attention to the following points: 1. The high leucocytosis, which diminished consistently and touched normal on the fifth day after the onset of the hemorrhage, the fourth day after the operation; 2, the actual increase in polymorphonuclear neutrophils; 3, the absence of eosinophiles; 4, the low percentage of transitional forms in the early counts; 5, the extremely low red count with absence of nucleated red cells; 6, the low percentage of hemoglobin, which persisted for several weeks.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

December, 1912.

1. JAMES B. HERRICK: Clinical Features of Sudden Obstruction of Coronary Arteries.
2. WALTER F. DUTTON: Laws Relative to Sanitary Control of Public Eating and Drinking Places.
3. GUY L. KIEFER: Control of Contagious Diseases in Municipality.
4. J. W. KERR: Procedure in Quarantine Practice: Desirability of Reconsideration of Present Methods, Especially in Relation to "Minor" Infectious Diseases.
5. ELSWORTH SMITH: Pleural Vomica.
6. WILLIAM M. HARSHA: Prognathism, with Operative Treatment.
7. BURCHARD H. ROARK: Blepharorrhagic Keratosis.
8. L. R. DE BUYS: Exophthalmos in Scurvy.
9. JOHN A. FORDYCE: Occupational Skin Diseases.
10. MARK D. STEVENSON: Occupational Eye Diseases and Accidents.
11. HENRY D. FURNESS: Some Types of Uteral Obstruction in Women.
12. J. H. SNOKE and E. J. STRICK: Suspected Pulmonary Blastomycosis.
13. CARY ECCLESTON: Relative Value of "Natural" and Synthetic Salicylates.
14. JOSEPH R. EASTMAN: Continuous Dilatation of Extensive Urethral Stricture.
15. MERTON FIELD: Fat Embolism from Chronic Osteomyelitis.
16. FRANK ALLPORT: New Mastoid Chisels.

1. **Clinical Features of Sudden Obstruction of the Coronary Arteries.**—Herrick observes that obstruction of a coronary artery or any of its large branches has long been regarded as a serious accident. The opinions and writings of Parry, Hun-

ter, Cohnheim, Hyrtl, Heule, and others contributed toward the prevalence of the view that this condition was almost always suddenly fatal. Herrick, however, states that there are reasons for believing that even large branches of the coronary arteries may be occluded without resulting in immediate death; in fact the patient may live even though the main trunk is obstructed. A study of the anatomy of the normal as well as the diseased heart, by animal experiment and clinically, affords proof of this fact. Careful dissections, injection of one artery from another, skiagraphs of injected arteries, and direct inspection of hearts rendered translucent by special methods, prove that the coronaries are not strictly end arteries with merely capillary anastomoses, as Cohnheim and others taught, but that there is an anatomical anastomosis that must be taken seriously. That sudden death, even late death, is not a necessary consequence of obstruction of even such a large vessel as the descending branch of the coronary artery, has been proved experimentally by Michaelis, Fenoglio and Drouguell, Porter, Hirsch, Bickel, Kölster, and others. Clinical histories of cases, in which there has been careful autopsy control, also show this same fact, and it must be concluded that while sudden death often does occur, yet at times it is postponed for several hours or days, and in some cases complete functional recovery takes place. The clinical manifestations of coronary obstruction will vary as to the size, location, and number of vessels occluded, the symptoms and end results being influenced also by blood pressure, the condition of the myocardium not immediately affected, and by the ability of the remaining vessels properly to carry on their work. All attempts to classify these clinical manifestations must be imperfect and artificial.

2. **Laws Relative to the Sanitary Control of Public Eating and Drinking Places.**—See this JOURNAL for June 8th, page 1230.

3. **The Control of Contagious Diseases in a Municipality.**—See this JOURNAL for June 8th, page 1230.

4. **Procedure in Quarantine Practice: Desirability of the Reconsideration of Present Methods, Especially in Relation to the "Minor" Infectious Diseases.**—See this JOURNAL for June 8th, page 1230.

5. **Pleural Vomica, with an Analysis of Sixteen Cases.**—See this JOURNAL for June 8th, page 1227.

7. **Blenorrhagic Keratosis.**—Roark reports an unusual keratosis attending gonorrhea which he considers a typical case of blenorrhagic keratosis, basing his diagnosis upon a report of this disease by Simpson, and which case he believes to be the second to be reported in America, and the twenty-second recorded in medical literature. The successful results of treatment by gonorrheal mixed vaccine (Cutter) at first, and later by autogenous vaccine from cultures of the foot lesions (*Staphylococcus aureus* and *Staphylococcus albus*), seemed to verify the diagnosis as internal, and local treatment was symptomatic and unimportant.

8. **Exophthalmos in Scurvy.**—See this JOURNAL for June 15th, page 1294.

9. **Occupational Skin Diseases.**—Fordyce con-

cludes his observations and study of this subject with the statement that while many of the industrial dermatoses entail slight inconvenience, some may become so severe as to prevent a man from following his usual occupation. In some cases the irritant action is not confined to the exposed parts, but may spread over the entire body. Where such idiosyncrasy exists care should be exercised that these forms of dermatitides do not become permanent, and preventive measures such as those advised by the writer be employed.

11. Some Types of Ureteral Obstruction in Women.—Furniss considers a type of ureteral obstruction due to lesions in the ureter itself, omitting any mention of tuberculous conditions for the sake of brevity. His attention was called to this matter by the discovery of a number of cases, most of which had been unrecognized and treated for other conditions, he himself overlooking a number which presented the same symptoms as those in the cases now reported. The writer assumes that infection is the chief curative agent in the production of ureteral stricture, the most frequent being acute hematogenous infections of the kidneys from traumatic infections, furuncles, in the course of infectious diseases (influenza, tonsillitis, typhoid), intestinal disturbances and operations in the intestinal canal, etc. They often persist as a pyelitis, ureteritis, or a secondary cystitis. An infiltration of the ureter with consequent contraction and the formation of a stricture follows the long continued inflammation, and represents obstructions from infections of the descending type. The colon bacillus has been given first place among the infecting organisms; in this type the infection also is descending, coming down from the kidney. When the gonococcus is a causative factor, the path is generally ascending. The seats of stricture are generally found at the points of anatomical narrowing, the most frequent being at the vesical end and just below the pelvis; stricture at the point where the ureter crosses the pelvic brim is rare. The writer concludes that ureteral stricture is more frequent than generally supposed, and is often diagnosed as other trouble, especially when on the right side. Its progress is slow, but certain, and leads to serious renal trouble. It usually arises from some inflammatory focus, and the infection may be either ascending or descending. It is easiest diagnosed, even in the early stages, by pyelography.

13. The Relative Value of the "Natural" and the Synthetic Salicylates; a Study of the Literature.—Furniss concludes, from an extended study of this subject, that the evidence in favor of the "natural" salicylates is extremely slight and the evidence against the artificial salicylates is even less. The artificial salicylates after general use for over forty years have proved as effective as the "natural" and no more liable to produce untoward effects under similar conditions than the more expensive "natural" preparations.

MEDICAL RECORD

1. LEONARD R. BALLENGER and OMAR E. ELDER. After Treatment of Syphilis.
2. W. B. KOSKIELL. Le Charlatanisme de L'Exercice de la Médecine. Delavan.
3. H. BRONSON DELAVAN. Pathology of Right Recurrent Laryngeal Nerve from Accidental Trauma.
4. ALFRED WASSERMANN. Acute Epidemic Parotitis, with Autopsy and Histological Findings. Type: Anterior Poliomyelitis.
5. WILLIAM P. CUNNINGHAM. Psoriasis, Neurosis.

3. Appendicitis in Infancy and Childhood.—Cumston attributes the extremely poor prognosis of appendicitis in infants and young children to the fact that either the true nature of the case is discovered too late or not at all. The treatment administered under a mistaken diagnosis causes the disease to progress rapidly. In the gangrenous type there is a very rapid extension of the inflammation to the serosa. The writer emphasizes the point that in all cases of gastrointestinal disease in infants and young children, as well as in other obscure abdominal conditions, the ileocecal region should be carefully examined. An early diagnosis and an early operation may save life in these cases.

4. The After Treatment of Syphilis.—Ballenger and Elder assert that an absence of clinical symptoms is not evidence that the syphilitic is cured. It is still necessary that one use all available methods to determine the presence of latent infection and administer further antisyphilitic remedies before recurrences develop. It is now believed that very few syphilitics are absolutely cured, for the reason that in a very large number develop late lesions or functional diseases that respond to antisyphilitic measures and in many parasymphilitic affections also develop. While remaining free from evidences of disease latent foci of spirochetes may be present, which develop when subjected to trauma or lowered resistance caused by intercurrent disease or other conditions. The scarcity of reinfections also supports the view that in the past many patients have remained uncured. The writers admit the potency of salvarsan and neosalvarsan, but advise the simultaneous administration of mercury; they conclude that no patient should marry, or if married, bear children until the Wassermann and luetin tests are found negative six months and a year after a presumably adequate course of treatment.

6. Paralysis of the Right Laryngeal Nerve from Accidental Trauma.—Delavan considers the prognosis in these cases, as to recovery, absolutely bad. However, there is no reason why the patient should not follow any of the ordinary avocations with success, provided he avoid all sources of irritation to the larynx, and in case laryngitis of the simplest type occurs, to use proper measures for its relief promptly, since a laryngitis, however caused, might reduce the lumen of the glottis and produce dyspnea. The value of systematic vocal exercise for all is suggested, physiologically, by the over development of the healthy side of the larynx in its effort to perform its own function and to supplement that of the paralyzed side.

8. Psoriasis, a Neurosis.—Cunningham contends that cases of psoriasis show little disposition to improve until the condition of the nervous system is elevated, and the chief symptom during convalescence is "the heightened hope and brightened view." Financial limitation bars such treatment to many cases, but the search for the cause in some nervous derangement may suggest, sooner or later,

an available method of treatment. Without hope of permanent results along the old lines of endeavor, experiment on any suggested new line is justified.

ANNALS OF OPHTHALMOLOGY.

October, 1912.

1. STEPHEN MAYOU: Serum and Vaccine Therapy in Connection with Diseases of Eye.
2. G. GRIFFIN LEWIS: Foreign Body in Eye.
3. CARROLL B. WELTON: Quinine Amblyopia.
4. WILLIAM EVANS BRUNER: Relation of Teeth to Eyes.
5. PAUL J. PONTIUS: Suprarenal Extract in Treatment of Acute Corneal Staphylococci.

3. **Quinine Amblyopia.**—Welton reports a curious case in which a moderate impairment of vision came on suddenly after the ingestion of a considerable quantity of quinine, and an unusual restoration of central vision took place within a week, although the visual fields for both form and colors remained permanently contracted, the retinal vessels remained small, and the optic discs were extremely pale, presenting the picture of atrophy.

4. **The Teeth and the Eyes.**—Bruner reports a case in which pain in the eyes, headaches, dizziness, and blurring persisted in spite of attention to the eyes until a dentist attended to some trouble with a woman's teeth. Later a left upper bicuspid was filled; shortly after both tooth and her eye began to trouble her. The filling was removed, and in a week the eye was all right. A few years later more dental trouble caused a recurrence of the ocular symptoms. The author abstracts briefly the little literature on the subject.

ANNALS OF SURGERY

October, 1912.

1. T. RUSVING: Tuberculosis of Kidney.
2. W. C. CRAMP: Gas Bacillus Infection with Special Reference to Treatment.
3. F. COBB: Mediastinal and Pericardial Infections in Relation to Emergency Abdominal Surgery.
4. E. M. WILLIAMS: Transduodenal Cholecystotomy for Stone in Ampulla of Vater.
5. C. N. DOWD: Acute Phlegmonous Inflammation of Large Intestine.
6. C. H. FRAZIER: Recognition and Treatment of Lesions of Right Iliac Fossa Other than Appendicitis.
7. G. C. ROSS and L. F. STEWART: Sprain Fracture as Essential to Occurrence of Dislocation.
8. G. C. DAVIS: Treatment of Intracapsular Fracture of Hip.
9. A. P. C. ASHURST: Treatment of Dislocation of Head of Radius Complicated by Fracture of Ulna.
10. J. C. A. GERSTER: Freezing Fragments Preliminary to Operative Reduction of Fracture of Femur.

2. **A Consideration of Gas Bacillus Infection, with Special Reference to Treatment.**—Cramp, reporting twenty-five cases of gas bacillus infection, eight of which were treated in one definite manner with no mortality and reviewing briefly the 187 cases published to date, points out the following facts: 1. The incubation is very short; 2, the disease can be classified into superficial and deep, the former being easily combated, the latter requiring prompt and energetic action; 3, more conservative methods should be employed in the treatment of gas bacillus infection; 4, oxygen in some form should be used, preferably in the form of hydrogen peroxide; 5, extreme pain coming on during the first twenty-four hours following a severe injury, and this accompanied by a sudden rise in temperature, may be the first symptom of gas bacillus infection; 6, early recognition is the keynote in combating this condition; 7, smears should be made from the original wound and not from some point distant to it; 8, pus is seldom present, but any wound resulting from traumatism with a gangrenous appearance, coupled

with a sudden rise in temperature and pain, even without the presence of gas in the wound or emphysema in the tissues, should excite suspicion and a smear should be taken immediately. The management of the eight cases treated without mortality was as follows: On the first sign of infection a smear was taken, the wound, if sutured, freely opened, and, if on the extremities, where most of the infections occur, the limb was placed in a bath or continuously irrigated. If the condition was extensive, free incisions were made and the whole field, without bandaging, exposed to the air, the limb being suspended in a tent. As the organism is of the anaerobic variety some form of oxygen was employed, oxygen gas, hydrogen peroxide, or water. Peroxide should be diluted and never injected, for if confined it is liable to produce instant death from embolus. As regards amputation, which should be resorted to rarely, spinal anesthesia should be employed.

5. **Acute Phlegmonous Inflammation of the Large Intestine.**—Dowd reports an instructive case of the rare acute phlegmonous inflammation of the large intestine. The case presented the following symptoms: Severe pain and tenderness in the left side of the abdomen, vomiting, pulse 92, temperature 98° F., but with marked prostration, melena, and rigidity. On operation the descending colon was the site of an intense infiltration, extending from the splenic flexure to the sigmoid. Recovery followed a lateral anastomosis between the middle of the transverse colon and the sigmoid flexure. Microscopical examination of the resected portion shows a thickened peritoneal surface, the muscularis infiltrated with polynuclear cells, the submucosa very edematous and infiltrated, the mucosa replaced by a purulent exudate, and presence of numerous groups of Gram positive cocci in the submucosa. The writer believes the man had had a diverticulitis or an abrasion of the mucosa by fecal masses and that an acute phlegmonous inflammation was added to this, just as similar inflammations have existed in the stomach or in the subcutaneous tissues in various parts of the body. The condition of the bloodvessels showed that it was not a mesenteric thrombosis.

7. **A Study of Sprain Fracture as an Essential to the Occurrence of Dislocation.**—Ross and Stewart reason that since the integrity of joints is maintained by strong ligaments, a luxation must occur by a giving way of one or more of the strong ligaments, and this giving way must be by the occurrence of sprain fracture. After a series of experiments on dogs and on the cadaver, they draw the following conclusions: 1. Practically all dislocations are permitted by the primary occurrence of strain of tendons and ligaments followed by avulsion of tendons and then sprain fracture or gross fracture; 2, some dislocations are permitted to occur by separation of the fibres of the capsule in place of sprain fracture or gross fracture; 3, all dislocations should be skiagraphed and, if evidence of fracture is not found at first, pictures should be taken in many planes; 4, all dislocations should be treated as if fracture had occurred, even in the event of negative x ray evidence; 5, some sprain fractures are too small to be shown by x ray pic-

ture, often there is spontaneous reduction of dislocations, and sprain fracture or gross fracture is the only evidence left that can be detected by x ray; 7, the sites of sprain fractures or gross fractures provide the foci from which the osteoblasts issue, in these cases showing excessive callus or covering of joint surfaces with osseous tissue; moreover, the softer tissues found in joint cavities within a short time after the occurrence of dislocations are often in some stage of transformation into bony tissue; 8, whether the force be suddenly or slowly applied, sprain fractures or fracture precedes the occurrence of practically all dislocations.

ARCHIVES OF PEDIATRICS

October, 1912.

- HOWLAND GORREY FREEMAN: Infant Milk Depots.
JENNIS HUBER: Acute Yellow Atrophy in Child Three Years of Age.
WILLIAM PALMER LIGAN: Various Meningitides; Diagnosis and Treatment.
GILMAN WARD CUTLER: Blindness as Result of Inflammatory Disease.
ROBERT J. PITFIELD: Hemophilia neonatorum in Family of Four Children.
JERRY VAN DER BOGT: Congenital Hydronephrosis, with Absence of Ureter.

2. **Acute Yellow Atrophy.**—Huber reviews the literature on the subject, which he says leads inevitably to the conclusion that acute yellow atrophy, as well as icterus gravis comprises a series of diverse disorders due to syphilis, septicopyemia, puerperal eclampsia, phosphorus poisoning, delayed chloroform poisoning, etc. The definite etiological factor of a large proportion still remains to be determined. In the early stages there are no characteristic symptoms that differ from ordinary catarrhal jaundice. Nervous symptoms should put us on our guard and lead to a careful examination of the urine for the presence of leucin and tyrosin. As the case develops, the jaundice becomes more pronounced, vomiting persists, with possibly hematemesis or the appearance of purpura. Headache, noisy delirium, restlessness, followed by coma and possibly convulsions, quickly lead to a fatal termination. In the early stage the liver is slightly enlarged and tender. Death may occur before the liver diminishes in size. He then gives the history of a child three years of age, who had had jaundice, gradually beginning two weeks before with restlessness, white stools, and apathy. The day before admission it was noticed that the child could not see. A few hours later projectile vomiting began and the child became stuporous, with twitchings of the left hand. The child was brought into the hospital in coma. Physical examination showed the general condition to be very poor, complete coma, respirations irregular; the skin deeply jaundiced; heart with sinus irregularity; liver dullness one inch below the free border of the rib (four fingers below free border four days before); knee jerks exaggerated; lumbar puncture gave twenty-five c. c. of clear fluid under pressure. No albumin was present, but urine showed large amount of albumin and bile present; blood, white corpuscles, 19,000; polynuclears, seventy per cent. Temperature, 97° to 98° F.; pulse, 88 to 104; respiration, 30.

5. **Hemophilia neonatorum.**—Pitfield reports a very interesting family of four, all of whom had hemorrhages following birth. The first child soon

after birth became yellow, vomited blood, and had tarry stools. There was fever and a rapid loss of weight. At the end of eighteen days the skin was a dark coffee color. Recovery occurred. The second child became icteric on the third day, then had subdural hemorrhages, coma, convulsions. Recovery followed, but the child, now five years of age, is mentally deficient. The third child, jaundiced when born, profoundly so when forty-eight hours old, died from subdural hemorrhages when seventy-two hours old. At autopsy, subdural hemorrhages and hemorrhages of the liver were found. In the fourth child, the hemorrhagic condition was anticipated before birth and plans for treatment were made. The weight at birth was eight pounds. The child cried lustily, with no bleeding from the cord or mucous membranes. In five hours jaundice appeared, in twenty-four hours it was marked, and petechial hemorrhages were seen in the skin. He then received the human blood serum and during the second and third days of his life got seventy-two c. c. At the end of three days the child was better, the petechiae began to disappear, and he went on to perfect recovery. The father was a splendid physical specimen; the mother, while small and rather thin, was healthy except for a marked tendency to become infected easily. There was no reason to suspect syphilis, and a Wassermann reaction was not done, but no spirochetes were found at autopsy in the organs of the child.

BULLETIN OF JOHNS HOPKINS HOSPITAL

October, 1912.

- ANDREW WATSON SELLARDS: Determination of Equilibrium in Human Body between Acids and Bases with Especial Reference to Acidosis and Nephropathies.
- JOSEPH MARSHALL FLINT: Embryonic Bands and Membranes about Cecum.
- F. A. EVANS, H. M. N. WYNE, and G. H. WHIPPLE: Reflex Albuminuria. Renal Albuminuria Secondary to Irritation of Urinary Bladder.

1. **Determination of Equilibrium between Acids and Bases in Body.**—Sellards sought to work out a method of detecting acidosis and estimating its extent quantitatively, which would not be limited to any one acid, e. g., diacetic or beta oxybutyric acid, but would apply generally. The exact significance of variations in the ammonia excretion—a method already in use—is sometimes difficult to determine; a study was therefore made of the effect of administering basic compounds with the purpose of supplying an additional method for determining the relations of acids and bases in the system. In normal individuals the ingestion of five grammes of sodium bicarbonate was found ordinarily sufficient to cause excretion of fixed base in the urine, the reaction of which became alkaline; though in exceptional cases ten grammes were necessary. In five diabetics, free from the ordinary signs of acidosis, the tolerance to the bicarbonate was found normal in three instances, but in the other two it was increased, the urine remaining acid after ingestion of thirty grammes. Slight acidosis, artificially induced by a carbohydrate-free diet for a few days, produced a small but definite rise in the tolerance. In a case of obscure toxemia in which the ammonia excretion was increased, there appeared to be a primary disturbance of protein metabolism rather than an acidosis, and in this patient the tolerance was normal. Sellards believes that

bicarbonate ingestion affords a basis for a general method of detecting acidosis. In certain nephritics, however, it would prove unreliable, owing to impaired eliminatory power, since in two of thirteen such patients tested, excretion of an acid urine continued after intravenous injection of sixty and 130 grammes, respectively.

2. Embryonic Bands and Membranes about Cecum.—Flint discusses the condition termed by Jackson membranous pericolicitis, characterized by an adventitious layer of peritoneum found usually on the ascending colon and often extending up to the hepatic flexure and over on to the transverse colon. Various widely divergent explanations have been offered concerning the origin of these peritoneal veils. Flint met with twenty-nine instances where pericolic membranes in some form were found at operation. In dissecting a series of human embryos and two infants at term he found conditions showing clearly that the veils are embryonic and normal structures, and are not due to the organization of an inflammatory deposit or series of mild infections originating from a chronic colitis. They represent merely variations from the usual topography and peritoneal reflections of the large intestine, which are common enough to be classified as normal. In certain instances, either alone, or in combination with other circumstances, they may give rise to definite symptoms, sometimes indicative of obstruction. It is not impossible that they may become somewhat thickened as a result of chronic colitis. Veils continuous with the omentum may, if the transverse colon is redundant, hold the hepatic flexure in acute angulation; such patients may not only suffer from obstruction, but may have pain and distress, more or less exacerbating in character, on the right side, and often show on palpation distinct tenderness over the ascending colon well above the cecum. Veils embracing the appendix usually kink it and probably are responsible for many of the cases of chronic appendicitis in which they occur. The author suspects the presence of such veils in patients who have pain on the right side, usually most marked in the flank and right lower quadrant,—but who have never had an acute attack of appendicitis, and in whom renal and ureteral involvement can be ruled out. As for treatment, the author confines operative interference with the veil solely to cases where he feels it is responsible for pain or discomfort, or it is obstructing the intestinal current. In any case, all that is necessary is to incise the membrane along the lateral border of the colon and allow the intestine to unroll and become free. Flint also discusses Lane's kink and reports the case of an infant presenting at once an omental mesentery of the gallbladder, a Lane band, and undescended cecum.

3. Reflex Albuminuria.—Evans, Wynne, and Whipple found in experimental work on dogs that when a subacute cystitis is caused by placing a foreign body in the lumen or wall of the bladder, albuminuria follows. The greater part of the albumin is derived from the renal secretion. This renal albuminuria occurs in perfectly normal kidneys and may leave no trace of its occurrence in them except hyaline casts and the resulting slight dilatation of the tubules. Catheterization of the ureter without

bladder irritation will cause no albuminuria. Further work is needed to determine whether the reflex albuminuria occurs in human cases, but there is no reason to suppose these phenomena are limited to the urinary tract of the dog.

JOURNAL OF EXPERIMENTAL MEDICINE.

October, 1912.

1. T. LEWIS: Fibrillation of Auricles; Effect upon Circulation.
2. R. INGEBRIGTSEN: Characteristics of Different Culture Media and Influence upon Growth of Tissue Outside of Organism.
3. J. FRASER: Relative Prevalence of Human and Bovine Types of Tubercle Bacilli in Bone and Joint Tuberculosis Occurring in Children.
4. T. P. SEURNT and J. A. LUETSCHER: Acute Vascular Lesions in Mice Following Injections of Pneumococci.
5. J. ERLANGER: Sinus Stimulation as Factor in Resuscitation of Heart.
6. F. P. GAY and T. B. ROBERTSON: Antigenic Properties of Split Products of Casein.
7. F. P. GAY and T. B. ROBERTSON: Antigenic Properties of Protein Condensed with Casein.
8. J. W. JOBLING and C. G. BULL: Ferment Action; Specific Immune Lipase.
9. C. V. CRASTER: Conditions Governing Growth of Displaced Normal Tissue.
10. G. N. STEWART: Testing for Epinephrine (Adrenalin) in Blood; Comparison of Plasma and Serum.
11. F. M. HANES: Lipoid Metabolism in Developing Chick and Relation to Calcification.
12. F. D. BULLOCK and G. L. RONDBENBURG: Cell Proliferation and Parasites in Rats.
13. E. A. PARK: Action of Epinephrine on Coronary Artery.
14. T. C. JANEWAY and E. A. PARK: Epinephrine in Circulation and Relation to Blood Pressure.
15. E. A. PARK: Physiological Action of Epinephrine on Bronchi.
16. C. BASS and F. M. JOHNS: Cultivation of Malarial Plasmodia (*Plasmodium vivax* and *Plasmodium falciparum*) in vitro.

2. The Growth of Tissue Outside of the Organism.—Ingebrigtsen reports the successful growth of heart, spleen, skin, and liver removed from chick embryos fifteen to sixteen days old. He found that there is a great difference between embryonic and adult tissue as far as their growth outside of the organism is concerned. The adult tissues grow only in plasma. Embryonic tissues grow also very well in serum and in serum plus agar.

3. Tubercle Bacilli in Bone and Joint Tuberculosis.—Fraser gives the results of his examination of seventy cases of bone and joint tuberculosis, undertaken to determine the relative prevalence of the human and bovine types. With three exceptions the cases were those of children of twelve years or under; forty-one were four years old or under. Of those examined, the bovine bacillus was present in forty-one instances, the human bacillus in twenty-six cases, and from the remaining three both the human and bovine bacilli were isolated.

9. The Growth of Displaced Normal Tissue.—Craster, in a number of interesting experiments, found that the repeated transplantation of a piece of skin from one animal to another confers no exceptional power of growth upon that skin.

16. The Cultivation of Malarial Plasmodia in vitro.—Bass and Johns report some very important results dealing with the question of malaria. They have succeeded in cultivating *Plasmodium vivax* and *Plasmodium falciparum* in vitro. The technique is given in detail and evidently requires much care before satisfactory results may be expected. Important points appear to be an isotonic fluid, a temperature of 40° C., and as little exposure of the blood to the air as possible. In successful cultures the asexual parasites grow, segment, and form rosettes, which burst and give rise to merozoites, many of which enter new red blood cells in exactly the same manner as they do

in the body of man. The young parasites increase in size slowly during the first twenty-four hours, after which they grow much more rapidly. With the estivoautumnal parasite the authors have cultivated one or more generations from each of twenty-nine different patients; the tertian parasite six times. Only one case of quartan was tested, but the parasites failed to grow. The authors believe that the plasmodia can pass from cell to cell only when a cell is in direct contact with another cell containing a segmenting parasite, and then only when the opening for the exit of merozoites occurs opposite the cell to be infected. The writers also hold that the parasites grow only within red blood cells, and that there is no evidence that they can be grown outside of these cells. This work should assist greatly in the cleaning up of many of the clinical phenomena that are not understood. The article contains many other suggestions and much information.

MILITARY SURGEON.

October, 1912.

1. C. DUGAN: Medical Department of United States in the Civil War. Great Battle of the West, Chickamauga.
2. J. R. HENNEY: Leprosy in the Philippines.
3. G. B. HENNEY: Division Field Laboratory—Possibilities, as Illustrated by Experience, with Manoeuvre Division.
4. FRANK ANDERSON: Poisoning from Bacillus enteritidis.
5. OLIVER HUBB: Pneumonia and Allied Diseases at Newport Training School.
6. D. M. ASHESBORO, EDWARD B. VEDDER, and ERNEST R. GENTRY: Medical Corps, United States Army. Quarterly Report of Board for the Study of Tropical Diseases as They Exist in the Philippine Islands—March 31, 1912.
7. M. ASHESBORO: Diagnosis Tag.
8. PETER J. LEE: Diagnosis of Gargles in Barracks.
9. R. H. GARDNER: Scabies and Malaria.

2. Notes on Leprosy in the Philippines.—

Hurley calls attention to the fact that in the Philippines, at least where the Lao class—among whom chiefly the lepers are found—go barefooted the year round, it has been observed that those with the nerve and mixed types of leprosy present in a large percentage of cases trophic ulcers of the foot. These ulcers constantly throw off a thin, sanious discharge teeming with lepra bacilli. Other natives following in their wake with cuts or abrasions on their feet very easily could thus pick up infection. This is probably only one among many ways the infection is disseminated. In the annual report for the year 1910 of the Bureau of Health for the Philippines it is stated that numerous remedies and treatments had been tried with negative results. Among which were the natin treatment, the margrove decoction treatment, and others; but that the x ray and chaulmoogra oil treatments had given the most encouraging results, having caused the disappearance of all outward manifestations in a number of cases. Hopes were entertained that a vaccine made from lepra bacilli grown in cultures outside the body after the manner of Clegg (in symbiosis with ameba and other organisms) could prove of value in the treatment of leprosy in the future.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL.

October, 1912.

1. ALVIN J. SARGENT: The Pathology of the Eye.
2. D. C. HENNEY: Division Field Laboratory—Possibilities, as Illustrated by Experience, with Manoeuvre Division.
3. A. L. HUBB: Pneumonia and Allied Diseases at Newport Training School.
4. O. L. HUBB: Pneumonia and Allied Diseases at Newport Training School.
5. W. L. HUBB: Pneumonia and Allied Diseases at Newport Training School.
6. G. C. CHANDLER: Importance of Prompt Recognition and Treatment of Leprosy.

7. CHARLES A. BAHN: Moving Picture and Eye.
8. LUDWIG HYER: Treatment of Pellagra.
9. SAMUEL WILSON: Diphtheria.
10. ISAAC W. BREWER: Needs of the American School of Tropical Medicine Recently Established at New Orleans under Tulane University.

4. Nonpoisonous Anesthesia of Mucous Membranes.—Joachim has used cocaine solution or cocaine-adrenalin solutions of varying strengths for surface anesthesia. For anesthetizing the deeper structures these solutions have been used in quantities reaching the maximum dose of cocaine or exceeding it, thereby inviting danger, if not death. For these, as far less poisonous than cocaine, and equally efficient, he uses a twenty per cent. alypin-adrenalin solution, which gives a more efficient and more lasting anesthesia. To a twenty per cent. solution of alypin, one fifth in volume added of a one to 1,000 adrenalin or suprarenal solution produces a thorough anesthesia and anemia of the mucous membrane. For submucous resections of the septum he adds fifteen drops of a one to 1,000 adrenalin solution to four drachms of a two per cent. novocain solution, which, properly injected, produces a painless and bloodless field for operation. The solution properly made must be injected into the right place to be successful. Injection should be made, if possible, into, or around the sensory nerve trunk which supplies the part.

7. The Moving Picture and the Eye.—Bahn attributes the unpleasant symptoms which moving pictures sometimes produce in normal eyes on vision, refraction, and muscle balance to nonclosure of the lids, retinal fatigue, defects of sharpness in picture and of the focusing apparatus, fatigue caused by too strong or too weak luminous impressions (brightly and strongly illuminated images cause most fatigue, also sudden changes from black to white or from dark to light), and the position of the spectator in the audience. The untoward symptoms in order of frequency are: Injection of the lid margins and conjunctiva; lacrymation, retinal fatigue, pain in and about the ciliary region, headache (frontal, less often occipital), muscae volitantes, dizziness. Under the most favorable conditions moving pictures are a severe test of distant vision and endurance on the normal eye.

NEW YORK STATE JOURNAL OF MEDICINE

October, 1912.

1. J. E. WEEKS: Ocular Disturbances Due to Disease of Nose and Accessory Sinuses.
2. W. B. WILSON: Keratitis neuro-paralytica after Removal of Accessory Sinus.
3. W. R. BOUTCHER: Common Results of Eye Strain.
4. W. A. HALL: Occupational Diseases of Eye.
5. C. W. CUTLER: Blindness as Result of Inflammatory Disease of Conjunctiva and Cornea.
6. A. KNAPP: Blindness from Toxemia.
7. S. WILKES: Gross Observations on Brain Tumors.
8. C. E. ATAG: Local Periodic Paralysis.
9. H. J. TAYLOR: Spontaneous Fracture as Initial Symptom of Tabes dorsalis.
10. L. ANCHASTRE: Symptomatology of Cerebral Abscess.
11. W. C. MACCARTHY: Pathological Anatomy of Cancer.
12. W. F. BRANCO: Early Diagnosis of Urinary Tuberculosis.
13. C. A. MCWILLIAMS: Intestinal Obstruction.
14. S. G. LOPEZ: Present Status of Cancer.
15. F. M. CAMPBELL: Role of Education in Prevention of Insanity.
16. E. T. BUSH: Responsibility of Country Practitioner in Relation to Public Health.

1. Ocular Disturbances.—Weeks reports nine cases of ocular disturbances covering a wide range of manifestations and resulting from a variety of abnormal conditions in the nasal cavities and accessory sinuses. The cases show the necessity for the

cooperation of the rhinologist in obscure cases of ocular neuroses and actual disease of the eye.

2. **Keratitis neuromparalytica.**—Weidler shows the frequency of the occurrence of this damaging result of the excision of the Gasserian ganglion, citing some cases of his own and reviewing the literature. He compares the results obtained from alcohol injection of the affected nerve with those from removal of the ganglion, and concludes that the former is much to be preferred. With alcohol injection the patient is assured of relief of pain for a period varying from six months to years. Further, in over 300 reported cases of alcohol injection, there has been only one case in which a serious form of keratitis followed, whereas in seventy cases of removal of the ganglion, neuromparalytic keratitis followed in a considerable number, and in four cases enucleation was necessary for the relief of symptoms directly the result of the operation.

7. **Ocular Observations in Brain Tumor.**—Voorhees calls attention to the fact that the inferior temporal quadrant of the optic disc is the last portion to become swollen in pressure from brain tumor, and is the first to clear after the removal of pressure. This he explains on the ground that frequently the vessels do not occupy a true axial course in the optic nerve, but lie nearer to the nasal and upper side thereby being earlier subjected to pressure. He makes the further suggestion that following an operation, with failure to locate the tumor, the eye which retains edema of the disc lies on the same side as the tumor.

8. **Family Periodic Paralysis.**—Atwood had three patients afflicted with this rare disease, one of which he reports in detail. In the same family with these three there were, or had been, six others who had suffered similarly. The nine cases in the family extended through four generations and were confined to the maternal side. The disease was transmitted through both males and females. The affected were, two brothers, their mother, the mother's brother, two of the grandmother's sister's grandchildren, two of the great grandmother's sister's children, and the great grandmother's brother. The ages of onset, number of attacks, intervals between attacks, and severity of the disease were widely different in the different members of the family. In the case reported in detail the predisposing factor was gastrointestinal disorder, with marked *Bacillus aerogenes capsulatus* infection of the intestine. The same condition was present to a lesser degree in the patient's mother and brother.

9. **Spontaneous Fracture.**—Taylor records nine cases of this phenomenon occurring either as the initial symptom or early in the course of tabes dorsalis. The fractures were generally painless. In several of the patients the diagnosis of tabes would not have been thought of had attention not been previously directed to the question. From these nine observations and many others on patients with Charcot joints, Taylor believes that ataxia is not infrequently among the latest symptoms of tabes to appear.

10. **Cerebral Abscess.**—Archambault regards circumscribed suppurative meningoencephalitis as but an early stage in cerebral abscess. The special

point which he would emphasize is the characteristic course of development of hemiplegia, when it is present. In this disease the hemiplegia is at first slight and partial and it progresses slowly, more so than in any other condition. Its early occurrence is a most valuable sign, for it enables one to operate before any destruction of tissue has occurred. He says that the occurrence, at any time of life, of a hemiplegia which starts as a monoplegia, and requires several days for its development, especially if it is associated with fever, persistent headache, hebetude, or distinct blood changes, supplies all of the indications necessary for immediate surgical intervention.

OPHTHALMOLOGY.

October, 1912.

1. L. WEBSTER FOX: Newer Operations for Glaucoma.
2. LOUIS DOR: Unilateral Glaucoma from Congenital Malformation.
3. PAUL BÉTHÉREMIEUX: Technique and Mode of Action of Recent Operations Proposed for Retinal Detachment.
4. M. DANIS and J. GEERIS: Tumor of the Pons Cerebellar Angle.
5. JOSE DE JESUS GONZALES: Leproma of Iris Cured by Radium.
6. D. H. COOVER: Present Operative Treatment of Trachoma, with Description of Author's Method of Grattage with Strips of Sterilized Sand Paper.
7. J. FERDINAND KLINDINST: Recurrent Third Nerve Paralysis.
8. LOUIS STRICKER: Optometry Question.
9. WALTER L. FARNELL: Axis, Objectively, in Retinoscopy.
10. FRANK JACOB: Guarded Prognosis in Injuries to Cornea.
11. J. W. MILLETTE: Intracapsular Cataract Operation from Viewpoint of Assistant.
12. J. M. ROY: Revolver Bullet in Chiasma. Consecutive Binocular Blindness.
13. DAVID A. STRICKLER: Homeopathy in Ophthalmology.
14. H. TERLINCK: Recurring Neuritis.
15. FRANK C. TODD: Malingering (Pretended Blindness).
16. FREDERICK TOOKE: Clinical and Pathological Aspects of Glaucoma.
17. E. J. GROW: Vision in Relation to Marksmanship.
18. Course in Ophthalmology at University of Colorado.

17. **Vision in Relation to Marksmanship.**—Grow deals exclusively with the subject of pointers and trainers of the heavy guns in the navy and their visual needs. The requirements at present are a visual acuity of 20/15 in the sighting eye and 20/20 in the other before a man can qualify for the rating of either gun pointer or trainer; this without glasses, which are pronounced to be impracticable. Grow examined the eyes of 270 heavy gun pointers and trainers, and gives his findings at considerable length. Much astigmatism interferes materially with the accuracy of the aim; an ocular parallax is created between the object aimed at and the cross lines in the telescope, which can be detected if the astigmatism is much over 0.75 dioptre. A less degree of astigmatism is negligible. Exceptional vision is no guarantee of good shooting, and ordinary or slightly reduced vision (18/20), if associated with less than 0.75 dioptre of astigmatism, is no hindrance when United States Navy telescopic sights are used. He recommends the following requirements: 1. That all candidates for the original rating of gun pointer or trainer should have a minimum vision of 20/15 in the sighting eye and 20/20 in the other. 2. Hypermetropia of over three dioptres is cause for rejection. 3. All men so rated should be reexamined each year. 4. Gun pointers and trainers who have served as such during one enlistment, may subsequently be accepted with a minimum vision of 18/20 in the sighting eye and 15/20 in the other, provided that the reduced vision is not due to progressive organic disease, myopia, or astigmatism of over 0.75 dioptre. 5. In all cases the vision should be tested by the so called navy "Unlearnable Vision Test Card."

Proceedings of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

*Twenty-seventh Annual Meeting, Held at Atlantic City,
N. J., May 14 and 15, 1912.*

The President, Dr. J. GEORGE ADAMI, of Montreal, in the
Chair.

(Continued from page 1253.)

Complete Permanent Heart Block in Auricular Fibrillation Following the Use of Digitalis.—Dr.

ALBERT E. TAUSSIG, of St. Louis, said that in auricular fibrillation, digitalis slowed the pulse by producing partial heart block, thus interfering with the passage to the ventricle of some of the very numerous and irregular auricular impulses. In some cases, if the digitalis was pushed, complete heart block might result, with the establishment of the very slow, regular rhythm characteristic of this affection. Ordinarily this condition of complete heart block was temporary and ceased a few days after the administration of digitalis was discontinued. It might happen, however, if there was an organic lesion interfering with the conductivity of the bundle of His, that the administration of digitalis would be followed by the establishment of a complete and permanent heart block, possibly because the drug gave the *coup de grâce* to the already diseased bundle.

Dr. H. A. HARE, of Philadelphia, thought if digitalis were given where there was partial heart block there was very great danger of producing complete heart block. On the contrary, where there was a complete heart block, digitalis was going to be a useful remedy. When there was complete heart block the digitalis resulted in speeding up the ventricle.

Dr. JAMES TYSON, of Philadelphia, had had very satisfactory results with atropine in irregular heart action. To him it had been a most invaluable remedy and should be substituted for digitalis many times when the latter drug was given. Our further knowledge would lead us to use in irregular heart less digitalis.

Dr. L. F. BARKER, of Baltimore, said perhaps we could use digitalis and atropine together very well. Digitalis combined with the heart muscle direct and also combined with the vagus and was therefore myotropic and vagotropic in its effect. When we needed digitalis we could give atropine with it and throw out vagotropic and myotropic influences.

Dr. GEORGE DOCK, of St. Louis, agreed with Doctor Taussig's reserve. In regard to the use of digitalis in such cases it seemed important to remember that, if we were making proper examinations, including the use of the polygraph, the use of digitalis was not only safe in these cases, but certain to bring a secure addition to our knowledge. If he was not mistaken about Doctor Mackenzie's work, it was still in the experimental stage in regard to the use of digitalis in such cases. Mackenzie was not entirely satisfied with the use of digitalis in auricular fibrillation, but his work was very carefully and systematically done in order to get light on it. In getting heart block in such cases one must not too

quickly draw the conclusion that the patient had a complete lesion of the His bundle, and ineradicable damage had been done by the digitalis. He did not believe with those who thought that one could have symptoms of complete or severe disease of the His bundle without any disease at all. He reported a few years ago a case where there were severe symptoms without complete degeneration, then the Stokes-Adams symptoms, and remained with permanent heart block for two years. He believed there was a great deal in large doses of strychnine. The man with Stokes-Adams disease was able to do his work for two years with his pulse always below thirty, and died suddenly one night while washing his hands. During that time he was always perfectly well, provided he was taking his one twentieth of a grain of strychnine. If he went without it his pulse would intermit for one fourth of a minute.

Doctor TAUSSIG said Doctor Hare's warning in regard to the use of digitalis in partial heart block was entirely justified, but hardly appealed in those cases with auricular fibrillation. In auricular fibrillation there was no way of telling whether a lesion of the bundle of His existed, unless from the great slowing of the ventricle. In these cases, for instance, there was no possible way of telling whether the bundle of His was impaired in its conductivity, except by digitalis administration. One could get results in ordinary heart block. In auricular fibrillation one could not expect such a result because there was no way in which the digitalis could possibly slow the fibrillating auricle.

Clinical and Pathological Observations on Subacute Bacterial Endocarditis.—Dr. E. LIB-

MAN, of New York, during the course of a study of eighty-nine cases of subacute bacterial endocarditis (so called chronic malignant endocarditis) had obtained evidence that persons with this disease could spontaneously overcome their infection, and the lesion on the valves might heal in part or entirely. Altogether he had observed eleven times bacteria free healing or healed lesions of subacute bacterial endocarditis. The patients in whom he found bacteria in the blood and which he could follow up, all succumbed. In one case of influenzal endocarditis the bacillus was found five times in the blood. Four later cultures were negative and the patient died within a few months. There was unfortunately no autopsy. It was remarkable then that there should be so many cases in which the bacterial infection was overcome without its being discovered. The explanation that seemed the most likely was that in such cases the bacterial infection was of short duration, and the patient did not feel sick enough to see a physician, and if he did, he was not put to bed. The patients who overcame their infections before we saw them presented at least four clinical pictures: 1. A chronic nephritis developed and they died of uremia. 2. They presented the clinical picture of chronic endocarditis with fever. 3. This group presented a clinical picture that seemed to have been entirely overlooked. A remarkable brown color of the face (to which Doctor Libman drew particular attention) developed, also sternal tenderness, palpable spleen, slight rises in temperature, and the evidences of a valvular

lesion. The subsequent course of such cases was unknown. The patients had a valvular lesion with marked uremia and died from exhaustion alone or combined with decomposition. Whether cases could end in recovery and present only the valvular lesion which they had before they were affected by subacute bacterial endocarditis, could be determined only by further studies, possibly by complement-fixation tests.

Dr. JAMES B. HERRICK, of Chicago, recalled a paper which he had read ten years before in which he spoke of recovery of one case of endocarditis and in which he collected from the literature other instances. Since that time it had been his fortune to see quite a number of cases of this subacute type of ulcerative endocarditis which Doctor Libman had seen so frequently. He had never seen another patient recover. He had seen death postponed for nine or ten months, but he had never yet seen a case end in recovery.

Dr. GEORGE DOCK, of St. Louis, thought the increase in tropical diseases had added a new feature in regard to the practical diagnosis of these cases. Formerly all those cases were considered malarial by somebody in the course of their existence, but, now that there was so much access to the tropics and so much more was known about the tropical affections, those cases of endocarditis were diagnosed, not only as malaria, but as Malta fever and various parasitic diseases of the blood.

Dr. E. LIBMAN, of New York, had made a limited number of studies as to the value of transfusion in these cases, and thus far all he could say was that the transfusion strengthened the patient and gave him a longer time to fight, but he had hitherto seen no direct curative result.

Acute Rheumatic Fever and the Arteries.—Dr. OSKAR KLOTZ, of Pittsburg, said that there appeared to be a fairly definite form of arterial disease which was associated with rheumatic fever in its different stages. The arteries reacted to the irritant in the form of a true inflammation, and this reaction was observed in the adventitia and the outer portion of the media. In the acute stages the inflammatory exudate was of the nonsuppurative variety in which the lymphoid cells were the most prominent, the lesions involving chiefly the smaller arteries, the larger arteries being damaged chiefly by inflammation which traveled along the vasa vasorum. The fixed tissues in the neighborhood of the small arterioles were damaged or even destroyed, but abscesses were not formed. In the aorta and heart the destruction involved chiefly the muscle and elastic elements. In the early stages the intima was affected by a slight superficial fatty change and in the chronic stage it proliferated, giving rise to a nodular endarteritis. The repair following the inflammatory process of the media and adventitia was by fibrous tissue. Thus the aorta in chronic rheumatism was disturbed by a patchy fibrosis, or chronic productive mesoarteritis, and had, therefore, lost much of its elasticity and might become subject to diffuse dilatation.

Disturbances of the Autonomic Nervous System, with Comments upon the So Called Vagotonic and Sympathectonic States.—Dr. L. F.

PARKER and Dr. F. J. SLADEN, of Baltimore, had had eighteen cases in which they had analyzed the symptoms referable to disturbances of the autonomic system. The report was illustrated by a lantern slide demonstration. The term autonomic was used in the Langley's sense to include all efferent conduction paths other than those innervating voluntary (striated) muscle. The autonomic nervous system included, therefore, all the paths going to smooth muscles and secreting glands, and embraced both the sympathetic nervous system and the so called craniosacral autonomic system. The paths between the cerebrospinal axis and the periphery were constructed of at least two neurons, a proximal one with a medullated preganglionic fibre and a distal one with a nonmedullated postganglionic fibre. The connection between the two neurons could be functionally interrupted at the synapse by nicotine. Continuous innervations existed during life in each of the two systems, and, normally, the regulation of the reciprocal antagonists was such that a sort of equilibrium was maintained as a resultant of the tonus in both systems. How this tonus was maintained was not known. It seemed probable that both neural and clinical influences played a part. In eighteen cases analyzed at the Johns Hopkins Hospital the authors had been surprised at the enrichment of the clinical histories which followed the study of patients by the methods of analysis of the autonomic system. Among these eighteen cases there were some who were predominantly vagotonic; others who were predominantly sympathetonic, and in many of the cases signs of overactivity in each of the systems were met with—so called mixed states. Among the clinical signs pointing to excessive tonus in the craniosacral system might be mentioned the following: 1. Mid-brain portion: Contracted pupil, accommodation spasm; wide lid slits, von Graefe's sign. 2. Hind brain portion: Salivation, lachrymation, bradycardia, slowed conductivity of vagal origin in the His bundle, pulsus irregularis respiratorius, vasomotor anginal attacks, hypotension, bronchial asthma, irregular types of breathing, laryngeal crises, inactive gag reflex, hyperacidity, and hypermotility of the stomach, cardiospasm and pylorospasm, spastic constipation or nervous diarrhea. 3. Sacral portion: Spasm of the anal sphincter, dysuria, due to spasms of the detrusor of the bladder, and certain genital phenomena. 4. Generally: Sweating, eosinophilia, pigmentation, increased carbohydrate tolerance, excessive reaction to pilocarpine, absence of adrenal glycosuria. The conception of vagotonic was in accord with earlier therapeutic discoveries, and might help to guide us to a rational therapy in many cases, as illustrated by the well known effects of atropine upon spasms (e. g., in bronchial asthma, in hyperacidity, in ulcer of the stomach, in gastric crises, etc.). The good effects of atropine in vagus inhibition of the heart and in sweating were well known. The effects of epinephrine upon bronchial asthma, biliary colic, and the diarrheas of Basedow's and Addison's diseases were also easily understood in the light of this generalization. Such studies, taken together with those of Head, and of Eppinger and Hess, it was hoped, might prove helpful in leading gradually to

a well defined special pathology of the nerves of the viscera.

Dr. S. SOLIS COHEN, of Philadelphia, said that this admirable exposition confirmed some observations of his own. Doctor Barker had extended these observations and made some others. Doctor Cohen had recently changed the title under which he placed his cases from vasomotor ataxia to vasomotor atonia. He emphasized the fact that these phenomena were largely ataxic. In his first paper he divided them into spastic, parietic, and mixed, and the mixed group was the largest one we saw clinically. Graves's disease was the largest group of pure parietic diseases. Raynaud's disease when pure was an example of the nonparietic. But even in Graves's disease the phenomena were frequently mixed and we should find the sympatheticotonic and the vagotonic type mixed in certain cases of apparently extreme types of the nervous system.

Dr. L. B. WILSON, of Rochester, said that this address of Doctor Barker's had been particularly interesting to him in connection with some work by Gley. They had been repeating the work of Gley, of the University of Paris, consisting of the injection into the vascular system of dogs of extracts of human thyroids during the last three or four months and he need only say that they had been able to corroborate it. Gley had been able not only to produce a fall in blood pressure by injection of thyroid extract, but also to inhibit the vagus. He had succeeded in doing this only by the injection of fluid from exophthalmic goitres.

Studies of the Peripheral Pulse.—Dr. A. W. HEWLETT, Dr. J. G. VAN ZWALUWENBURG, and Dr. J. H. AGNEW said this study of the volume of the pulse was made in the arm when the venous outflow was momentarily obstructed by a suitable pressure cuff. In a normal, young individual during exposure to cold the main portion of the blood entered the arm during the primary systolic pulse wave, while during the remainder of the pulse period little if any blood entered the arm. When the individual was comfortably warm the primary wave was increased in size and most of the blood entered with this wave. When the individual was uncomfortably warm the primary wave remained large, but the inflow was rapid throughout the whole pulse period. This seemed to be due to a relaxation of the finer arterioles. When nitroglycerin was given in medicinal doses the primary wave was maximal whether the individual was exposed to heat or cold. In the latter case there was a marked reflux wave immediately following the primary wave. This was due to a relaxation of the main arteries without a corresponding relaxation of the arterioles and could be explained only by a reflection of the pulse wave from the periphery. The large arteries acted like an elastic bag from which no adequate outlet through the finer arterioles was possible.

Symptomatology and Early Diagnosis of Thrombophlebitis.—Dr. LEWIS A. CONNER, of New York, said that thrombophlebitis occupied a much more conspicuous place in the clinical picture of typhoid than was commonly supposed. Among 1,540 cases of typhoid treated in the New York Hospital it was observed in over five per cent., and there was much reason to believe that this figure

failed to represent its actual frequency. The condition seemed to begin usually in the small veins of the legs and feet, and the classical symptoms of femoral phlebitis might be lacking altogether or appear only late in the course of the affection. Pulmonary embolism and infarction was a frequent complication of such thrombophlebitis and occurred usually at an early stage of the affection—often many days before any signs of phlebitis were apparent. Such emboli were almost always small and seemed to come from the newly forming thrombi in veins which were not yet completely occluded. Large, fatal pulmonary emboli were very rare. Among seventy-eight cases of proved thrombophlebitis pulmonary embolism was observed in twenty-nine (thirty-three per cent.). In two thirds of these latter cases the pulmonary symptoms appeared before the phlebitis was recognized. The symptoms appeared suddenly and might be slight or severe. They included pain, cough, dyspnea, cyanosis, bloody expectoration, etc. The physical signs might be those of a slight, dry pleurisy, of lobar pneumonia, or of extensive plastic pleurisy. Pulmonary symptoms suggestive of embolism occurred in a number of cases of typhoid fever in which no frank symptoms of phlebitis were observed. It was safe to say that most of the pulmonary and pleural complications of the later weeks of typhoid were of an embolic nature and arose from phlebitis either latent or obvious. The posttyphoid "septic" chills were, in most cases at least, associated with the presence of thrombophlebitis. It seemed probable that the condition known as "tender toes" was related in some way to thrombophlebitis in the sole of the foot, as phlebitis and "tender toes" were very frequently associated. It was suggested that tender toes might be due to a neuritis of the plantar veins which ran in close proximity.

Dr. F. P. KINNICUTT, of New York, stated that his attention was called to this condition by Doctor Conner. A study of several cases presenting clinical phenomena similar to those described had convinced him of the probable correctness of the explanation just offered. In the matter of tender toes, the consensus was that it was due to a neuritis, but the suggestion that the neuritis was a secondary process seemed very reasonable. The sequence would be a thrombophlebitis, a periphlebitis and extension of the inflammation to the nerve branches immediately contiguous to the affected vein.

Dr. E. LEBMAN, of New York, for some years back had suspected that the sharp temperature rises and the chills seen in cases of typhoid fever, particularly toward the latter part of their course, might be due to thromboses. In such cases blood cultures were often negative.

Dr. W. S. THAYER, of Baltimore, had long been interested in the relation between the posttyphoid chill and the unaccountable rise of temperature and later appearance of thrombosis. It seemed an important matter, and the evidence Doctor Conner had brought was peculiarly suggestive. One point that he had forgotten was the frequency of pulmonary thrombosis in these cases. He had seen in several instances thrombosis of pulmonary arteries and not anywhere else could it be found.

Dr. B. SACHS, of New York, said that in the

senile and presenile period these conditions were extremely frequent, although very generally overlooked. He was very certain that many of the conditions, not only of moderate paresis, but particularly of pain occurring in older persons were distinctly due to the condition of thrombophlebitis in the lower extremities. Cases of this sort were also similar to the anatomical conditions found in erythromelalgia. Some years ago it was supposed that the neuritis was the primary condition, but now it was established that thrombophlebitis was the primary condition and the neuritis was entirely secondary.

Dr. LEWIS CONNER, of New York, stated that he was glad to have Doctor Sachs bring out the point that thrombophlebitis in conditions other than typhoid fever was a common thing. He was sure, we must look out for it in the future much more than we had in the past. It was found in all serious conditions and in persons otherwise apparently well. In postoperative cases surgeons were seeing these cases all the time and not recognizing them, usually of pulmonary symptoms a few days after operation and then, if they watched carefully, indications of phlebitis in the extremities.

Fatal Cases of Postoperative Embolism.—Dr. LOUIS B. WILSON, of Rochester, Minn., had tabulated the Mayo cases up to September, 1899, and no fatal case of embolism occurred during these ten years. There were over 6,000 major operations done. On September 13, 1899, their first case of septic embolism occurred and they had had forty-seven in about 57,000 cases. They had one fatal case in over 1,200 operations. Why did they have none in the first 6,000 when they were due to have five? There was no material change in the operators, nurses, anesthetists, or anesthetics; ether by the drop method had been used from the beginning of convalescence. The patients were all out of bed as soon as possible. That had been the policy of the Mayo institution since it was founded. There were two possible reasons which suggested themselves: During the first twelve years of the clinic nearly all operative cases were drawn from the private practice of the staff. Very few referred cases were operated in, and consequently these were operated in earlier than were referred cases at present. Second, in going over the regions in which operations were performed, they found that, while the average proportion of mortality of all cases during the last twelve years had been 0.08 per cent., in operations upon the stomach, gall-bladder, and intestines, it had been three times this.

(To be concluded.)

Letters to the Editor.

THE VALUE OF THE FEEBLEMINDED TO THE COMMUNITY.

PHILADELPHIA, December 12, 1912.

To the Editor:

In your editorial article in the issue for November 30th on the Value of the Feeble-minded to the Community, you wisely advocate caution in the asexualization of the unfit. You also convey the impression that this measure is too radical to be encouraged. In short, the editorial

attitude is one of wide humanitarianism—the comfortable position of *laissez faire*.

Now much is becoming actually known on the subject of the unfit, and it is possible to realize the dangers of unchecked propagation of those who can be definitely determined to be wholly unfit to propagate their kind, only by practical familiarity with conditions existing. Having, myself, had the privilege of seeing and knowing certain phases of the problem, being for many years consultant to three large institutions for the feeble-minded, I beg to offer some views on asexualization.

Let it be remembered that if there comes to mind the question of interference with the privilege of sexual gratification, the operative interferences suggested permit of this.

Let it also be borne in mind that, in advocating *laissez faire*, full consideration must be given to the colossal dangers which not only threaten but are realized daily. No one can read the recent *Report of a Committee on Eugenics*, by Bleecker Van Wagenen, Esq., of New York (presented to the International Congress on Hygiene and Demography), and fail to realize precisely where we stand.

Abundant and convincing reasons are on record in favor of mercifully and scientifically checking the propagation of the unfit. Now and then asexualization is opposed. Legislation is too often thwarted. The only forceful reasons urged against this eminently humanitarian and economic procedure, however, seem based on shallow sentimentality; on pleas for individual freedom to do as any one may choose or desire.

All religions worthy the name teach great moral truths, of which the basis is always the significance of self-restraint and other elemental principles of sociological physiology.

The simplest legal definition of a responsible man or woman is one possessing the ability to realize the significance of moral considerations. If the individual is shown by the evidence to be unable to appreciate the difference between primitive principles of right and wrong action, he or she is adjudged a lunatic and is no longer permitted freedom of choice or action. Restraint is applied in proportion to the degree and kind of the mental disability determined. In every community there are many semisane, irresponsible morons, or otherwise unfit individuals, who enjoy the fullest liberty of action; who may or may not have come under suspicion of mental retardation or alienation; yet are wholly defective in the one essential guiding quality of self-restraint in the genital sphere. Sex impulses at short range are despotic. From the licentious acts of such persons the whole community perpetually suffers. Not only is there peril for all from the whole realm of venereal disease, endangering the integrity of health, of legitimacy, of life itself; but the whole social fabric may, and does thereby suffer. The sane, the whole-some minded, the frugal of the community must not only thus run perpetual personal risks, but are compelled to pay for the maintenance of these incompetents—and often also to pay the penalty in their own families. Also a large number of individuals exist showing such evident defects of mind or morals, or both, that their mentality comes under suspicion even by those who are barely able to judge, or wholly unwilling to believe the plain facts. Many of these are sheltered, screened, protected by blind love, or by reason of other selfish considerations, especially by political schemers. Parental safeguards may or may not be extended over these unfortunates.

Obviously, no good whatever can come of permitting freedom of action to such beings. They are a perpetual and frightful menace to all decent citizens, especially to the young and unsuspicious of both sexes. A little alcohol wholly dethrones what remnant of mental poise they may possess. Yet the law says they shall enjoy absolute freedom until they commit some overt act bringing the offender within the category of offenses justifying commitment.

Painful it is to contemplate a state of society which invites the blackest horrors to fall upon innocent members, and is willing to protect itself only after the blow has fallen.

There remain to mention a few degenerate human creatures, so low in the phylogenetic scale, so like unto no being made in God's image, that they are a burden to themselves, a stain upon their ancestry, a blight upon the

and green earth, a perpetual horror and terror to all who see them, numbering the ground. They are lower than the heaviest, but lower than the meanest out, the wretched abandoned out. Annotated by archaic notions of sentimentality, morbid softheartedness, overwrought, vitiated philanthropy, and blind to teratological truths, there are those who insist that these derelicts shall be permitted to come freely in contact with those of the opposite sex, even encouraged to marry and beget children worse than they.

It has been demonstrated beyond dispute that 1. Man, of these unfortunate beings are capable of at least a small measure of improvement, especially by asexualization; 2, whosoever they come in contact with those of the opposite sex they have no power of controlling the sex impulse; 3, the offspring of such are almost invariably as bad as, or worse than themselves.

In the light of these facts can we assume the responsibility of denying these degenerates the *privileges* of asexualization? It has been shown that glimmerings of a better self frequently impel individuals, imbecile sexual perverts and criminal insane, to recognize the *benevolence of this simple procedure and beg it for themselves.*

Finally, a legislator, a governor, an editor, or a misguided humanitarian, who would block the way to shutting the door on the flood of putrefying humanity which now flows unchecked into the clean breast of every community, is taking a grave responsibility upon his shoulders. He must answer for his acts, not only to his soft hearted constituents or readers, but to the beneficent and wise God before Whom he must ultimately appear.

J. MADISON TAYLOR, M.D.

[The opinions of Dr. J. Madison Taylor are obviously entitled to respect. We may point out, however, that our editorial article did not urge sentimental objections to asexualization; nor should we call our recommendation of absolute segregation of the feeble-minded a policy of *laissez faire*. If the practice of asexualization is unconstitutional in any State, an amendment will be required before it can be carried out, even upon those begging for it.

Despite Doctor Taylor's experience, moreover, many authorities are not yet disposed to attribute so much influence to heredity, and on one side only, and none whatever to environment. Another point is that the vasectomized individual, as admitted by Doctor Taylor himself, remains an irresponsible sexual maniac; is he to be permitted to mingle with decent society simply because he is sterile? Finally, legislators, governors, editors, and humanitarians must continue to answer to their own consciences. —Ed.]

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.

The Practice of Obstetrics. Designed for the Use of Students and Practitioners of Medicine. By J. CLIFFORD EDELL, M.D., Professor of Obstetrics and Clinical Midwifery in Cornell University, Medical College. Visiting Obstetrician at Bellevue Hospital, etc. Fourth Edition. Revised. With 1,316 Illustrations. Including Five Colored Plates and 36 Figures Printed in Colors. Philadelphia: P. Blakiston's Son & Co., 1913. Pp. xxii-1062. Price \$6.

The fourth edition of this valuable textbook has undergone great changes. While the first and second editions, which followed the first after three months, showed very little difference, the third was somewhat reduced in bulk and contained much new material. After a lapse of five years a new edition has become necessary, and the author has again greatly altered the volume, which has been revised and brought up to date. The discussion of pathology has been largely rewritten, and much new material has been added, also in the chapter on blood pressure observations, anesthesia in labor, vaccine and serum treatment in sepsis; hemorrhage of the newly born.

pelvimetry, funnel pelvis and their treatment, premature rupture of the membrane, polytomy, extraperitoneal Cesarean section, etc. We can here only repeat what we said in our review of the third edition (April 6, 1907). "The book is unexcelled in mechanical appearance, and we regard it as one of the best treatises on obstetrics in any language."

The People's Medical Guide. Points for the Patient. Notes for the Nurse. Matter for the Medical Adviser. Succor for the Sufferer, and Precepts for the Public. By JOHN GRIMSHAW, M.D., B.S., D.P.H., M.R.C.S., etc. New York: The Macmillan Company, 1912. Pp. xx-839. (Price, \$3.)

As the title indicates, the author wishes to cover a great field in his book: Points for the patient, notes for the nurse, matter for the medical adviser, succor for the sufferer, and precepts for the public—and all this is to be covered in 824 pages. We accompany man from his birth, and find, therefore, the first chapter dedicated to the rearing and the diseases of children, to be followed by the noninfectious diseases. This makes section one, while in section two the infectious diseases are treated, together with the diseases of the nervous system, and of the organs of respiration and circulation. Section three takes in surgery, that is, injury of muscle, bones, and joints, deformities, and surgical diseases. In section four the author speaks of the diseases of special organs, nose, ear, throat, and eye. Section five is given over to skin diseases, section six to food and feeding, and section seven to physical exercises. The arrangement of the matter is somewhat confusing, and a good index would have helped greatly, but the index given is rather short and too condensed and refers to the table of contents. The book thus loses a great deal as a handy reference work. To go into detail would lead us too far, but if the book is to be introduced into the United States it should have been adjusted to American ideas. Unquestionably, medicine is international, but each country believes in certain remedies and those favored in our country should have been taken into consideration. The author speaks strongly against quacks and quackery and mentions in the proper chapter a few of the quack remedies pertaining to the organ which is treated of therein. In his introduction also he refers to quacks, but reference to the stand taken by the American Medical Association and the propaganda made by *Collier's Weekly* to educate the public has been entirely omitted. In short, no reference is made to America. The book contains many good points which will be highly appreciated, especially by parents.

The Life and Work of William Pryor Letchworth, Student and Minister of Public Benevolence. By J. N. LARNED, Author of *A Study of Greatness in Men, Books, Culture, and Character; Seventy Centuries of the Life of Mankind. Editor of History for Ready Reference.* Boston and New York: Houghton Mifflin Company, 1912. Pp. viii-472. (Price, \$2.)

Mr. Letchworth, a philanthropist in the best sense of the word, was well known to a large number of physicians through his splendid labors on behalf of the feeble-minded, epileptics, and insane in New York State. To the legal profession and the benevolent public, however, he is also familiar because of his work for the judicious care of wayward and homeless children, and through his efforts to preserve natural scenic and historic sites. His wealth, and his positions—member of the State Board of Charities and for a time State Charity Commissioner—afforded opportunities for good; but it took a great heart and a great mind such as Mr. Letchworth's to use them to the advantage. Mr. Larned has rendered the world a service by perpetuating the memory of this benefactor in the entertaining and well written book before us.

Kohlhydratkuren bei Diabetes. Von Dr. MAX KLOTZ. Strassburg i.E. Würzburg: Curt Kabitzsch, 1912. Pp. 213-286.

Klotz reviews with some detail certain forms of treatment that have been employed as carbohydrate cures in diabetes. The first one discussed is the "oat cure," the technique, indications, and consequences. This is followed by chapters on treatment by milk, potatoes, rice, and one on levulose, inulin, hemicellulose, and dextrose. According to the au-

thor's idea there is a definite basis upon which the results of the carbohydrate treatment can be explained. As a result of the fermentative abilities of the intestinal flora the ingested carbohydrates undergo such a marked fermentation that this absorption as sugar is kindred and follows as stages in the oxidation of sugar. It is therefore evident that the more complex carbohydrates are better suited for this purpose than the more simply formed sugars. The monograph is distinctly good and contains a great deal of valuable material in a comparatively small compass. Unfortunately it possesses neither table of contents nor index.

Pathology and Treatment of Diseases of Women. By A. MARTIN, Professor und Direktor der Universitäts-Frauenklinik in Greifswald, and PH. JUNG, Professor und Oberarzt der Universitäts-Frauenklinik in Greifswald. Fourth Edition, Rewritten. Only Authorized English Translation, Written and Edited by HENRY SCHMITZ, M.D., Professor of Gynecology, Chicago College of Medicine and Surgery, etc. With One Hundred and Eighty-seven Illustrations, Twenty-five of which are in Colors. New York: Rebman Company, 1912. Pp. xvi-475. (Price, \$5.)

Within a comparatively small compass, the two authors have arranged a large amount of material in a most convenient and concise manner. Discussion is avoided, and those methods only are given which have proved satisfactory. By the aid of a bold face type the salient points are indicated, which is distinctly advantageous to the man who wishes to use the book for reference. The pathological side is very well taken care of, particularly that part dealing with the various tumors of the vulva and uterus. The chapter on carcinoma is a good one and well illustrated. Methods of diagnosis and of treatment are given in sufficient detail to be of distinct value. An extensive bibliography and an unusually good index add much to the usefulness of the book. The print is exceptionally good, being not only clear, but somewhat larger than usual. Although this volume cannot fill the same place as do the systems of gynecology, yet, on account of its clearness and brevity, it is a valuable adjunct to the doctor's library.

Manual of Chemistry. A Guide to Lectures and Laboratory Work for Beginners in Chemistry. A Textbook Specially Adapted for Students of Medicine, Pharmacy, and Dentistry. By W. SIMON, Ph.D., M.D., Professor of Chemistry in the College of Physicians and Surgeons of Baltimore, etc., and DANIEL BASE, Ph.D., Professor of Chemistry in the Maryland College of Pharmacy, Department of the University of Maryland, etc. Tenth Edition, Thoroughly Revised. With Eighty-two Illustrations, One Colored Spectra Plate, and Eight Colored Plates Representing Sixty-four Chemical Reactions. Philadelphia and New York: Lea & Febiger, 1912. Pp. xvii-774.

As the authors' preface to the tenth edition of this work states, they have tried to bring it up to present methods and conceptions. They have done this very well indeed; the ion and ionic theory receive due credit and consideration wherever possible, particular stress being laid upon the ionic action of indicators. Due importance is attached to the periodic law and its advantages of classification are shown, though not strictly adhered to; while the older and more familiar groupings are used for the purposes of the student, it is much to be preferred.

The tests for many of the very poisonous compounds are given in sufficient detail for all practical purposes. Over 100 pages are devoted to physiological chemistry. This part of the work being contributed by G. Howard White, M.D., is especially well written and covers the field very admirably.

The work is divided into seven parts and these subdivisions follow each other in very orderly fashion and are logically and systematically arranged. Many newer preparations are given with their rational formulae. The volume contains 774 pages or fifty-eight more than the ninth edition which came out three years ago.

The work, all told, is complete; the colored plates are excellent; the index and the printing are good. In makeup and appearances the work is a counterpart of former editions.

Electricity in Gynecology. The Practical Uses of Electricity in Diseases of Women. Second Edition. By MAY CUSHMAN RICE, M.D., Professor of Gynecology and Clinician in the Illinois School of Electrotherapeutics. Illustrated. Chicago: L. I. Laing & Co., 1912. Pp. 159. (Price, \$1.50.)

The principal thought in the mind of the author in publishing this work, was to meet the urgent needs of the busy general practitioner by condensing the facts relative to the practical application of electricity in diseases of women. There can be no doubt of the usefulness of electricity, to a limited degree, in conservative gynecology. Essential facts are, as stated, a definite understanding of the currents, the polarity, the length of application, and frequency of treatment.

The first two chapters are on general characteristics of the various currents and practical points in applying electric currents. The remaining chapters are given to the treatment, by this method, of the diseases of women, beginning with the abnormalities of menstruation and closing with urethritis. The author's attitude is, "electricity for the patient, not the patient for electricity." The work is commendable.

The Physiology of Faith and Fear. Or, the Mind in Health and Disease. By WILLIAM S. SADLER, M.D., Professor of Physiological Therapeutics in the Postgraduate Medical School of Chicago, Director of the Chicago Institute of Physiological Therapeutics, etc. Illustrated. Chicago: A. C. McClurg & Co., 1912. Pp. xiv-580.

This book is frankly a presentation of the subject of mental therapeutics for popular reading, written by an author who in the preface disclaims all pretensions of being a psychologist. The first section, embracing about one hundred pages, is devoted to a rather desultory presentation of psychology. The second section deals with the influence of the different mental states upon the various functions and organs of the body in detail. The third and last section is the most extensive and is concerned with mental therapeutics. Much valuable material is presented throughout the work, and everywhere emphasis is laid on the facts that hope and faith have beneficial effects, while, on the contrary, worry and fear have the opposite influence on the entire organism. The reader is not asked to take these statements on faith, but explanation is made on the basis of physiological actions. The subject is presented in a clear and pleasing style and the text is illustrated by numerous plates and drawings.

Principles of Microbiology. A Treatise on Bacteria, Fungi, and Protozoa Pathogenic for Domesticated Animals. By VERANUS ALVA MOORE, B.S., M.D., V.M.D., Professor of Comparative Pathology, Bacteriology and Meat Inspection, New York State Veterinary College at Cornell University, and Director of the College. One Hundred and One Illustrations. Ithaca, N. Y.: Carpenter & Co., 1912. Pp. xi-506. (Price, \$3.50.)

This book devotes the first 150 pages to a presentation of the general facts relating to bacteriology, the methods employed for their study and identification. These are given briefly but clearly and contain all that is essential. The remaining pages are devoted to descriptions of the more important species pathogenic for animals, and to a brief discussion of the reaction of the tissues to microbic invasion and the theories of immunity. The chapter on serum diagnosis is complete and gives clearly the various steps followed in the application of the complement fixation test to glanders. This book is a good one and can be recommended for its special field.

Miscellany.

New York Division of Medical Reserve Corps.—With the formal organization of the New York Division of the Medical Reserve Corps of the United States Army which was effected at Fort Jay, Governor's Island, December 7th, a new military medical society bids fair to become one of the most active organizations in the city. There are about 200 members in the State of New York, of whom 114 reside in the greater city. The roster includes some of our best known physicians, and the great majority of

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Original Communications.

SALVARSAN VERSUS MERCURY.*

By E. WOOD RUGGLES, M. D.,

Rochester, N. Y.

In April, 1911, at the annual meeting of the Medical Society of the State of New York, one of the readers in the symposium on salvarsan gave us eleven reasons why the newly discovered drug was of little or no value in comparison with mercury, one of his statements finally annihilating the remedy for good, and all by stating that "606 does not cure syphilis." Several other paragraphs cited its frequently dangerous and fatal consequences.

I wish it were possible for me to deliver such an *ex cathedra* opinion, settling the status of the remedy forever, but the fact is I do not know, nor will any one know for several years, its exact place in therapeutics. Of a disease which can remain absolutely latent and symptomless for thirty years and then produce tabes, general paresis, ulcerating gummata, or grave disease of the vital organs the term cure must be used with a great deal of reservation. If we find that, ten or twenty years after treatment with this remedy, no tertiary nor parasyphilitic manifestations have occurred in the vast majority of patients and that the Wassermann reaction has remained permanently negative in spite of repeated tests, we shall then be justified in regarding this remedy as the *ne plus ultra* of specific treatment. Even the Wassermann reaction, which promised at first to provide an accurate diagnosis, is not absolutely reliable as to cure, for quite a good many cases, with unmistakable tertiary lesions, have given negative reactions.

However, it can be said just as positively that mercury does not cure syphilis. We have believed a large portion of our patients, who have followed out their treatment faithfully and fully and in whom no further symptoms have developed while they were under observation for several years afterward, to be cured, but the Wassermann test has shown many of these patients still to harbor latent syphilis. Also a fairly large proportion of tabetics and paretics has previously had what is regarded by the profession as a proper and sufficiently long treatment. Neither is quinine a specific in all cases of malaria, nor iron in every anemia.

What is certain, however, is that salvarsan, in the hands of those who have given it an extended trial, with the proper technique, has afforded re-

sults, both upon the symptoms of syphilis and upon the Wassermann reaction, which far excel the average results obtained through the use of mercury both as to rapidity and certainty of action.

A leading dermatologist, on learning the title of my essay, told me that it was stated incorrectly, that mercury is the proved remedy for syphilis, and should be given the more prominent position. In the civil courts the first party to an action, as a rule, is suing to obtain possession of something which the other party, rightfully or wrongfully, already has, and this to my mind is the position of salvarsan.

No medical discovery, at least within the memory of the living, has ever excited the interest and enthusiasm, and so divided physicians into two hostile camps as has this remedy. No medical topic has ever been exploited by the lay press so freely and, although in many respects this is to be deplored, it is, nevertheless, of service to mankind, that the public should learn more about venereal diseases, not merely of their existence, but also of their dangers.

To attempt anything like a comprehensive résumé of the voluminous medical literature concerning salvarsan, considerably more than two thousand articles already, would require hours of your time, and I shall only try to give some of the salient facts and opinions regarding its merit. Many physicians who have used salvarsan only by the intramuscular or subcutaneous method, or have been careless in using it intravenously, and many others who have administered the drug without proper preliminary examination of the eyes, circulatory organs, kidneys, etc., of the patients, have had unpleasant and even fatal sequelæ in their cases, and therefore viciously attack the preparation.

The history of salvarsan is so familiar that it is hardly worth while to remind you that its discovery was primarily due to an investigation concerning a remedy not for syphilis, but for sleeping sickness. When several of these arsenic compounds were found in many cases to destroy all the trypanosomes in the system by one treatment without injury to the organism, Professor Ehrlich's attention was directed to the possibility of their exerting a similar action upon another organism of the spirillum group, *Spirochaeta pallida*. As these remedies, however, were not absolutely organotropic, i. e., without injurious effect upon the human organism, further preparations were made, culminating, at the six hundredth and sixth attempt, in salvarsan.

Upon one point practically all observers agree: That, in this preparation, we have a new and very efficient ally in our symptomatic treatment of syphilis. Many lesions which had proved obstinate to,

*Read at the annual meeting of the Lake Keuka Medical Association, July 11, 1912.

or absolutely uninfluenced by the best forms of mercurial, iodide, and local treatment, have yielded almost magically to its action, and many patients with malignant syphilis who seemed doomed to an early death or deplorable deformity have been saved. Indeed its most remarkable results are attained in cases which have proved resistant to the action of mercury.

Another great advantage is that we are often able to accomplish by a single treatment as much or more than by a prolonged course of mercury. Its rapidity of action is marvellous. In one of my recent cases of about three months' standing, in which the initial lesion was still present and there was an extensive roseola with elevated, pigmented lesions on the forehead, four ulcerating mucous syphilitides of the roof of the mouth and a scalp covered with crusts, within twenty hours the crusts had vanished with the exception of four, and the mucous lesions had sloughed away leaving depressed areas covered with healthy granulations. Two days later all but one of these lesions had healed and were no longer visible, and the roseola had practically disappeared, except the pigmentation on the forehead.

To be sure we are hearing of a great many more cases of malignant syphilis than we formerly did. It is the custom of many physicians to regard cases which prove rebellious under the use of ordinary preparations of mercury as of malignant nature, especially if the patient is unable to take such preparations without serious injury to himself.

In behalf of mercury it must be admitted that it is hardly fair to judge the results of its use by cases treated by the ordinary internal method of administration. The longer I treat syphilis the more am I convinced that this method is inadequate, except in a minority of very mild cases. It is risky even in these cases, for the majority of tabetics and paretics give a history of mild syphilitic invasion. The heart and kidney sequelæ of scarlet fever similarly are more frequent in mild cases. The well known nerve specialist, Dr. Joseph Collins, in his article, Syphilitic Disease of the Nervous System, the Relationship to Inadequate and Improper Treatment of Syphilis, *Journal of the American Medical Association* for April 23d, makes the following statements:

The other point that I wish to make is that so long as remains the custom, which it would seem is well nigh universal, of administering mercury by the mouth, we cannot hope to know whether or not a sufficient amount of mercury is absorbed to combat successfully the action of the spirochetes and annihilate them. Many individuals present indications of the toxic effects of the drug before any considerable quantity is taken. An idiosyncrasy to the drug or an intolerance of it, does not signify that the system is impregnated, yet how often we find, in the history of a given case, that on the occurrence of such symptoms the amount of the drug was materially diminished or some other substance substituted for it. We cannot possibly know how much mercury is absorbed into the system unless we rub it through the skin or introduce it hypodermatically. In that case alone we can judge how much mercury is being put into the system, and satisfy ourselves that a sufficient amount has been absorbed to cure the disease or to kill the syphilitic bacillus.

To illustrate this insufficient mercurial treatment of syphilis, I will cite the following case:

CASE I. Three years and four months ago I had re-

ferred to me by Doctor Rose a patient who had been under the treatment of a very prominent physician for five years for syphilis. When he acquired it he was a red checked, healthy young man of twenty years. Upon consultation with me he was covered with the scars of gummatous, one testicle was as large as a small orange and as hard as stone, the left knee was one third larger than its fellow, full of pus, and had two discharging sinuses, the roof of the mouth and the nasal septum had been entirely destroyed, and the nose had fallen over on to the side of the face. There was a discharging gumma of the larynx at one time he breathed through this sinus; his voice was nearly gone, and on laryngeal examination I found a gumma of the larynx which had destroyed the right vocal cord and the right arytenoid cartilage and was beginning to attack the left cord. His physician, two weeks before, had examined the larynx and assured him there was nothing but inflammation present. During the five years no specialist, except one for the throat and nose, had been called in consultation. Perhaps one reason for the bad results in this case was that the patient had suffered severely from mercurial salivation early in his disease and the physician, not finding a preparation he could bear, had refrained from using mercury in sufficient quantities to combat the ravages of the disease.

He was put upon treatment with injections and later inunctions of mercury and large doses of potassium iodide, with the result that the gummatous process in the larynx was totally arrested, the external gumma of the larynx and those of the knee were healed, the testicle became small and of natural consistence, and from that date to this he has been in good general health, although at the time his early death seemed inevitable. His speech, though rather indistinct, is loud and manly, whereas had the gummatous process gone on two or three weeks longer he would have never spoken above a whisper. It is interesting now to see the remaining vocal cord approximate the opposite vacant wall of the larynx to produce phonation. Had this case yielded in the same manner to salvarsan I should have regarded it as a wonderful proof of the unique curative properties of the new remedy.

Undoubtedly Ehrlich's early, enthusiastic conclusion regarding *therapia sterilisans magna* and complete destruction of all spirochetes in the organism by one dose in all cases was a delusion. He himself has admitted this by his advice to administer at least two and of late three successive doses at intervals of a few weeks and to combine with it the action of mercury. Relapses, at first unknown, have occurred, and the Wassermann reaction, primarily rendered negative by the treatment, has again become positive in a good many cases. Nevertheless, noticeably in the practices of the most enthusiastic followers of Ehrlich, namely Schreiber and Wechsungen, over eighty per cent. of the cases have retained a negative reaction up to date, and there have been very few relapses. Another very striking proof of the efficacy of this treatment is afforded by the fact that a good many of the patients thus treated, fifteen or twenty, have acquired syphilis again.

CASE II. I have just received a reprint from Dr. G. S. Whiteside, of Portland, Oregon, reciting a case of badly treated syphilis of eighteen months' duration, in which was given a single, intravenous injection of salvarsan on February 24, 1911. At this time the patient presented numerous specific lesions and a positive Wassermann reaction. The injection was followed by a prompt disappearance of all the lesions, and three weeks later the Wassermann reaction was found to be negative.

On April 12th, seventeen days after coitus, he returned with several chancroids. One of these became indurated and spirochetes were found in the lesion; the Wassermann reaction was also positive. On May 6th a second intravenous injection of salvarsan was given, this being followed by rapid healing of the chancre. Thus, in this case, less than one month after the first salvarsan treatment an absolutely characteristic primary lesion occurred.

It is a well established fact that authenticated cases of reinfection by syphilis are almost unknown; personally I have only seen one case. The most prejudiced observer must admit the weight of this evidence.

DANGERS OF SALVARSAN.

Heroic treatment always has its limitations and dangers. Upon the discovery of the Röntgen rays, they were used indiscriminately, without thought of possible danger. The result was that numerous terrible burns were inflicted, and worse still, numbers of valuable lives were sacrificed through the development of epithelioma. After these dangerous results were appreciated, saner methods were adopted, and burns and the development of epithelioma through the use of the x ray have become a rarity.

Similarly, on the assurance of the harmlessness of salvarsan, it was used without regard to any possible evil effects upon the system, and many cases of death, blindness, paralysis, etc., occurred. With advancing knowledge of the contraindications attending its use, these accidents have become less and less frequent. In my own series I have had nothing to alarm me except a severe phlebitis and periphlebitis of the cephalic vein extending from the elbow to the shoulder. This was treated with absolute fixation of the arm in bed and the application of cloths wet in hot one to 5,000 bichloride solution. It subsided in about a week and has left no evil effects, as I was able to demonstrate upon examination of the patient several months later.

That patients occasionally die from mercurial treatment also is well known. I know of one such case occurring recently in Rochester. In this as in most fatal cases the method used was the injection of an insoluble salt. In the *Archiv für Dermatologie und Syphilis*, III, 1911, Fritz Juliusberg reports as follows a death following inunctions with blue ointment, which is generally the most easily borne of all mercurial treatments:

CASE III. The patient, a woman of forty-four years, having syphilitic ulcers on the thigh, received seven inunctions of blue ointment. Following this, she had a rise of temperature lasting a few days, without any other symptom; no stomatitis, albuminuria, nor intestinal disturbance. After the subsidence of the fever, the inunctions were resumed, and nothing further was noticed until after the twenty-seventh application, when acute symptoms of intoxication leading to death in fifteen days set in. The intoxication showed itself in a scarlatiniform rash, marked albuminuria and cylindruria, and intestinal irritation. The mucous membrane of the mouth, however, remained normal.

CONTRAINDICATIONS.

There are several absolute contraindications to the use of salvarsan, namely, severe organic heart or kidney disease, arteriosclerosis of the peripheral vessels, optic nerve lesions, disease of the auditory nerve, pulmonary diseases (except tuberculosis), diabetes, and serious organic nervous disease, particularly of the brain or spinal cord. However, syphilitic heart disease, where compensation is fair (it is to be remembered that over eighty-five per cent. of diseases of the aortic valve is syphilitic in origin) and syphilitic renal disease, even if severe, are favorably influenced by salvarsan. In one of my own patients, whose urine almost wholly coagulated on boiling and contained a moderate number

of casts, the urine became absolutely normal after the third injection of "606." Another recent patient presented loud murmurs in both the mitral and aortic valves, had a distinct trace of albumin in the urine, and was greatly emaciated and prostrated. These symptoms cleared up entirely after three injections.

As to the effects of salvarsan upon different syphilitic lesions, observers differ widely. All agree regarding its remarkable influence upon lesions of the mucous membranes and nonelevated, secondary skin lesions. In the papular form it acts much more slowly, and some assert it is distinctly inferior to mercury. Many have observed marvellous results in gummata and other tertiary lesions; a few minimize its action in these conditions.

The effect upon the Wassermann reaction is certainly striking, and in rapidity it far excels that of mercury. It is true that mercurial treatment will often produce a negative Wassermann reaction in a short time, but the test again becomes positive soon after cessation of treatment and is rarely permanently negative after less than two or three years of treatment. To be sure, after the salvarsan treatment a good many Wassermann reactions have returned to positive, particularly where only one injection had been given, but of the reported cases over half have remained negative up to the last report. In some cases a previously negative Wassermann reaction has become positive, which probably indicated the release of encapsulated spirochetes. In several of these cases a negative reaction has been obtained by a second injection. It seems to be much more difficult to bring about a negative reaction in the tertiary cases and extremely so in hereditary syphilis.

RELAPSES.

Here, again, statistics vary greatly. Those who have treated the largest number of cases have had the lowest proportion of recurrences. Naturally more are to be expected now that a longer time has elapsed. Several cases have been reported in which these recurrent lesions are unusually early and severe, much more so than after mercury. I venture to predict, however, that in the future, now that at least two injections are generally given and these intravenously, each being followed by a series of mercurial injections or inunctions, and in many cases the use of iodides as well, the proportion, both of relapses and of a persistent positive Wassermann reaction will be greatly reduced.

METHOD OF USE.

At first the remedy was used subcutaneously, but the local reactions were often so disastrous that this method was soon abandoned in favor of the intramuscular method. Solutions, acid, neutral, and alkaline, and many kinds of suspensions have been used for this purpose. From all of these methods a certain amount of necrosis always ensues and many serious results have been reported. In every case where it has become necessary to excise the tissues to promote healing, a large proportion of the arsenic has been found to be unabsorbed.

At the present time the intravenous is almost universally recognized as the best method, and Ehrlich recently stated that, until his death, he would

advocate that the remedy should be used in no other way. Certainly it is the most logical method, and only the lazy and the careless will continue the hypodermic administration of the concentrated remedy.

After having two or three cases in which puncture of the vein was very difficult, I adopted the more certain if less scientific method of cutting down upon the vein in every case. After treating about fifteen cases in this manner the thought came to me that, with the recent rapid dissemination of knowledge concerning syphilis and particularly its treatment by salvarsan, among the laity, these tell-tale scars in the fold of the elbow would prove a great embarrassment to many of their possessors. Men who strip in athletic clubs, those working with shirt sleeves well rolled up, the summer man whose arms are bare to the top of the shoulder, the golf and tennis player, all these would be embarrassed to explain a scar in this locality to wise questioners. Then, too, fathers who are wisely anxious about the future of their daughters might be inclined to examine this part of the anatomy of their future sons-in-law.

These reasons, which are far from being fanciful, decided me to return to the original method which I am now practising with uniform success, using the gravity method. Its technique is rather difficult to acquire; not merely the art of puncturing the vein so as to secure a flow of blood, but particularly that of entering the vein just far enough so that the lumen of the needle is wholly within its calibre and without piercing the lower wall. If one fails in either of these particulars he will cause a tumor on introducing the salt solution and will not dare, unless worse than foolhardy, to inject salvarsan. Unless one is careful he is also apt partly to withdraw the needle from the vein while injecting, and thus infiltrate the tissues with salvarsan, producing severe and even dangerous local reaction.

After becoming tired of the monotony of pumping by the syringe method and the real risk of withdrawing blood into the syringe and forming clots by an assistant turning the cock in the wrong direction, or at the wrong time, I hit upon the following manner of using the gravity method which leaves nothing to be desired as to simplicity, ease, and accuracy. I may not be the first to employ it, but have found no description of its use.

One longitudinal arm of a three way cock, that toward which the handle turns, is attached to the short piece of tubing leading to the syringe and the female tip to the other end of this tubing. The opposite arm is attached to the tubing leading to the "606" solution, which stands in a pail of water at the temperature of 110° F., and the lateral arm to that leading to the needle. The male tip is attached to the other end of this piece of tubing.

If upon experimenting with water it does not circulate in the manner described below, the three way cock is certainly at fault, they not being all of the same model. In this case, the metal which limits the turning of the cock should be filed away so that it can be turned one quarter farther around.

The syringe is filled with sterile water, the cock turned toward it, and the water injected through

the tubing until all the air bubbles are forced out through the "606" solution. If salt solution is used for this purpose it often causes turbidity of the bottom of the cylinder of solution, i. e., when made with plain, filtered, sterile water, which is preferable. The cock is then turned immediately toward the lateral arm to avoid syphoning out the solution.

The syringe is emptied, filled with sterile normal salt solution and again attached. This fluid is then injected till it flows from the tip which fits into the needle. If a glass tube having a bulb blown upon one side is inserted in the tubing between the cock and the needle, and this bulb filled, any bubbles of air will collect in the bulb, if it is held upright, and not enter the vein.

The vein is then pierced, the tourniquet released as soon as the blood flows, the tip fitted into the needle, and the salt solution injected, slowly at first, while carefully observing if a tumor forms. If this occurs the needle should be withdrawn and another vein tried. If this is not the case most of the contents of the syringe are injected, after which an assistant removes the cylinder from the pail of water and elevates it to a distance of two and one half feet above the patient, and attaches it to a standard. At the same instant the cock is turned 180° , whereupon the solution enters the vein by gravity. When nearly enough solution has flowed in, the syringe is again attached to the tubing, and when the operator gives the word the cock is turned back 180° and a syringe of salt solution injected, thus washing the salvarsan solution out of the veins which have been most exposed to its action and insuring that none is left in the tissues upon withdrawing the needle.

Further improvements in technique have reduced the reaction following the use of salvarsan to nil in practically all cases. It has been found that if the water used in making the solution is distilled the same day as used the reaction becomes very much less pronounced.

This fact is accounted for on the theory that non-pathological microorganisms develop in distilled water upon standing and produce spores, the albuminous substance of which is not destroyed by boiling, and that this substance unites with salvarsan, forming a toxic compound which causes the untoward symptoms. The pronounced decrease in the amount of reaction following this changed technique certainly supports this theory.

Upon procuring a still and making my own distilled water a short time before the injection, I noticed immediately a decided improvement as to lack of symptoms following the treatment. However, a certain amount of rise in temperature generally followed, from one half to three fourths of a degree. I then began using freshly distilled water for boiling the cylinders, the rubber and glass tubing and metal parts, and since then, in eight cases, have not had any elevation of temperature, nausea, chills, or any symptoms whatever. The patients leave the hospital in from eighteen to twenty-four hours, feeling perfectly well, although a few complain of slight lassitude.

My own series of forty-five cases receiving one hundred injections has not, with a few exceptions,

been particularly interesting. The reason for this is that there have happened to be but few cases with severe syphilitic lesions in my practice during the past eighteen months. All of these patients have been injected twice with the exception of seven. One of these was a young man who refused to have the second injection made or to take mercury in any form. Nevertheless, he gave two negative Wassermann reactions, one two months, the other six months after his one salvarsan treatment, administered two weeks after the appearance of a chancre, in which I demonstrated active spirochetes. Two others never returned, and the remaining four have yet to receive their other treatments. Twenty patients have been injected twice.

Fifteen have been injected three times, two of these because of a relapse, the remainder because of my feeling that it is easier to remove all vestiges of the disease when its virulence has been reduced by previous treatment. If one gives two treatments, follows the second by a six weeks' course of mercury, and then waits ten weeks before trying the Wassermann test, he gives the spirochetes a good chance to propagate and renew their attack upon the tissues during this long wait.

A recent case has confirmed my belief in the advisability of giving three injections whenever possible, particularly since the remedy seems to act like a tonic in most cases.

CASE IV. G. G., twenty-two years old, a very robust young man, coitus two months ago; two weeks later chancre of penis appeared which was then nearly healed. At present had roseola, enlarged glands, and mucous patches of throat and tongue in which I found spirochetes.

On July 27, 1911, he received 0.6 gramme salvarsan intravenously, giving only a moderate reaction. On September 2d, he showed a small mucous lesion on the inside of the cheek which I then did not believe specific. Received injections and injections of mercury between his first and second injection, the latter being on October 6th and injections of mercury for seven weeks later.

On November 10th he told me that he was eating "like a horse" and had gained fifteen pounds.

He felt well until April 20, 1912, when he came to me with a mucous plaque in his mouth from which I was able to demonstrate *Spirochaeta pallida* by the dark field method. He received two more salvarsan treatments and no further syphilitic symptoms developed.

Two cases have received four injections, one the preceding, the other the case of secondary iritis, which four months after the two injections still gave a doubtful Wassermann reaction. The latter patient is perfectly well since his last treatment on March 4, 1912 (negative Wassermann reaction).

Fourteen of these patients were injected upon the discovery of the active spirochetes in the primary lesion by the dark field method. Of these in only three have developed any symptoms subsequent to the first injection. In one an iritis between the first and second treatments, in the second a mucous plaque containing spirochetes, six months after his second treatment, and in the third a diplopia two months after his third treatment. This may not prove to be syphilitic. He left for a long business trip the same day it was discovered and has not returned.

Of the other cases not mentioned below only two have shown any subsequent symptoms, and these not definite.

CASE V. One of these patients was injected on April 23d, at least four, and possibly ten months after infection, as he had had what were termed chancroids by the surgeon on the United States ship on which he was serving, at both of these dates. His mouth and throat were full of mucous plaques, his hair was falling, he had considerable headache, and I found spirochetes in a condyloma of the anus. Cases like this which have been without treatment several months are much more difficult to cure. He received a second injection June 26th. His throat had never cleared up entirely, that is it was still red and inflamed, though no plaques were present. He felt stronger, however, than before the treatment. On account of the continuance of the pharyngitis he received a third injection on August 30th. He complained for some time afterward of some sore throat, and therefore received injections of mercury and potassium iodide internally. At present he is apparently cured.

CASE VI. The second case is one of syphilis of several years' standing whose only symptom was the development of small, intensely painful mucous plaques of the mouth. The patient had improved considerably under mercurial injections and iodides, but whenever he ate tomatoes or anything strongly acid he would have one or more of the painful lesions. The Wassermann reaction on May 10, 1911, was positive. He was given a single injection of salvarsan on May 18th, but, owing to family and business relations did not find it possible to take the second until six months later. The condition of his mouth greatly improved and he has several times eaten tomatoes, which previously invariably caused trouble, with impunity. Nevertheless, he occasionally has mouth lesions, which, however, show no spirochetes and are probably not specific.

The following eleven cases present particular interest:

CASE VII. A widow, forty-three years old, was referred to me from the health department by Doctor Goler, on February 25th. She had borne a syphilitic child, which died in a few weeks, ten years previously. Her own health was good until a few months before when rupia began to develop of the face and right thigh. One of these, on the chin, projected like a horn about one inch and was of about the same diameter. Another similar growth, slightly smaller, was on the forehead and a third upon the right thigh. The patient was injected on March 1, 1911, being my first case. She reacted very severely to the treatment and was really ill. However, the rupia began to recede immediately and vanished in a short time, leaving only a pigmentation of the skin. This woman was a derelict and would not listen to the suggestion of a Wassermann test or a second injection and has drifted from my observation.

CASE VIII. James N., twenty-three years old, parents well, general health good. Acquired both syphilis and gonorrhea on December 1, 1908. Had a chancre, roseola, and sore throat. He was treated for two months by a quack and two months by a good general practitioner, but asserted that neither of them told him that it was necessary to continue treatment for two or three years in order to cure the disease. He then left Rochester and abandoned treatment. About six or seven months later, in December, 1909, he was suddenly affected by lameness in both knees, particularly the right, and incontinence of urine and feces, so that if he was unable to reach a toilet in time he would void these in his clothing. He also suffered from the same incontinence at night. At the same time he began to have severe headache. He was immediately placed in a hospital and given strong mercurial and iodide treatment which had been carried on ever since.

Up to the time I saw him, on March 9, 1911, there had been practically no improvement. At this time his condition was described as follows: He was apathetic and listless, the knee jerks were exaggerated, pupillary reflexes slow, stood well with eyes closed, hyperextension sign normal; urine 1,018, quite cloudy, due to phosphates and oxalates, and contained one half per cent. by weight of albumin (a test tube of urine almost wholly coagulated on boiling). A moderate number of hyaline casts were also present. He had no bowel movement without cathartics; sometimes had severe pains in bladder region. His gait was hard to describe, partly spastic and partly the result of weakness in the thigh muscles. He was practically unable

to walk without a cane and could not without it go down stairs or down hill without falling.

On account of the severe renal symptoms I hesitated about giving him salvarsan, but concluded that this was a case of syphilitic kidneys and so, after putting him on a milk diet for a month, during which time the albumin lessened about one third, gave him 0.6 gramme salvarsan on April 11, 1911. He had a moderately severe reaction, which only lasted a few hours. His condition began to improve immediately. His head became clearer, he was more ambitious, the incontinence became lessened so that he had a distinct warning of several minutes, and incontinence at night became more and more infrequent until, at the last time I saw him, nine months ago, he had not been troubled by it for several weeks. His gait progressively improved, especially after the second injection, which he received June 26th, the delay being due to family and financial troubles, and he became able to walk down hill and even down stairs, carrying a load in both hands, which had been previously impossible. By increasing the length of his walks and practising steps to overcome the lack of coordination, he soon became able to walk a mile without his cane, although this tired him considerably.

As his gait left much to be desired and the thigh muscles particularly on the right side, were still shrunken and flabby, I gave him a third injection of salvarsan on September 12th. The improvement both in his walking and in the strengthening of the legs was still more remarkable within a week, at the end of which he left for his home in Europe, than during the whole preceding months. During the whole time he had received mercury either by injections or inunctions and large doses of potassium iodide. I saw his brother a week ago and he informed me that the patient continued to improve and felt almost well.

This case alone would justify the assertion that salvarsan is decidedly superior, at least in some instances, to our previous treatment of syphilis. I regard it as a veritable resurrection. The patient would certainly have died in a very few years from syphilitic nephritis and even had he lived, death would have been far preferable as he would have been only a waif and a source of disgust to himself and an expense to his family for the rest of his life. The urine cleared rapidly at first, then more gradually, until before receiving the third injection it contained only one fortieth per cent. by weight (one twentieth of the original amount) and, after the third injection, there was absolutely no trace of albumin or casts.

CASE IX (Congenital syphilis). On May 9, 1911, I was called to the General Hospital by Dr. Charles D. Young, to see a mother and child. The infant was born five weeks previously and presented in a few days a general eruption which a consultant declared was not syphilitic. Mother and child left the hospital two weeks later and Doctor Young had not seen them since. When I first saw the child it was practically covered with a syphilitic pemphigus which, owing to its duration, did not present many of the characteristics of the disease, except in a few recent lesions. The child was weak, suffering from extreme marasmus, and its breathing was almost incessant of snuffles. Most of the lesions were covered with hemorrhagic crusts and many, particularly about the buttocks and legs, were deeply ulcerated, leaving afterward unsightly, pigmented scars. The dark field method demonstrated numerous spirochetes in the contents of a recent bulla.

The child was put upon mercurial ointment administered under the abdominal binder and diiodohydroxypropyl (Iothion) rubbed in for the iodine effect. The mother was given an intravenous injection of 0.5 gramme salvarsan May 14th and again, June 14th. The baby began to improve noticeably in general condition, and the skin lesions cleared up. When Doctor Young was pleased to term a miraculous manner. I last saw the child on October 12, 1911, and, although not as well developed as a child of his months, could be regarded as healthy and weighed fifteen pounds, twice as much as at the beginning of treatment. The only trouble at that time seemed to be the difficulty of getting proper nourishment, which was

largely due to the youth, inexperience, and carelessness of the mother. The glands which had been numerous and large were at this time hardly appreciable.

CASE X. On May 28, 1911, a physician consulted me regarding his condition. He had been suffering for about four weeks from general malaise, remittent fever, severe pains in his joints and muscles, and a general run down condition. Several diagnoses had been made by physicians to whom he had spoken regarding his condition. One believed that he found streptococci in his urine and diagnosed pyelitis, another attributed the high temperature to typhoid fever, a third told him that he surely had tuberculosis and wanted him to depart the same day for Saranac. A week previous to his call an eruption had developed which plainly was a roseola although of an unusual appearance, being darker and more papular than is usually the case in a recent eruption. On the first joint of the left forefinger he presented a lesion of about one half inch in diameter which was nearly healed. This had been present for over two months. Involution was so nearly complete that I did not believe I should be able to find spirochetes, but nevertheless succeeded. Three months previously he had employed prostatic massage in a case of gonorrhea complicated by syphilis and this was undoubtedly the source of his infection.

Upon the following day I administered 0.6 gramme salvarsan. He had a decided chill, his temperature was 102° F., and he felt rather nauseated. The next day his condition had changed tremendously for the better, his subjective pains had practically ceased, although there was still some tenderness on moving the limbs, his evening temperature fell to 99° F., and his general appearance and condition became normal within two or three days so that he was able to resume active practice without difficulty. He received six weekly injections of salicylate of mercury, then a subsequent injection of salvarsan on July 19th, and another six weekly injections of mercury. At present he is in good condition and a Noguchi test made three months after the last mercurial treatment was negative so that he is probably cured.

CASE XI. C. R. N., referred to me by Dr. Parker Murphy, on June 7, 1911. This young man had acquired syphilis over two years ago. Had chancre and roseola, and three or four months later began to get deep ulcerating patches of the tongue. In spite of active treatment he had continued to suffer from severe mucous plaques of the tongue, throat, and mouth without much or any let up. Upon consultation he presented a very severe leucoplakia of the tongue which was deeply fissured. He had had a syphilitic of the left knee for over a year, now constituting a triangular gumma, the edges of which measured two and one half inches each. His lower lip was swollen and protruded like a negro's with large ulcerating patches occupying almost the whole of the right half of the vermilion border and extending one half inch below, and large mucous plaques occupying the inside of the lip opposite this area. In view of its obstinate, severe recurrences and the presence of a gumma only two years after infection, in spite of good treatment, this must be denominated a case of malignant syphilis. He received an injection of 0.6 gramme salvarsan on June 9th. In four days the lower lip had receded greatly in size and the ulcers were over half healed. His progress was rapid and uneventful. He received a second injection on July 27th. His present condition is good.

CASE XII. K. R. This patient was brought to me by an out of town physician on July 12, 1911. He had had a chancre of the upper lip for two months and a roseola for about two weeks. The most probable source of infection was a brother who had had syphilis for six years. The lip was greatly enlarged and the chancre covered with thick scales, projecting in such a manner as to give the patient a most unsightly appearance. Spirochetes were found in this lesion. He was injected on July 13th. On July 18th he wrote me that the lip was practically well.

There were no other symptoms until on August 20th he noticed a blurring of vision in the right eye which progressed steadily. Then an increased secretion of tears developed, wetting the pillow at night. On August 20th he began to have pain in the eyeball and posterior to it, which increased until at the time of his second visit, September 6th, it was very severe, particularly at night. The pupil was irregular and the eye presented every symptom of a severe iritis. The patient was supposed to receive

injections of salicylate of mercury weekly, after the use of "606," but had had only one owing to breakage of the syringe. Had he received them regularly this relapse of the disease would probably have been averted. Both eye specialists who had seen him opposed giving him a second injection, but I regarded the condition as due altogether to syphilis and not to salvarsan, and so gave him salvarsan on the same day. His condition improved much more rapidly than under the ordinary internal and local treatment, and within one week from this injection his subjective pain and the sensitiveness of the eye to light had totally disappeared so that he abandoned the use of colored glasses. This must be regarded as altogether remarkable. At present he has a slight irregularity in the contour of the pupil but his vision is perfect.

CASE XIII. Mrs. M. J., thirty-eight years old. Referred by an out of town physician. Heredity and general health good. Husband died eight years ago. History: About five years ago she began to have canker sores in the mouth and throat and was confined to bed for several weeks. Ever since she had suffered, nearly constantly from more or less mouth and throat trouble, which was worse at menstruation. Had taken treatment most of the time, a "blood vitalizer" for the past six months. Had lost considerable hair.

At present there were several mucous plaques on the tongue and inside of mouth, most of them ulcerating, the mouth being so sore that hot fluids caused great pain and the odor of the breath was nauseating.

This patient was given three injections on July 10, September 1, and October 27, 1911. She obtained decided relief after each injection, but her symptoms returned later and she was unwilling to take any more treatments. This case must be classed as a failure, the only absolute failure in forty-three cases.

CASE XIV. Miss L., referred to me by an out of town physician on December 15, 1911. Syphilis since four years. Recurrent mucous syphilides of mouth and pharynx, one of which had destroyed the uvula. Patient was anemic and poorly nourished. It was decided to employ salvarsan.

During my absence from the city from December 23d to 29th, she suddenly acquired an ulcerating patch in the soft palate anteriorly and to the right of the stump of the uvula, also a similar patch in the right tonsil. Her physician put her on potassium iodide and sent her to the city for treatment. Before my return, three days later, the lesion in the soft palate had perforated making an orifice into the nostril the size of the middle finger, and the right tonsil was also largely destroyed. I administered salvarsan on the afternoon of December 30th and was able to note an immediate arrest of the ulcerative process in both lesions.

These lesions were treated with silver nitrate and the opening in the soft palate began to contract in two or three days. She received a second injection on February 13, 1912. At this time the orifice had closed more than half. She received a third injection on April 19, 1912. The opening in the soft palate had closed to a pinhole size. I have never known a large perforation like this to close without plastic operation.

Subsequent to the third treatment, and in spite of weekly injections of salicylate of mercury, ulceration developed on the posterior wall of the pharynx above the uvula. This proved very obstinate and was not healed until July 1st after large doses of potassium iodide and local treatment with ten per cent. nitrate of silver solution.

Malignant cases of several years' standing, like this and the preceding, are extremely obstinate and withstand treatment remarkably.

CASE XV. Mrs. B., first seen January 24, 1911. Thirty-two years old. No knowledge of specific infection. Suffered severely from iritis of the left eye a year ago and had had a severe eruption most of the time for the last two years. At consultation she presented an eruption of the arms and legs, less pronounced on the body, which almost perfectly simulated psoriasis. The shins of both legs were very tender and the bones characteristically nodular. She was put on mercurial inunctions and large doses of potassium iodide internally. On February 9, 1911, the arms were nearly clear of the eruption, but the stains remained. She was given salvarsan on September 9th and November 8, 1911. When last seen on March 12, 1912,

she was feeling fine, the stains of the old syphilides had nearly disappeared, and the tenderness and exostoses of the shin bones had vanished.

CASE XVI. P. R., October 20, 1911, referred to me by an eye specialist for an iritis believed by him to be a metastatic manifestation of gonorrhea. The patient had had gonorrhea since March, 1911. He presented a profuse, very purulent discharge containing gonococci and both glasses of urine were cloudy. In July he had four or five chancres on the prepuce and glans. Had taken some specific treatment. Had had sore throat and loss of hair. Five days ago the vision in the right eye became blurred and light was painful. There was profuse lachrymation, though the pain was not severe. I found spirochetes in a plaque of the upper lip. On October 24th I administered salvarsan. There was no reaction and no rise in temperature. The iritis cleared up in a few days. He received a second injection of salvarsan on November 21, 1911, and has been well ever since.

The most interesting feature of this case is that the gonorrhea was apparently cured by the salvarsan treatments. Ten days after the second treatment there was no discharge, no gonococci, both glasses of the urine were clear and it has remained so ever since. I have never known a severe posterior case of gonorrhea of several months' standing to recover in six weeks' time absolutely without treatment and so feel inclined to attribute this result to salvarsan. This must obviously be confirmed by other cases in order to be of any value.

CASE XVII. C. J., thirty-nine years old, December 1, 1911. Out of town patient. Denied extramarital coitus. On October 28th noticed small abrasion in sulcus on upper surface. November 6th the attending physician found induration. The ulcer had extended and at the examination was one half inch in depth. The usual glands were enlarged and the patient was very lame from muscular pain in legs. There was a slight ulceration around meatus probably caused by secondary bacteria.

He had a severe pustular syphilide, and many of the lesions had broken down and were exuding pus in such quantities that he was forced to wear gauze next to the skin. He had an indurated patch on the right tonsil, from which, after over an hour's search, I was able to find one characteristic spirochete.

I advised salvarsan, but this was refused. Inunctions of mercury were suggested as a substitute. The patient returned December 15th for treatment. Although he had had but eight inunctions, he already had severe salivation and stomatitis with a marked line along the gums. The patch on the tonsil had ulcerated deeply into it. The myalgia had increased so that he could hardly walk.

As the patient presented loud aortic and mitral murmurs and the urine contained a distinct trace of albumin I hesitated about administering salvarsan, but, in view of the presence of malignant syphilis (pustular syphilides within six weeks of the appearance of the chancre justifying this diagnosis) and the marked intolerance of mercury, I decided to take the chances. At this time he presented the appearance of a prematurely old man, the face being drawn and anxious, the voice weak, the gait slow and painful, and the skin pale.

A severe reaction ensued with chills, vomiting, and rather high temperature (102.5°) and he was obliged to remain in the hospital five days. At the end of this time the ulcers of the tonsil and sulcus had nearly healed and he was able to walk much better. He wrote me a few days later that the pain in the legs had disappeared, he was no longer lame, and felt better though still weak.

When he returned for his second "606" on January 25th, I failed to recognize him till he introduced himself, as he looked twenty years younger.

Two days after the third injection the heart murmurs were no longer present. He has since given a negative Wassermann.

Two of the patients presented a dicrotic pulse, one the next day, the other the second day following the injection. Two cases had an extremely profuse diarrhea during the whole night following injection;

several others were extremely constipated afterward. Most of my earlier patients suffered from slight or severe chills, nausea, or vomiting, some from all three, but these sequelæ and the height of the temperature have been much less pronounced in the later half of my cases and in the last eight or ten there has been no reaction whatever except a temperature of 99.3° F. in one patient, who otherwise had not the slightest symptom.

The roseola was greatly exaggerated in one case (Herxheimer reaction) after twenty-four hours, but after another day had faded till it was much less prominent than before the treatment.

Only twelve of these patients have had a blood test made after treatment (eleven Wassermann and one Noguchi). Only one test has been frankly positive and this was in a case of hereditary syphilis, which it is extremely difficult to eradicate. The others were all negative except two, which were weakly positive and one which was doubtful and in these cases two more injections were given. If we add to these two comparative failures the case of a mucous plaque after the second injection and the two women with long standing syphilis, we get six cases in which the remedy was more or less of a failure after two injections. Three patients have given two negative Wassermann reactions several months apart.

When one compares these results with the average course of the disease during the first two years under even the most effective mercurial treatment he must admit that the absence of symptoms is remarkable. Very few patients under mercurial treatment are free from occasional outbreaks of mucous syphilides during the first year or two, while other symptoms are not infrequent.

I recognize that the small proportion of cases which have received a blood test somewhat weakens the value of my conclusions. The remainder of the patients are apparently in good condition and my powers of suggestion have not sufficed to persuade them to undergo this bother and expense. Even the physician has had but one test made. The length of time which it is considered necessary to wait after cessation of treatment before the test is really reliable is being constantly increased, and ten or twelve weeks are regarded now as essential after any mercurial treatment. The antibodies which cause the reaction are temporarily banished or made inert for a long time after either mercurial or salvarsan treatment.

Except the first four or five cases all of the patients have received mercurial treatment either by injection or inunction between the first and second injections of salvarsan and for six or seven weeks following the second injection. In several cases I have combined iodide of potassium with the mercurial treatment on the theory that it has some action in releasing encapsulated spirochetes.

I wish, in conclusion, to cite the following three cases in support of the contention that the intravenous use of salvarsan is the only one which is justifiable. They are from the practice of another physician who has administered the remedy rather frequently. The first case is of a woman, twenty-six years of age, who had had syphilis two and one quarter years. She had a roughened, scaly syph-

ilide of the palm of the hand which had for a year defied treatment, which included three intramuscular injections of salvarsan. The lesion disappeared in two days after one intravenous injection.

Another case is that of a man, thirty-five years old, who had syphilis three years. He had suffered from a reddish, scaly eruption for several months. He was given two intramuscular injections of salvarsan, both of which sloughed out, while producing absolutely no effect upon the lesions. The lesions cleared up in a few days after the use of the first intravenous injection of salvarsan.

The third patient had a similar rash which was not benefited by an intramuscular injection of salvarsan. He was given an intravenous injection on February 29, 1912, and the rash cleared up within three weeks.

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MUNICIPAL SUPERVISION OF MATERNITY.*

By S. W. NEWMAYER, M. D.,

Philadelphia,

In Charge of Division of Child Hygiene, Bureau of Health.

In at least ten large cities of the United States there have been active and concerted efforts in the past two years to reduce an evident and unnecessary mortality among infants. While the greater part of the work has been done by private organizations, in most cities the health authorities have cooperated. Three cities have bureaus of child hygiene with well organized systems devoted to this special public health problem. With campaigns of education through visiting nurses, physicians, and exhibits, and by assuring supplies of pure, clean milk successful results have been attained in some of these cities. Those health officers who have been active in planning such work now realize there is a limit to the results that can be obtained. With a close study of cause and effect as seen through vital statistics diseases of infants were divided into the preventable, partly preventable, and nonpreventable. The preventable included diseases of the gastrointestinal tract, the respiratory diseases, pneumonia and tuberculosis, and the communicable diseases. In several cities public health movements reduced the mortality from these diseases.

There remained uninfluenced and stationary a class of diseases classified as partly preventable. These were the diseases of early infancy, congenital debility, premature births, injuries at birth, and so termed stillbirths. Vital statistics, the index to our efforts, have been sadly lacking, and the important rôle that these diseases played in infant mortality has been underestimated. Statisticians have heretofore tabulated deaths by yearly periods, requiring the United States government in their census on mortality previous to 1910 to omit a most important tabulation, the deaths in monthly periods in the first year and the daily periods in the first week. This new classification admits of a study which explains the reason for the limit in reducing

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infant mortality by the present health movements in our cities. The early deaths include:

1. Abortions and miscarriages.
2. Deaths during labor including: (a) Accidents and injuries during labor and (b) stillbirths.
3. Deaths during the first week of life from (a) premature births, (b) congenital debility, (c) forces acting during intrauterine life, syphilis, malformations, convulsions, (d) injuries at birth.
4. Deaths during the first month of life.

In the registration area of the United States in 1910, 37.6 per cent. of the deaths in the first year of life occur in the first month and almost two thirds of these deaths occur in the first week. One third of all deaths under one year are due to premature births, congenital debility, injuries at birth, malformations, and convulsions, and eighty per cent. of these deaths occur in the first month; 36,351 deaths in the first week and almost one half of these occur in the first day. It is evident that improper food or feeding with resulting gastro-enteric trouble is a negative factor in these deaths. The lives of most all of these infants were uninfluenced by conditions arising after birth. This mortality must be assigned to prenatal conditions and those arising at birth.

Except a very small amount of prenatal work performed in four cities of the United States, there is little of our public health work that can influence the early infant deaths. A close study and analysis of the causes and number of deaths in the first month and first week of life gives sufficient evidence that there should exist certain municipal supervision over the period of pregnancy, during labor, and the first month of life.

My excuse for presenting this contribution to this congress is to offer some suggestions as to possible methods of control of the early deaths. While vital statistics do not include abortions, miscarriages, and stillbirths, it seems but fair in a consideration of early deaths to include the possible infant.

It is impossible to estimate the number of abortions and miscarriages, but it has been variously estimated about ten per cent. of the pregnancies. Social duties, financial conditions, work, nationality, and intelligence are some factors influencing the number of these deaths. Abortions and miscarriages are more frequent among the native born Americans than among foreigners, due possibly to greater social aspirations of the former. Intelligence increases the desire for fewer pregnancies and smaller families. More full term pregnancies are found among the poor, due possibly to ignorance of methods of abortion or a realization that abortions are dangerous and more costly than infants. Poverty, when requiring the mother to work in factories to the last days, is an important causative factor in causing abortions, miscarriages, and premature births. Germany, Denmark, Holland, and Switzerland have laws regulating the employment of women in the latter months of pregnancy. No such laws exist in the United States, and their enactment with the enforcing of them by our cities would prove of great value. Regulation of employment would in some individuals seem to work hardships, as they work only out of necessity to help support the family. These conditions arising could

easily be met by the organized charities. Unfortunately a few charities when applied to for aid send mothers during pregnancy to work, and soon after delivery encourage weaning to admit of the mother returning to work. To aid in the reduction of infant mortality, especially in the first month, charity must be freely dispensed when asked by pregnant women, and the aid must be furnished without red tape. I have known women in the last months of pregnancy to be compelled to work ten hours daily sewing at a machine and earning about twelve cents a day; added to which work she has the responsibility of care of her other children and her household duties. Where such cases cannot be met by the private charities, the municipal government should support such families for a few months.

Abortions and miscarriages, when due to disease of the woman or the generative organs, could often be averted by the medical attendant giving early thorough examinations, and treatment when needed. A lessening of the social evil, by education of the public through campaigns by health departments and others, will in time give results.

Stillbirths, which invariably include infants born and living a few moments to a few hours, have been estimated by available statistics to be from two to five per cent. of the total number of births. These deaths for various reasons are not included in the general mortality rate. That this mortality remains stationary and possibly has increased is shown by the following rates for the past ten years in the city of Philadelphia:

TABLE I.
CITY OF PHILADELPHIA: BIRTHS, STILLBIRTHS, AND PREMATURE BIRTHS.

Year.	Births—		Still births—		Premature births	
	Number.	Rate per 1,000 population.	Number.	Rate per 1,000 births.	Number.	Rate per 1,000 births.
1902.....	29,811	22.1	1,382	46.3	527	17.7
1903.....	31,028	22.6	1,323	42.6	778	25.1
1904.....	32,223	23.0	1,788	55.5	499	15.5
1905.....	33,339	23.4	1,993	57.1	457	13.7
1906.....	34,771	24.0	1,841	52.9	497	14.3
1907.....	35,142	23.8	2,004	57.0	505	16.1
1908.....	36,641	23.7	2,036	55.6	600	16.6
1909.....	37,540	24.6	1,827	48.7	602	16.0
1910.....	38,676	24.9	2,026	52.4	500	12.0
1911.....	40,044	25.3	2,131	53.3	559	14.0

The same causative factors for abortions and miscarriages are responsible for stillbirths, added to which is carelessness or ignorance by the attending physician, midwife, or student. Stillbirths and deaths during labor from accidents and injuries can be studied with the deaths occurring during the first week and the first month of life. An analysis of the mortality census of the United States for 1910 shows that 41,431, or eighty per cent., of the 58,000 deaths in the first month are due to premature births, congenital debility, injuries at birth, malformations, and convulsions. From these and similar statistics from other countries one can make but one logical deduction, namely, that that somewhere and by someone there are lacking the necessary precautions for protection of mother and child in maternity. There seem to be many ways in which the municipal governments could aid in such protection by interest and supervision. With the recent advances in medical skill and preventive medicine most of these early deaths should be included in the class of preventable diseases. The

question to consider is, how can the proper municipal authorities help in assuring proper care and nourishment during the period of pregnancy and giving financial aid when needed. How best to educate the mother in seeking early medical competent advice and treatment, assuring skilled medical supervision during labor, careful nursing of mother and baby for at least two weeks, and observation past the first month of convalescence. Investigation of these early deaths in many cases shows a total lack of hygiene during pregnancy and lack of care and skill during and after delivery. There must be a realization that "childbirth" is not merely the period of labor, but includes an equally important period of gestation, as well as three to four weeks of convalescence following the birth of the child.

Obstetrical cases are attended by physicians, midwives, and students. They are attended at home, in hospitals, and private maternities. The accoucheur is morally, and should be legally responsible for the entire time. This responsibility must include both mother and baby from the time the physician or attendant is first consulted until the infant has a start in life. Most women engage the services of someone at least one to two months before labor. A small percentage consult a physician only when labor begins, and in the State of Pennsylvania it has been estimated that five per cent. of the births are unattended by any medical attendant or midwife.

In Pennsylvania there were, in 1911, 210,000 births; thirty-five per cent. of these were attended by the 3,000 midwives in the State; fifteen per cent. by hospitals, dispensaries, and maternities; five per cent. were without attendance, and about forty-five per cent. had physicians. In Philadelphia, during 1911, there were 40,066 births; twenty-five per cent. attended by midwives; 5,825, or 14.5 per cent. attended by hospitals, maternities, and dispensary out door service. As many physicians connected with hospitals, especially teaching institutions, report all births under their name, this factor would reduce to below sixty per cent. the true number of obstetrical cases attended by private physicians.

It is not my intention to discuss the relative efficiency of the different classes of obstetricians. The physician is licensed by the various State medical examining boards after a course of training in more or less reputable medical schools. Such courses of study are supposed to include a practical training in applied obstetrics. The responsibility of supervision by the State is complete when its medical examiners make the requirements to obtain a license to practise medicine in all of its branches sufficiently stringent to exclude those applicants who are incompetent. The remainder of the responsibility is up to the medical colleges.

Fifteen per cent. of the births are reported by hospitals and dispensaries, the greater number of these cases being attended by students. This training is needed to assure a practical course for the students. We should, however, demand that all cases be under the direct supervision of competent instructors. This would not detract from the value of the teaching, but on the contrary, add to the

training. It should be compulsory for the students to visit frequently all expectant women assigned to them for delivery during the last two months of pregnancy and report to instructors the conditions found. They should also be compelled to visit daily, for at least two weeks following labor, giving similar reports on mother and baby.

Sixty-one hospitals and dispensaries in Philadelphia report births, and over eighty per cent. of these births are reported by twelve hospitals that have students; three of the hospitals having students have five trained nurses for the outdoor service. No nurses are employed by hospitals doing obstetrical work at homes and not having students. None of the nurses visit the expectant women previous to the time of labor. It must be evident that these existing conditions materially increase the mortality among infants in the first month, especially from stillbirths, premature births, accidents, and congenital debility.

There can be little dispute that a well regulated maternity hospital is the ideal place for obstetrical cases, especially where the facilities and conditions are wanting in the home. There remains one weak place in this supervision; inability to observe most cases in the last month of pregnancy and the too early discharge of mother and baby. This disadvantage could be met by visiting nurses going to the homes of all women discharged from the maternity wards of a hospital, such visits to continue until the baby and mother have entirely convalesced. Where needed, homes should be supplied for those mothers requiring further care after discharge.

There should be legislation requiring all hospitals and dispensaries conducting an outdoor service to report to the health officer the names and addresses of all expectant women presenting themselves at these institutions for confinement. The city authorities should have trained nurses detailed to visit these prospective mothers during the last month or two of pregnancy, observing any signs of abnormality, instructing them in personal hygiene, e. g., care of the breasts, and preparing the mother for the time of labor. The nurse should continue her visits after the birth of the child to instruct in the care and feeding of the baby. Such precautions would reduce materially the early deaths by averting many accidents and would also assure more breast fed babies. The visiting municipal nurse in such work would be a logical solution of the midwife problem. Foreign mothers, realizing the care and attention given to them, would naturally wean themselves away from the services of careless and uncleanly midwives, and those midwives remaining in practice would be compelled to become more skilled and painstaking in their work.

Private maternities should be abolished by legislation. Such institutions have no excuse for existence. Most cities have ample hospital accommodations, both pay and charity, for obstetrical cases. These private maternities, with but few exceptions, exist only for illegal and illegitimate work. Laws licensing and regulating their practice seem to be of little value. These institutions are difficult to locate and then difficult to supervise. Philadelphia, with laws, rules, and regulations for licensing pri-

vate maternities, has succeeded in granting licenses to twenty-eight in the past five years, eight of these had their licenses revoked, and all others, except five failed to renew their licenses. They have reported 329 births in the past four years. I am confident that many unlicensed maternities exist. Of the eight licensed maternities remaining in 1911, the department revoked the license of one for illegal and irregular work and caused the arrest and conviction of another for trafficking in babies. These maternities deal almost entirely with the illegitimate births and pave the way for disposal of the infants. They have been known to agree to relieve the mother of her baby for a stated sum. If the child does not die in the institution it is placed out to board, and the longer the child lives the less is the profit for the institution.

The death rate among the illegitimate births is large. This could be materially decreased by the public hospitals and maternities encouraging the use of its wards and impressing on the mother that there will be strict professional secrecy, upon which they can rely.

The midwife of late years has been much discredited and abused. In some foreign countries she holds sway, but, with numerous institutions for her training and continuous supervision by the govern-

ment of abolishing midwifery is sheer nonsense. A profession of the proportions of midwifery with sufficient hold on the women to attend to forty to fifty per cent. of the cases, cannot be abolished by the mere enactment of laws. Education of the mothers may in time win the women to intrusting to safer and saner methods their lives and the lives of their offspring; but we must supply the substitute for the midwife and it must be a good one. While waiting for the physician to take his rightful place in obstetrics, every municipality should license every midwife and keep a strict supervision over her. She should not only report all births within a few days after delivery, but should be compelled to report to the health department all cases for which her services are engaged. To these cases should be sent a visiting nurse to observe and report on conditions until mother and infant are fully convalescent. One of the large visiting nurse societies makes the grave mistake of refusing to send a nurse to any case under the care of a midwife. They are thus refusing their services where they are most needed.

In an overzealous desire to furnish breast feeding a number of institutions and physicians scour the cities for wet nurses. Mothers are found to accept the position of wet nursing for children de-

TABLE II.

DEATHS FOR THE REGISTRATION AREA OF THE UNITED STATES FOR THE YEAR 1910, BY DAYS, WEEKS, AND MONTHS.

Cause of death.	Under one day.	One day.	Two days.	Three days.	Four days.	Five days.	Six days.	Under one week.
All causes	14,940	7,595	4,453	3,359	2,400	2,031	1,657	36,351
Cause of death.	Under one week.	Under one month.	First month.	Second month.	Third month.	Fourth month.	Fifth month.	Sixth month.
554,373 All causes	36,351	58,089	15,223	12,023	11,338	9,828	8,078	8,198
4,0995 Diarrhea and enteritis	684	4,477	4,692	4,080	5,080	4,672	4,129	3,797
6,6-1 Communicable diseases	67	713	837	643	590	590	530	620
2,416 Tuberculosis	32	127	152	175	211	212	228	254
10,036 Pneumonia	712	3,157	2,010	1,852	1,596	1,517	1,343	1,459
1,068 Syphilis	228	608	760	247	130	86	58	48
4,089 Convulsions	1,144	2,070	434	319	244	197	177	165
7,501 Malformations	4,380	5,901	502	297	176	149	110	88
20,275 Premature births	16,197	19,498	582	195	100	100	100	100
15,371 Congenital debility	5,943	10,273	2,863	2,118	40	12	11	12
3,725 Injuries at birth	3,430	3,686	28	8	.....	.....	.....	.....

ments, her work is more or less successfully under control. In the United States, although she attends to forty to fifty per cent. of the births, few cities have strict supervision over her. In Philadelphia the midwife attends to twenty-five per cent. of the obstetrical cases, in New York about forty-five per cent., and in Chicago about eighty-five per cent. If she attended only to normal cases of labor a number of midwives would perform their duties well. But labor must include pregnancy and the period of convalescence. How many midwives examine their patients previous to labor? And if they do, how many are trained to observe abnormality? While they are trained and licensed to attend to normal labor, who knows what moment a seeming normal case may become abnormal? Licensing and supervision can accomplish much, but few American cities have such supervision. These laws should be properly constructed, not too highly specialized or so radical that there is little possibility of securing a full enforcement and satisfactory results. Licensing without supervision by the health authorities is worthless. Supervision which includes only an examination of outfits and an occasional inspection of homes accomplishes little. Talk

of abolishing midwifery is sheer nonsense. A profession of the proportions of midwifery with sufficient hold on the women to attend to forty to fifty per cent. of the cases, cannot be abolished by the mere enactment of laws. Education of the mothers may in time win the women to intrusting to safer and saner methods their lives and the lives of their offspring; but we must supply the substitute for the midwife and it must be a good one. While waiting for the physician to take his rightful place in obstetrics, every municipality should license every midwife and keep a strict supervision over her. She should not only report all births within a few days after delivery, but should be compelled to report to the health department all cases for which her services are engaged. To these cases should be sent a visiting nurse to observe and report on conditions until mother and infant are fully convalescent. One of the large visiting nurse societies makes the grave mistake of refusing to send a nurse to any case under the care of a midwife. They are thus refusing their services where they are most needed.

Health departments should have control in licensing and supervising all women engaged as wet nurses. A physical examination should be made of the applicant; a report made on the disposal of her infant and her ability to nurse two children.

The practice of boarding infants is more common than is suspected. It is a problem which has been difficult of solution. When the children are wards of the city, care can be exercised in the homes utilized for this purpose, and by frequent inspections a supervision can be maintained over the care of the infant. These women should receive careful instructions on the care and feeding of infants. Even more care is needed in the infant not a ward of the city who is boarded out. The mortality among these, as well as among the wards, is great.

The mortality in foundling institutions is estimated at fifty per cent. and over. This is due not to neglect, but to inadequate care, too few nurses and attendants, and too little individual attention. Infants may thrive with but little effort at home, but they require much care, attention, and thought in an institution. There should be frequent inspections by health officers of all such institutions. There should also be defined by law the number of infants allowed under the care of one nurse.

Philadelphia has, by act of legislature, the licensing and supervision of all houses boarding three or more infants under the age of three years. This limitation is a grave mistake. Every city should have supervision over every infant boarded. Every woman acting as a foster mother to even one baby should be investigated in her home, and the boarded infant inspected at frequent intervals. In a law with such limitations, while you protect the threes or more, infants are allowed to die by ones and twos.

There is much of interest that could be added to this contribution, but to keep within the time limit I have omitted detailed descriptions and statistics, and offer this brief study to evoke discussion that may aid in solving the problem of reducing the mortality among infants, especially in the first month of life. Not only is the number of these early deaths augmented by lack of care, neglect, and ignorance during the puerperal period, but the presence of a considerable number of the inmates of our institutions can be attributed to those who survived the dangers.

TABLE III.

CLASSIFICATION OF ALL DEATHS UNDER ONE YEAR, IN RESPECT TO
CLASSIFICATION BY MEANS OF DEATHS IN HEALTH MOVEMENTS,
Total deaths under one year, 1900, 154,373.

Class I. Preventable and partly influenced by present health work	
Diphtheria and enteritis	41,695
Dysentery and stomach	2,874
Measles	16,366
Tuberculosis	2,930
Contagious diseases	6,521
Total	75,626
Class II. Preventable and not influenced by present health work	
Preventable disease	25,275
Contagious disease	15,371
Injuries and death	3,725
Mental diseases	7,501
Contagious diseases	4,89
SMP	1,668
Total	53,091
Class III. Diseases not preventable of acute diseases' total 22,292	

as sharing little in the intellectual interests of their husbands and being kept in retirement, things were quite different. Cornelius Nepos, in the preface to that little book which most of us read first in Latin, tells us very clearly how completely the Roman women shared the lives of their husbands. He says: "Many things that among the Greeks are considered improper and unfitting for women are permitted by our customs. Is there by chance a Roman who is ashamed to take his wife to a dinner away from home? Does it happen that the mistress of the house of any family does not enter the ante-rooms frequented by strangers and show herself among them?"

As a matter of fact we know that the Roman women shared in all their husband's interests, and modern historians give us a picture of the women of Rome which shows us that while the Roman men made money and accumulated large fortunes, as ours do, in land speculation, by cornering food stuffs, by speculation in stocks and bonds, by political corruption, and the indirect taxation method, somewhat as our own tariff works, the women spent the money on handsome houses and decorations, villas, collections of bric-à-brac, entertaining artists, having their portraits painted, and in club life in the midst of which that combination of literature and fashion which has characterized society ever since it has come into being. They wrote novels and poetry, painted some, did some sculpture, and fussed generally about aesthetics. Unfortunately, after the coming of wealth they took nothing any more seriously than society people do now.

We know that some of the women of Rome had been interested in medicine in a practical way though the distinguished physicians in Rome came mainly from Greece. During the early Christian centuries, however, we have the names of a number of women who practised medicine, and there seems not only to have been no prejudice against them, but marked encouragement. It was the women of those days who organized city hospitals in our modern sense of the word and cared effectively for the ailing poor.

When next there is an awakening of civilization and culture and science because of intimate touch with Greek ideas, we find a distinct position obtained by women in the movement upward. It took place down in the southern part of Italy where Grecian influence was strongest, for while we may not entirely agree with the great English thinker who said that whatever moves in this world is Greek in origin, Roman and Italian movements have usually been due to Greek initiative. Down at Salerno when the first medical school of modern times came into existence, the department of women's diseases was handed over to women, and we have the names of several distinguished professors who thought and wrote textbooks at the school. One of them, Trotula, became known all over Europe. This phase of feminine education is all the more striking because the school at Salerno was, if not founded by the Benedictines, largely under their influence, and it was these wise old monks who seem to have realized what an excellent place there was for women in medicine. We note

a number of licences to practise at this time, however, and there was no limitation of the extent of their practice.

The incident is not surprising if we recall that a number of the rules of the Benedictine institute dwelt on the necessity for certain members of the monasteries and convents being particularly skilled in medicine in order to care both for the members of the community and for the strangers who might come to them. The Benedictine nuns had been famous in the preceding centuries for their knowledge of medicine, and just about the height of the fame of Salerno as a medical school the Abbess Hildegard in Germany gathered together a number of the medical traditions of the Benedictine nunneries and published them in a book that has been declared the best contribution to medicine of the twelfth century.

It would be easy to think that after all feminine education in medicine must have meant very little at this time, for the generation did not know much medicine. Anyone who thinks so, however, has the privilege of another thought after looking into the subject. That thought should come after due information. The surgery of Salerno particularly—and it is in this that most of us would be sure that the old times was very backward—is an unending marvel. The great Four Masters of Salerno opened up a wonderful epoch in surgery. Before the end of it the textbooks describe operations on the skull for tumor and abscess, on the thorax for fluid, on the abdomen for wounds of the intestines, they were treating hernias in the exaggerated Trendelenburg position, they had three methods of anesthesia, one of them by inhalation, and were using strong wine as an antiseptic and boasting of getting union by first intention.

After the tradition at Salerno it is not surprising to find that in the northern universities of Italy the same custom of permitting women to study in the various departments was continued. One of the prosecutors to Mondino, the Father of Modern Dissection as he is often called, was a young woman named Alessandra Giliani. According to the chronicles it is to her that we owe the first attempt to inject anatomical preparations in order to preserve them, and she colored the tissues variously, especially veins and arteries, in order that such dissection preparations might be studied for long periods without the necessity of doing the deterrent work of dissection. Curiously enough it is to another woman, Madame Manzolini, working at Bologna also, that we owe the first introduction of wax models in natural colors for anatomical study. The men would have apparently been quite content to keep on dissecting and dissecting in spite of the danger and disagreeable features; especially when their knowledge of the art of preservation was so limited, but the women tried to ameliorate such conditions and humanize the study of anatomy and facilitate its teaching.

At the Italian universities the women studied everything else as well as medicine, but the custom did not obtain in the west, apparently because very early in the history of the western universities, Paris, whose influence was to mean so much for

all the others, had the Abelard and Heloise incident to disturb normal progress. So little sometimes does it take to change the face of history.

There came a magnificent development of hospitals at this time that has left some monuments as beautiful and as well constructed as the great churches and municipal buildings of that time. Hospital development has at all times depended on the women, and whenever they have not occupied positions of administrative influence hospitals have seriously declined. Many people in our time seem inclined to think that this is the first epoch in the world's history when anything has been accomplished for the building of hospitals beautifully, suitably, and appropriately to their important function, but there once more a little learning is a dangerous thing. Josh Billings once said: "It is not so much the ignorance of mankind that makes them ridiculous as the knowing so many things that ain't so." There were fine hospitals in the olden times under feminine direction; these were largely taken over by government and their administration given to men. Then began a history of decadence. It culminated at the end of the eighteenth and the beginning of the nineteenth century. Read Jacobson on hospitals or our own Miss Nutting and Miss Dock in *The History of Nursing* and realize that the lowest period in the history of hospitals came during the time from 1750 to 1850. Only women can properly care for the ailing without exploiting them or taking advantage of them. Whenever women have been shut out of this great phase of humanitarian work, it has been a sad chapter in the story of what that generation has been able to accomplish.

I have been rather interested in recent years in tracing how gradual improvement in conditions in our hospitals in New York came about. We had in the first half of the nineteenth century some of the worst hospital conditions almost that it is possible to imagine. We owe our improvements in them all practically to the interest and enterprise of women. Above all we owe to them the introduction of the trained nurse. Apparently we men would have gone on thinking there was no way out of the old abuses and that things would have to be as they had been, but the women saw more clearly. We owe much to the Ladies' Aid Society of the Board of Charities, and it was their influence that gradually brought about hospital reform. Our nurses came from the "ten day women" as they were called, the drunk and disorderly, and when it was proposed to introduce trained nurses, almost to a man the physicians opposed it. We now know how shortsighted they were, but fortunately the women had influence enough to attain their purpose, and we all know the difference. This is the lesson of history everywhere. In what relates to the ailing and the helpless not only womanly care, but womanly management, womanly administrative ability and attention to detail are all important. In the solving of our social problems she must be given, not a subordinate, but a coordinate place.

The broadening of our information in recent years makes us realize how little of novel there is and how often our supposed progress merely means

the recurrence of previous modes of thought. Even your feminine medical education is just one of a series of phases of similar developments that have taken place in the past. The question for you, then, must be to make this phase as significant as possible in the world's history. Flinders Petrie, the great English Egyptologist, has suggested that there are seven great phases of culture in humanity in which men reached a climax of achievement and intellectual power and then decadence began. In each of these phases we are able to trace a significant development of feminine influence. We may wonder why once such achievement has come in it should ever go out. That is indeed a difficult problem to solve, but there seems to me to be a rather interesting reflection on it, even though it may not be an answer. It is biological and therefore will have particular interests for you.

As women become interested in the intellectual life, they have been prone to withdraw more and more from the simple, natural, womanly duties which they must assume, or they will not be fulfilled. Only women can be mothers, and unless they are mothers the race does not go on. Whenever women have become much interested in the intellectual life first, there has developed a sad disinclination to matrimony. Apparently woman only needs to know man well not to think much of him. The old English poet said, however: "Where ignorance is bliss, 'tis folly to be wise" and possibly that may have its application in this case. Then the intellectual women who marry, have ever smaller and smaller families, until finally there is a beginning disappearance of their kind.

In a word, the intellectual woman gradually disappears, leaving her simpler, more ignorant, and merely natural sister to survive and propagate the race until a certain number more of the exceptional intellectuals accumulate, when there is another phase of feminine education, and of feminine intellectual achievement. That is what has happened in the past. Let us hope that it will not happen in our time, that we shall learn the lesson, that real progress is never accomplished far from Nature. In the old fable, Hercules was not able to conquer Antæus, the son of the earth, because whenever Antæus was crushed to earth he derived new strength and vigor from the bosom of his mother. Hercules had to lift him from contact with earth then and crush him to death in his arms. The old story has the obvious meaning that whenever men get far from the simple things of life, the earth that they are sprung from, their powers of resistance and accomplishment are sadly impaired.

My own knowledge of history is limited, but what has interested me particularly is the social life of nations, and it has always seemed to me that that very curious phenomenon, the rise, gradual progress, culmination, and then inevitable decadence of national life that sums up the history of every nation, is largely the result of this biological factor which I speak of. History is said to be a succession of the sounds of sabots going up stairs, and of slippers coming down. The great families decay, the self made men, the ancestors of the future, are climbing upward. In the meantime, however, what happens at the top is that people get supremely

interested in themselves, their own little narrow lives, refuse to think that they are bound by any obligations toward others, push away from them all the ordinary obligations of humanity, and inevitable decay ensues. Rome was not conquered by the barbarians, but the Romans were gradually displaced by those whom they had despised. In Augustus's time there were probably 600,000 free men and women in the city and over 1,000,000 slaves. While their masters and mistresses lived their selfish lives, gradually the slaves became freedmen, and their sons and daughters replaced the masters and mistresses of the preceding generation whose line had gradually disappeared. This is what we now are facing, and it is one of the most important problems that you will find for solution in your work.

You are going to have much to do with moulding the opinions of the women of the generation that you come in contact with. You will find that above all at the present time we are foolishly complacent with the thought of what we are accomplishing, while all the time the really great accomplishments of mankind, literature, poetry, and the drama, painting, sculpture, architecture, and the great laws and constitutions of men, and all the great philosophical systems are far behind us. Will you realize then, even from the lessons of our own scanty history of medicine, that in this we are only passing through another phase of progress in humanity and that it is well for us to take precious lessons of the past and learn from them how we shall make our own generation enduringly efficient, above all, that your influence shall be cast for making life, if possible, simpler and more natural. For our present tendencies are bringing home to people that happiness lies that way. We are in a mad rush for pleasures now, but pleasures are complex things, often followed by remorse, while joys are simple and have no after bite. What our generation needs is more joy not more pleasure, and joy comes from work well done and from the accomplishment of the simple duties involving forgetfulness of self, thoughtfulness for others, and life lived not for itself, but for what can be effected.

You are going out into a profession that demands much of its members. Your success in it will depend on how seriously you take your professional duties. While for many there is a competence in it, it always amuses me when the motive for entering the medical profession is the making of money. Remember, that we all owe it to our profession, not only that we shall make a living by it, but that we shall make medicine, that is, that the next generation will be able to treat, if not disease, at least suffering human beings better because we have lived. Above all, in the difficult social problems of our time, we physicians must realize how much our influence can mean for preventing the worst abuses and securing such reforms as will make life happier for all. I have the feeling that if we physicians had been more careful of our duty in this respect, unfortunate laws with regard to dangerous occupations, child and woman labor, employer's liability, and the fellow servant doctrine might have been prevented from working so much harm. Unfortunately men do not recognize their social duties so well as women, and therefore I have always wel-

comed the coming into the medical profession of that heaven of tender humanity that women represent.

Men are prone to settle down into a rather fatalistic mood with regard to human suffering and even a high death rate around them does not disturb them much. Apparently by nature almost we are prone to think human suffering inevitable to a great extent, and are likely to dismiss the consideration of it with the thought that there are so many other things to do that we cannot be bothered with the correction of the more or less necessary evils involved in human affairs. Women, however, when they live up to the best that is in their natures, look at human suffering, not in the mass, but in a very personal way as regards themselves, and in an individual way as regards the sufferer. It is they who have always been leaders, therefore in the reforms that have lessened and prevented human suffering. It is what we might well expect of them and at many times in the world's history the expectation has been nobly fulfilled.

There are some people who seem inclined to think that mankind has less of suffering now, and some even go so far as to say that probably at no time were so many of the human race so happy as at present. This is an extremely narrow view founded entirely on ignorance. We are decreasing the death rate, and therefore it is often presumed that we are decreasing the amount of disease. Our death rate, however, is decreasing because we are saving the lives of little children. Between the ages of thirty and fifty years there are nearly one sixth more deaths than a generation ago, and these deaths are from the chronic diseases like tuberculosis, and the degenerative diseases like heart and kidney disease. Instead of decreasing the amount of care that humanity needs, we have increased it. We have kept alive those whom Nature used to eliminate, but only to have them die in their maturity when the poignancy of human suffering is worst. Our social life with its great inequalities, yet close contact of all classes, has added greatly to human suffering. Industrial conditions have done much to make a great many people dependent on their environment rather than on themselves. The old famines and epidemics do not occur in civilized countries, but panics and strikes and local conditions, floods, earthquakes, and the like make for human suffering. Great city life is full of possibilities of suffering, and when we realize that immense numbers are compelled to live on wages with which they cannot possibly exist decently, that is, becomingly as human beings, the problem of human suffering is made to come home to us. Probably there never was a time when so many intellectually developed people had to submit to misfortune and trial. We have made the possibilities of suffering greater by universal education, but not reduced the actuality.

These are the problems which have to be solved in the next quarter of a century here in America, or there may be so much of dissatisfaction and discontent as will lead to serious political disturbances. It is to the trained women, whose hearts as well as whose minds are interested in these problems of humanity, that we look for the highest help in

the solution of these difficult questions. The classic authors talk of those who think deeply as thinking in their hearts, and when we review the history of humanitarian efforts and realize how whenever woman has been excluded from, or has not had her full share of coordinate responsibility, and not merely subordinate exertion in the care of humanity, that care has failed of its purpose, we realize better what the meaning of the expression is.

I welcome you into the medical profession, confident not only that there is a place for you, but that there are gaps in our work for humanity that only you can fill. May you do honor to your venerable institution, to the faculty that has trained you, and above all to the profession into which you now enter and whose magnificent purposes you can help nobly to accomplish.

110 WEST SEVENTY-FOURTH STREET.

PROGRESSIVE DEAFNESS.*

Systemic Factors in the Etiology.

By J. A. STUCKY, M. D.,
Lexington, Ky.

It is known that in every special branch of medicine there is some pathological condition or impaired function in the line of that special department which is a reproach to the medical scientist, because the specific remedy for its relief has not been found. This very truth stimulates us to greater efforts in research work and is bringing our science and art more nearly to the standard of accuracy.

No department of medicine has made more rapid advancement than otology, but the otologist will never be satisfied until the cause and relief of progressive deafness, resulting from nonexudative otitis media and otosclerosis, are found. "The accusation of failure or nonsuccess can no oftener be justly brought against the otologist than against most of his colleagues; and such measures of truth as it contains is largely offset by recognition of the fact that more than half of our cases of these diseases are chronic and are already beyond the possibility of complete restoration to normal when they first come to us" (Randall).

Assuming that we have correctly and accurately diagnosed the case as one of nonexudative otitis media, without either objective or subjective symptoms of suppuration, with the history of variable degrees of deafness fluctuating in character, that the so called *paracusis willisiana* exists with the usual anomalies of hearing for voice and musical tones; with the tinnitus and slight vertigo aggravated by anything that accelerates the circulation or vasomotor disturbance in the labyrinth from psychic causes; with the objective symptoms revealing nothing of a definite nature in the drum membrane by which we could determine the degree of deafness, this membrane appears slightly changed or abnormal, as indicated by retraction or atrophy, opacity, or the presence of calcareous deposits; and the condition of the Eustachian tube revealing no

abnormality or pathological condition that would account for the impaired hearing; with both the subjective and objective symptoms indicating that the pathological changes which have so impaired the hearing function, have occurred slowly with increasing deafness and tinnitus; bone conduction by the Webber test is increased, except in elderly people and in these we frequently find it diminished. Cases like these give a history of originating imperceptibly, and, being progressive in nature, with usually no improvement after successive inflations, we conclude that, in addition to the exudative condition in the middle ear cavity, there has probably resulted ankylosis of the ossicular joints and the fenestral structures. These patients almost invariably tell you that anything that lowers their vitality or any acute nasopharyngeal irritation or inflammation increases the deafness. Cases like these, perhaps, prove more than any other ear trouble the correctness of the assertion I have made frequently in the past, that these diseases are a local manifestation of a systemic condition. This is more aptly and correctly stated by Braden Kyle when he says "any lesion in the heart, lungs, pleura, liver, or spleen, or in the intestinal tract, or any autoinfection or autointoxication; the chemical change in the secretion may be the local irritation in these mucous membranes. Since this membrane is extremely sensitive both from terminal nerve filaments and from its lymphatics, it thus becomes the barometer of the general systemic condition and the observing practitioner must determine the underlying cause."

We can no longer satisfy ourselves by accounting for the etiology of this condition in early life as being the result of the rapid formation of the mucous membrane in the middle ear cavity soon after birth, which may probably induce congestion in the tympanum which leads to adhesions as the result of inflammatory irritation; nor in old age, to the fact that the auditory nerve impairment is due to the flaccid, soft walls of the cartilaginous Eustachian tube as well as to the feeble state of the tube muscles which may cause disease by disturbing the ventilation of the middle ear; nor to so called cases of strumous condition or tuberculous infection which results in destructive softening of the tympanic membrane which later lead to adhesions; nor to syphilis by causing ulceration, condylomata, or gumma; nor to exanthematous or zymotic diseases through the continuity of the skin and mucous membrane; nor to acute or chronic nephritis, rheumatism, gout, or anemia. But the exact nature of the causative relation is not clear. The question arises why in one person without any pathological condition in the nasopharyngeal cavities there should be exudative otitis media with deafness, and not in another. Why is there a tuberculous, syphilitic, rheumatic, nephritic, anemic disturbance in one case more than in another? We might answer these questions by the statement that in these particular cases the point of least resistance is in the ear, hence its involvement more there than any other part of the body. We might console and even flatter ourselves that in cases due to organic diseases of the heart, lungs, or the larger vessels that the cause is due to stasis of the venous circulation in the head, or by producing undue arterial

tension may lead to hyperemia of the mucous membrane of the nose, throat and ear, resulting in tissue changes. Then the question arises, what produces the organic diseases of the heart or lungs? Does the cause of these diseases arise in the body or without? Judging the average otologist by myself, most of my efforts have been in treating and relieving the symptoms and getting rid of the effects without going deeper into the fundamental or primary cause of the disease. I sometimes wonder if there is danger of our becoming scientific faddists and of losing interest in such cases as cannot be relieved by surgical or topical treatment.

Considering now the second division of my topic, otosclerosis, notwithstanding the advance made in our knowledge of this disease by Siebenmann, Bezold, Denker, Politzer, and others, this remains the most embarrassing and most hopeless of all diseases of the ear, of a noninfective nature. We know that primarily this disease affects the bony capsule of the labyrinth, especially that part bordering on the fenestra ovalis; that more rarely it implicates the fenestra rotunda, the promontory, or some part of the cochlea. In these regions the osseous tissues of the bony capsule become vascular and exhibit giant cells and osteoblasts. This increased activity leads to outgrowth of spongy tissue, the annular ligament and footpiece of the stapes is invaded and ultimately firmly ankylosed by the newly formed bone. The function of the stapes is interfered with or abolished, and deafness, more or less profound, is the consequence. The disease usually affects both ears, is more common among women, and most frequent in middle life, and the influence of heredity is strongly marked.

The etiology is still obscure, but the most important causes are syphilis, gout, arteriosclerosis, uric acid diathesis, pelvic diseases, and the influence of pregnancy.

The subjective symptoms differ very little from those due to nonexudative otitis media, except in intensity. Giddiness or vertigo occurs less frequently, and seldom in aggravated form. The objective symptoms show practically no deviation from the normal drum membrane unless complicated by nonexudative otitis media. Tests by tuning forks give the Bezold symptom complex of (a) increased bone conduction, (b) negative Rinne, (c) elevation for lower tone limit.

Inasmuch as it is admitted that there is no specific cause for nonexudative otitis media and otosclerosis which invariably result in more or less progressive deafness, and which thus far have yielded to no treatment discovered by otologists, and since all the evidence gained by observation and pathological examinations indicate that the cause comes from within the body, and is frequently secondary to some systemic condition, it behooves us to be more careful in examining every case that presents itself to us for treatment, to look more thoroughly into the body complex and systemic condition, and with the various accurate aids furnished by the laboratory and suggestions from the specialist in internal medicine, ascertain and remove everything that interferes with normal metabolism.

I have collected a series of cases, typical of the two diseases described, which I have been able to

keep under observation from five to fifteen years, and to direct a line of treatment and method of living, which has given results that justify me in the conclusion that it is the systemic rather than the local factor in the causative relation of these conditions with which we must deal in order to bring about favorable results.

In eleven cases, nine in males and two in females, of nonexudative otitis media such as I have described, the youngest patient being twenty-three years of age, the eldest sixty-eight years of age, in whom the hearing was from twenty-five to fifty per cent. below normal, and the gradual diminution of hearing had been noticed from one to ten years before consulting me, the results of the treatment have been an improvement in hearing varying from ten to thirty per cent., and this improvement has continued without change for several years, with no return of the deafness except for an occasional exacerbation due to overindulgence in eating and drinking for a period of days or weeks—but a return to prescribed remedies, routine, and diet, speedily improves the hearing. No local treatment was indicated except in acute exacerbation, hence none was given in this series.

In seven cases of otosclerosis, three in males and four in females, in five of whom the diagnosis was confirmed by several of our leading otologists, an unfavorable prognosis was given, especially in five, because of the hereditary history. The ages ranged from twenty-two to forty-seven years, in which the hearing was from ten to thirty-five per cent. below normal, there has been an improvement from fifteen to twenty per cent. in three patients and from two to five per cent. in the other four, who not only had the greatest degree of deafness, but who were the most advanced in age.

In these two series of cases, the diagnosis was positive, having been made after several careful examinations and tests in periods of time varying from one to three weeks, and was confirmed by consulting otologists. In every one in this series, an unfavorable prognosis was given.

It is true "that one swallow does not make a summer," neither does one case prove a theory, but the results in this series of unfavorable cases and of variable satisfactory results in many others which were similar to them, justify my calling attention to them with some degree of encouragement because of the results obtained through systemic treatment alone.

In reply to the query, what are the systemic factors in the causation of progressive deafness, I know of no specific factors; probably there are several in each case.

The majority of cases of these diseases seen by me, give evidence of disturbance and faulty metabolism indicated by the presence of indican or excess of phosphates and urates in the urine, or there are present indications for history of previous attacks of rheumatism. By far the larger number presented these indications. The next systemic condition most frequently observed was increased blood pressure or arteriosclerosis, and I am inclined to believe that when we have solved the solution of the problem as to the cause and cure of rheumatism and arteriosclerosis, we shall have solved also the prob-

lem of the prevention and cure of the nonexudative otitis media and otosclerosis.

The systemic factor causative of these diseases is something generated in the body from the food and drink, and the product of the result of the imperfect digestion, assimilation, and elimination, is taken up by the blood current and lymphatics, and at the point within the body of the least resistance it becomes a source of irritation, which later results in inflammation, with the usual sequelæ. These conclusions are reached after having made repeated and careful uranalysis, and noting the blood pressure in all my cases.

As stated in a previous paper, I do not believe that every functional disease has a structural derangement to account for it, nor that every mechanism is sufficient for function simply because it is a mechanism. Each must have its special power for successful operation, and the source of that power is in the blood. That the blood is poisoned through the absorption of toxic material from the intestinal canal more frequently than from any other source, I think will not be questioned. Food, drugs, and toxins, once in the circulation, select the nervous functions which they specifically arrange or derange, and some functional changes produce organic changes, due to possession of chemical affinities: continued use of alcohol producing structural changes in the kidney and sclerotic changes in nerve and liver tissue, and why may not the same structural changes occur in the middle ear and labyrinth from the same or similar causes? I believe that future investigations will prove conclusively that they do. Functional diseases are usually intermittent, but a broken or destroyed nerve fibre stays broken. Gouty poisons must accumulate a long while before the attack of gout. There may be a sudden attack of uremia, but the blood has contained urea for some time before.

Toxines, owing to a disturbed body chemistry, are manufactured daily in the intestinal canal, and if allowed to remain in the system, the result is a protest from the irritated nerve and poisoned cells manifested in rheumatic pains, deposits of exudates, and various other evidences of toxemia of systemic origin.

The general law of nervous organization is that a repeated or continuous excitation of the nerve centre will in time anatomically and physiologically modify that centre. Especially is this true in the eye, in which vision is impaired or completely destroyed by toxins of systemic origin. If this law is true in one instance, why not in another?

As otologists we must recognize that disease is the outcome of modern civilization, and due to ignorance or indifference. That the average person does not know what, how, or when to eat as he should; that many of our diseases are due to lowered vitality and diminished powers of resistance as a result of the ingestion of excessive quantities and injudicious qualities of food and drink.

The amount of steam or power that we get out of a boiler depends on the kind of fuel that we feed it. This is no less true of the human machine. In the climate in which I live and with the people with whom I have to deal, I find that in the average person red meats and cane sugar generate a

toxine which more frequently interferes with metabolism than any other article of food. Especially is this true when these two combined are indulged in freely. However, the laboratory findings and the observation of the internist who assists me often find that it is the amylaceous food that is detrimental more than any other. The point I desire to emphasize is that the cause of these conditions is due to faulty dietetics and unhygienic living, and whatever it be, our science has progressed to such a degree of accuracy that the cause can be ascertained. Hygienic and systemic treatment in non-exudative otitis media and otosclerosis must be regarded as of the greatest importance.

This means that we should not know less of otology, but more of the physiological, hygienic and dietetic departments of the science of medicine. There are pathological conditions that surgical means alone will remove, but these two diseases are exceptions. We know that drugs, topical applications, mechanical vibrations, and other methods of treatment do not cure disease, but simply remove the obstruction to physiological function. The complete restoration must come through the blood, aided by the nervous, lymphatic, and respiratory systems—and these are dependent entirely on the dietetic and hygienic life that we live.

In the treatment I have adopted where favorable results were obtained, the evidence of this was from the very nature of the case slow in being noticed. We must ascertain the possible cause of the faulty metabolism, whether digestive, assimilative, or eliminative, then remove this, restrict the diet, and exercise patient and persistent use of reconstructive and alterative remedies for many weeks and months. Glandular extracts, such as the thyroid and thymus, aid in the stimulation and regulation of the internal secretion.

As yet there are not many patients who are willing to abide by the strict régime for sufficient length of time to get results, preferring rather to risk the effects of the disease than to forego the habit and pleasure obtained in excessive and injudicious eating and drinking and strenuous living.

ADEQUATE HOSPITAL CONTROL.

By BERTRAM H. WATERS, M. A., M. D.
New York.

Attending Physician, Riverside Hospital, Chief, Department of Health Tuberculosis Clinics.

The provision of sanatoria for those tuberculosis invalids for whom cure, or considerable improvement, may reasonably be expected, is, or promises soon to be, adequate. Everywhere the greatest interest and activity are manifest in this phase of our antituberculosis problem, while the proper care of advanced stages of the disease receives scant attention. That this should be so is perhaps natural. The sanatorium accomplishes brilliant results, it presents an opportunity for recovery, the desideratum of physician and patient, while both feel that to those with well advanced disease the hospital has

*Read before the "Sanatorium" Section of the National Association for the Study and Prevention of Tuberculosis, at the Eighth Annual Meeting at Washington, D. C., May 30, 31, 1912.

little to offer. It is unfortunate that this attitude and the popular interest in sanatoria have led to neglect of this type of patient, and that the great importance, from the standpoint of prevention and sanitary control, of caring for these sources of infection is not more fully realized.

All our efforts for prevention, especially those of the last decade, have, with ever increasing assurance, demonstrated the urgent necessity for proper management of "open" stages of the disease, and segregation, for such patients as are dependent, is not only indicated as the only sure and safe measure, but also is meeting with less sentimental opposition. In our large cities, where the enforcement of such a measure is most needed, lack of adequate hospital accommodation for these patients has retarded the development of public sentiment in its favor, and made impossible its accomplishment even in a minority of instances. There are, as a rule, too few beds to accommodate those who would willingly accept hospital care. New York city has at present 2,635, to which during 1911 there were 16,901 admissions, representing at least 12,500 different patients. Of these 5,705 were homeless and fifty per cent. of all applicants could be placed only upon a waiting list. It is apparent then that for these patients with advanced disease, of whom the majority, at least, require and would gladly accept hospital care, no immediate or adequate provision can be made. Even when the hospitals contemplated, or in course of construction are available, there will still remain a probable shortage of 2,500 to 3,000 beds. In other words, there will be in their homes, for the most part already unsanitary enough, this number of tuberculous persons who have or will have bacilliferous sputum and are therefore sources of infection to those about them. While popular education is accomplishing much in inducing such consumptives to take proper precautions to prevent this, we cannot, and probably never will entirely succeed in making them as a class careful and therefore safe. Failure to provide adequately for them seems to be false economy and needlessly to defer the realization of our hopes for the eradication of the disease.

That New York is not unique in this respect is shown by the following table:

	Hospital beds.	Total tuber- culosis deaths.*
New York ¹	2,635	10,127
Chicago ²	695	3,908
Philadelphia ²	664	3,371
Baltimore ²	260	1,404
Boston ²	585	1,379
St. Louis ²	242	1,275

It is interesting to note here that to a very recent questionnaire on this subject the health officers of Chicago and Philadelphia replied that they had no data as to the number of hospital beds for the advanced stages of pulmonary tuberculosis, in their respective cities.

For adequate hospital control there are required, not only sufficient hospital accommodation, but also authority for compulsory removal. All cities and towns which, by sanitary ordinance of the proper

health officers, have declared tuberculosis to be a reportable and communicable disease, have, or should have this authority and, under proper conditions, should exercise it. There are many patients who should be in a hospital, who obstinately refuse to enter thereto, and who frequently are notoriously indifferent in the observance of precautions and to the welfare of those about them, in their own unsanitary homes or elsewhere. These should be compelled, by force if necessary, to enter a hospital and should be detained there, permanently if possible or certainly until there is good evidence that they are themselves amenable to sanitary regulations, and that they can be properly cared for by those upon whom they are dependent. This procedure was adopted by the Division of Communicable Diseases of the Department of Health of New York in 1905, and no question as to its propriety or legality has been raised. Frequently, however, there has been no room even for this class of patients, in the department's hospital, Riverside, where only, under the present system, they may legally be detained. Whenever this authority has been exercised, removal has been justified by the following conditions, which inspection has verified:

1. Tubercle bacilli present in the sputum at a recent (six weeks) examination.
2. Lack of observance of sanitary precautions.
3. Unsanitary condition of the home.
4. Helplessness, or dependency upon the family, of the patient.
5. Presence of others in the home, especially children, exposed to infection.

These requirements, however, are not sufficiently stringent, are not applicable to many patients who should be under control, and rest upon the unscientific assumption that a patient with nonbacilliferous sputum is negligible as a source of infection. It is highly probable that the absence of bacilli is frequently the result of a too hasty and incomplete search, and that the newer and more refined methods of examination will demonstrate their presence in a great number of instances, and it is certain that the "closed" lesion may at any moment become an "open" one. Moreover, the experience of social service and charity workers, whose aid is an indispensable factor in the tuberculosis problem, testifies to the frequency with which the financial burden of the patient at home demands the labor of the wife or children, or, even with this, forces the family to seek charitable aid. When there is added to this miserable situation, drunkenness of the patient, or the violence and drunkenness of the husband when the wife is the patient, it becomes intolerable. It is contrary to all economical and philanthropical standards that, under such circumstances, the patient should be left in the home and that either public or private funds should be employed to maintain it.

The most advanced legislation in regard to this matter was recently enacted by the State of New Jersey. It provides that, within six months from April 1, 1912, all counties shall make provision in special institutions for the care of tuberculous persons. It further provides that a subsidy of three dollars a week shall be granted each county for each of its dependent residents so maintained. This legislation is further so adequate in the extent of author-

¹Bulletin 100, Bureau of the Census, Mortality Statistics for 1910.

²Ascertained by a questionnaire sent out this year by the Committee on the Prevention of Tuberculosis, of the Charity Organization Society.

³Estimation made by the National Association for the Study and Prevention of Tuberculosis, for 1911.

ity conferred upon State and municipal health officers as to justify quotation of the following paragraphs:

9. It shall be the duty of the State Board of Health from time to time to make rules and regulations for the care of persons suffering with tuberculosis, and for the prevention and spread of that disease; these rules shall be published and copies thereof sent to each board of health and to each practising physician within the State, on or before the first day of April each year, and to such other persons or societies as may request the same, and in such quantities as desired. The duty of enforcing said rules and regulations and seeing that they are enforced shall be upon the State Board of Health, for which purpose the State Board of Health may issue orders to local boards of health and practising physicians.

10. It shall also be the duty of every local board of health to enforce said rules and regulations.

11. If any person fails to obey any of the said rules or regulations, the offender may be committed to the county hospital by any judge of the Court of Common Pleas, upon proof of service upon the offender of said rules and regulations, and proof of violation thereafter. The court may also make such order for the payment for care and treatment as may be proper. After commitment such person may be discharged by the said court at any time when said court thinks it proper so to do.

12. Any person so committed to such county hospital who fails to remain there, or who neglects or refuses to obey the rules and regulations of that institution, may, when in the judgment of the superintendent it is necessary, be isolated or separated from other persons and restrained from leaving the institution.

The only other State which provides for compulsory segregation of tuberculosis is Maryland. The only city in the country which has adopted an ordinance providing for compulsory removal is San Francisco. A few others, like New York, exercise this power under certain provisions of their sanitary codes, but none has a special ordinance on the subject.

Adequate hospital control of advanced or "open" stages of pulmonary tuberculosis cannot be attained without:

1. Sufficient hospital accommodation.
2. The enactment, if necessary, of special legislation conferring upon State and municipal health officers authority for compulsory removal and detention.
3. The exercise of this authority whenever:
 - a. There is refusal to comply with sanitary regulations.
 - b. Unsanitary home conditions exist.
 - c. The patient is of vicious character and habits.
 - d. Others, especially children, are exposed to infection.
 - e. The patient, or the family, are public charges or dependent upon charitable aid.

Provided that these conditions have been verified by inspection, and, if tubercle bacilli are absent from the sputum, the diagnosis has been confirmed by two competent examiners.

4. The permanent detention of these patients in a hospital.

5. An energetic attempt, by every one interested in public health, to persuade all patients of this class to enter hospitals, and to educate them as to the value of this action as a preventive measure for those in their homes.

The first of these conditions, as stated, purposely leaves open to discussion the question of the num-

ber of beds which may be considered sufficient. This must depend largely upon the demand and upon the local conditions. There are those who maintain that, by reason of the moral and educational influences brought to bear upon patients, while in the hospital, as well as from the prospect that they may be enabled thereby to resume their places as economic factors in their community, it is better to so maintain, for example, three such patients for two months each than one for six months. In other words, there are some advantages in the drifting of such patients in and out of the hospital and their homes. When we consider that we must provide for a class of persons who rarely obtain permanent improvement, who usually are dependent, and who frequently are homeless and depraved, there can be no question as to the necessity of adequately providing for them permanently. Inasmuch as universal segregation, ideal though it may be, is as yet impracticable, there must also be provided accommodation for the transient care of a considerable number of a morally better, and perhaps more hopeful class, who do improve and who have a home and relatives or friends willing and able to care for them properly. Such patients, in many instances, might be sent, after their hospital course, to a sanatorium with benefit to themselves and with profit to the community.

The authority to exercise control over patients with advanced disease, who are dependent, and to remove them to a hospital, if necessary, should not rest alone upon general sanitary ordinances, but should be enacted by special legislation and made legally valid. This legislation should be broad enough to enable the proper health officers to act, without hindrance, according to their discretion.

The conditions justifying compulsory removal, as stated, do not seem to be debatable, except possibly that of dependency. It may be suggested that maintenance at home, with home treatment, by charitable aid is justifiable in many instances. When neither of the first three conditions is present, this may possibly be done without danger, but it will always be at an economic loss, and with a diversion of funds from others who might derive greater and more permanent benefit from them.

Since failure to demonstrate the presence of tubercle bacilli in the sputum, may make the diagnosis of pulmonary tuberculosis honestly questionable in certain types of the disease, or may give an opportunity for dishonest or interested denial of the diagnosis, the authority of health officers should be interpreted to be decisive and final in such instances, when two of their examiners who are competent to decide, agree in their findings. Compulsory removal without the facilities or authority for detention is useless.

It is gratifying to those unselfishly interested in public health matters, that patients, however invalided, unable to provide themselves with proper care and comfort in their homes, are becoming less averse to entering hospitals. This attitude should be encouraged, especially for the tuberculous, and the most effective means of allaying their apprehension, of really giving them better care and of encouraging them to remain in it, will be the provision even at a cost above that of the present, of

modern wards, good food, and efficient, sympathetic attendance. Too often we are shortsighted in our ideas of hospital economy and indifferent in the selection of our hospital attendants.

There are few persons, except those who are depraved and vicious, who may not be influenced through their affection for, and concern in the welfare of those near and dear to them, and this sentiment should be developed by our social service workers and nurses, to the end that hospital control, the most efficient of all preventive measures, may be willingly and fully accepted.

40 EAST FORTY-FIRST STREET.

CONFIDENTIAL COMMUNICATIONS BETWEEN PATIENT AND PHYSICIAN.*

The Law Relative Thereto.

By LOUIS M. GOMPERTZ, M. D.,
New Haven, Conn.

If a lawyer were to betray his client's confidence, if he were to divulge any communication made to him by his client in the course of his professional employment, and under the seal of that confidence, would not his conduct be justly condemned, would he not deserve the severest censure? With regard to the lawyer at least, the moral aspect of this proposition is also the legal point of view, for it is the law of Connecticut and throughout this country, and it has been the law of England from a very early date, that a lawyer is forbidden to disclose any such communication; and this, not by reason of any legal prohibition, but because the courts have declared this to be the common law rule, which is still in force.

Now what about the physician or the surgeon? You know, and it is a matter of common knowledge, that necessarily, in the proper discharge of his professional duties, in making diagnosis, in learning the history of a case, he frequently becomes the repository of confidences fully as intimate and sacred as any ever communicated to a lawyer by his client. And if the physician or surgeon should betray the confidence of his patient, if he were to disclose any information which he necessarily acquired in attending the patient in his professional capacity, would his conduct be any less reprehensible than that of a lawyer in a similar case? Ought not the law to treat them alike? Should not the patient be entitled to the same measure of protection as the client? The fact is, however, that in this State of Connecticut a physician or surgeon may be compelled, as a witness, notwithstanding his patient's objection, to make full disclosure of any communication, however confidential, made to him by his patient. Such was the rule of the common law; and to this rule the courts of Connecticut still adhere.

It should be the policy of the law to encourage confidence between patient and physician, to enable the patient to communicate freely to his physician such facts as to his ailments and physical condition

as may enable the latter to treat and prescribe for him intelligently, without fear of publicity and without incurring the danger of any disclosure by the physician which would embarrass, annoy, or humiliate the patient or injure his reputation and standing.

The members of our profession recognize their moral obligation to respect their patient's confidences; indeed, it has been suggested that their sense of professional honor might impel them to put to the test in such cases, to pervert or conceal the truth. Whether this be so or not, I venture to say, however startling the assertion may seem, that there are among us not a few who would be tempted to risk judicial censure or punishment rather than make public, without the patient's consent, the information acquired in confidence from him.

The legislatures of many of the States in this Union have been impressed with a sense of the injustice of this common law rule. In 1828, the State of New York adopted this statute:

No person duly authorized to practice physic or surgery shall be allowed to disclose any information which he may have acquired in attending any patient, in a professional character, and which information was necessary to enable him to prescribe for such patient, as a physician, or to do any act for him as a surgeon.

Thus originated the rule of "privilege" as extended to confidential communications made by a patient to his physician. Following the lead of that State, other States have adopted legislation patterned after the same model, until at the present time this privilege is a settled part of the law in twenty-nine States and Territories, viz., Alaska, Arizona, Arkansas, California, Colorado, District of Columbia, Hawaii, Idaho, Indiana, Iowa, Kansas, Michigan, Missouri, Minnesota, Montana, Nevada, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Dakota, Utah, Washington, West Virginia, Wisconsin, Wyoming. Will not the State of Connecticut join this group?

Can we not persuade the legislature of this State to accord to physician and patient that measure of justice which they have received in the States mentioned? Can we not show our lawmakers at this late day the wisdom, if not the necessity, of placing the seal of "privilege" upon those confidential communications which are absolutely essential in order to enable the physician to treat his patient properly and correctly? I ask these questions because I believe that I echo the sentiments of our professional brethren at large in this State in declaring that sooner or later we must take up this matter seriously with a view of securing from our legislature that recognition and protection which our profession deserves.

It may be urged that the privilege is likely to be abused. I do not regard such an objection as well founded, and for that matter the same argument can be advanced against every measure which affords some remedy. The point is, that if the proposed law is beneficial in the main, it should be adopted. The danger of abuse can be avoided, not by withholding the "privilege," but rather by safeguarding that privilege with necessary restrictions and qualifications. Let it be understood once and

*President's address before the New Haven County Medical Association, Meriden, Conn., October 24, 1922.

that, that the privilege where it now exists does not apply to all communications made to one who happens to be a physician or a surgeon; on the contrary, it is generally restricted to the particular information which the physician acquired while attending the patient in his professional capacity, and only where such information was necessary to enable the physician to act in that capacity; or, in other words, the privilege does not apply to such information as the physician may acquire when he does not attend the patient professionally, nor does it apply to any information which it was not necessary for the physician to acquire in order to treat the patient professionally, and all such information the doctor may be compelled to disclose.

This shows that the general application of the rule is not likely to result in an abuse of the privilege. The law in the States mentioned above holds that the privilege belongs to the patient, and therefore may be waived by him, so that in case of such waiver the physician can have no excuse for refusing to testify. The purpose of the law is to protect the patient only and to make it impossible for the doctor to disclose voluntarily or otherwise any communication made by the patient which will tend to humiliate or embarrass the patient, or to injure his reputation or standing in the community.

Some States do not permit the privilege to apply to communications made for an unlawful purpose, as in the case of abortion, malpractice, etc. Some States which have accorded this privilege have imposed other restrictions and limitations upon it, which it is not my purpose here to set forth or discuss, but the study of which, in the light of the experience of those States, would aid our legislature in framing an adequate and suitable law covering the subject. But, irrespective of such restrictions as the wisdom of the legislature might suggest, the danger of the abuse of the privilege is rather imaginary than real, since a judge or jury would readily detect any attempt to suppress the truth or to frustrate the ends of justice by an improper use of the privilege.

This subject, I venture to suggest, is of such importance and of such direct concern to our members, that this body should consider the advisability of instituting a campaign of publicity which will induce our legislature to pass a law which shall privilege and protect from disclosure any information acquired by a physician or surgeon in attending a patient in a professional capacity and which was necessary to enable him to act in that capacity.

FRANK W. BRADNER, M. D.

A RUPTURED ECTOPIC GESTATION SAC

Report of a Case, with Comments on Diagnosis.

By FRANK W. BRADNER, M. D.,

New York.

In the light of current medical literature and more accurate methods of diagnosis now in vogue, extrauterine gestation does not appear to be the rare and unusual occurrence it was formerly supposed. This fact, the serious position in which it

always places the patient, and the perplexing problem presented to the physician for diagnosis, make this class of cases of unusual interest to the medical profession.

Authorities, agreeing that surgical procedure offers at once the most rational plan of treatment, as well as the best prospects of recovery to the patient, nevertheless concede the diagnosis to be always a difficult and sometimes impossible matter, this paradox accounting for the limited number of cases identified and the comparatively few brought to a successful termination.

How often this curious accident would be discovered, even by experienced clinicians during the first few weeks of gestation, is a question, since the vague abdominal and other symptoms, the frequent impossibility of satisfactory bimanual manipulation on account of anatomical characteristics, and the fact that a large percentage of these cases occur in women who for a number of years have supposed themselves to be sterile, would seldom furnish adequate evidence to warrant the positive assertion a pregnancy of this sort existed.

Later, when the tube ruptures and its contents with hemorrhage are discharged into the peritoneal or pelvic cavity, a variety of secondary phenomena ensue, which are then responsible for the confusion, these in themselves, if occurring as primary lesions, being sufficient to account for sudden and severe prostration of the patient. This feature considerably impressed itself upon the writer in a case of ruptured tubal sac recently come under his observation, and is recorded as an example of the elusiveness, as well as remote involvement, capable of arising under these circumstances.

The patient, a rather small but vigorous young woman of twenty-seven years, had been married very young, and during the first year had had a miscarriage from which she recovered in about two weeks. Subsequently, about ten years ago, she became the mother of a child which lived three months, and since that time she had menstruated regularly, with the exception that the last two periods were less profuse and more intermittent than usual.

One morning the writer was hurriedly summoned to her home, and found her lying on the bed, partly clothed, apparently suffering great pain which she referred to the region over the stomach, stating it had come on suddenly, accompanied with bilious vomiting, efforts at which she still persisted in making from time to time. Though naturally pale, it was remarked she was more so than usual at the time; the temperature was slightly subnormal and the pulse was 126, thin, feeble, and slightly intermittent.

The pain was so pronounced and agonizing in character that it caused a very careful examination to be made of the kidneys, liver, appendix, and abdomen in general, and the results being negative, together with a history of the patient's having partaken of heavy food the night before, led to the conclusion that she was suffering from a severe attack of acute indigestion to which she was frequently subject. With instructions to remain perfectly quiet in bed, stimulants were ordered and five grains of calomel and half a grain of peppermint, followed by a saline, was prescribed as initial treatment.

Reflecting on the inadequacy of the findings, a visit was made a few hours later when, although the pain and vomiting had somewhat subsided, the heart continued to show the same considerable degree of shock, and it was also learned what the patient supposed to be a menstrual flow had made its appearance.

This latter consisted of a large stain of dark reddish brown material and occasioned a vaginal examination to be attempted, but owing to the contortions of the patient,

who writhed herself out of bed, it was postponed until she could become more composed. The abdomen, however, was gone over again, this time the writer thinking he made out by percussion a slight dullness over the sigmoid, and as the physic had failed to operate, a medicated enema of magnesium sulphate, glycerin, and turpentine was administered, but it returned later without fecal result.

It had by this time become apparent that some serious process was at work within the abdominal cavity, and notwithstanding the desire to relieve the patient, the entreaties for an opiate were denied, on the ground that it would further conceal the hidden source of disturbance and, therefore, greatly affect the ultimate chances of recovery. On the following morning the same general condition prevailed in a slightly modified form, the centre of pain still being referred to the epigastric region with some tenderness and slight distention over the remainder of the abdomen. In the course of examination the stethoscope was applied to this region, disclosing the reason of the failure of the physic to operate, for peristalsis was found to be entirely absent, absolute stillness prevailing over the entire area. It was also found that complete suppression of urine had intervened during the night, catheterization proving the bladder to be perfectly empty.

Remembering the area of dullness formerly mentioned, the thought of a paralytic or other obstruction suggested itself, and with this in view, as well as for the effect on the renal disturbance, the bowel was distended through a high rectal tube with four quarts of normal saline at 110° F., concluding with the introduction of half a pint of olive oil before withdrawing the tube.

This procedure was so well tolerated that the writer then decided to make another attempt at vaginal examination, which was this time successfully accomplished as far as the interior was concerned, but the finger revealed nothing in particular beyond a transverse cervical laceration, and provoked a considerable aggravation of pain.

A trained nurse had meantime been procured and instructed to note and record all symptoms with the utmost care in the hope that some further clue might be found, leading to the source of these several complications, but during that day the case remained stationary, and in the evening a consultation was asked with an experienced clinician for the purpose of discussing the advisability of opening the abdomen for exploration.

As the family were not quite reconciled to the prospect, and the patient's condition, though serious, was not exactly critical, it was agreed to be safe enough to wait a few hours and see if the lesion, whatever it might be, would not show some disposition to correct itself before insisting on the laparotomy.

Through the night, much to the delight of the family and attendants, a decided improvement took place, the pulse dropped to around 100, and was regular and of excellent quality, the color returned, pain abated, the kidneys resumed their function, and gas was passing frequently by the rectum, though the abdomen still remained distended and peristalsis, though present, was slight.

This favorable change had the effect of greatly reassuring those present, but was by no means accepted with the same degree of confidence by the writer, who, learning that a few more drops of blood had been passed per vaginam, proceeded to explore the interior of the uterus around which or its annexa his suspicions were at length becoming centred. For this purpose a small, dull spoon curette was selected as the instrument with which the touch was most familiar, but the cavity was found empty and with that organ eliminated the strong probability of an ectopic gestation established itself.

A few hours later, the temperature commenced to rise slowly, accompanied by an increased tenderness over the lower abdomen, and notwithstanding that the patient protested that she felt better than at any time during the attack, it was decided that more danger lay in delay than in operation, and she was taken to the hospital, where she arrived in very good condition, excepting that the pulse had run up to 160, and was operated on shortly following admission. She was discharged from the hospital on the seventeenth day.

SUMMARY.

Onset sudden, with severe abdominal pain having centre

of tenderness over the stomach, accompanied at first by bilious, later by greenish vomiting.

Marked prostration with anemic countenance, temperature slightly subnormal throughout attack, and rapid, feeble and irregular pulse, 126; later, after thirty-six hours, pulse rose to 100, was regular and of good quality, remaining thus until under the influence of transportation to hospital, it rose to 160.

After twenty-four hours, moderate abdominal distention with some increasing general tenderness.

Remote involvement: Intestinal paralysis from onset, improved to the extent of passing gas after thirty-six hours. Complete suppression of urine for twenty-four hours.

Locally associated: One large, reddish brown, sanguineous stain per vaginam, subsequently three or four small stains. It may be well to remark, in this connection, that the time was about that at which the usual monthly period was expected.

The conclusions to be drawn from this case are that pelvic examination cannot be relied upon, at least in general practice, to the extent commonly assumed by the textbooks and other treatises, for the reason that bimanual examination cannot be satisfactorily performed, on account of abdominal distention and tenderness or other natural anatomical characteristics peculiar to the individual.

Determining the presence of hemorrhage by internal palpation would likewise seem uncertain, since it requires the limitation of the process by adjacent structures or adhesions to the extent of forming an appreciable hematoma, or the lapse of sufficient time for firm clotting to take place, a condition greatly militating against its prospective value.

There is one point, however, which the writer observed in this case, and wishes particularly to emphasize, namely, whenever the uterus was locally disturbed, either with the finger or speculum, it was invariably accompanied by what the patient described as "that throbbing pain again," either aggravated if pain was present, or renewed if absent, and was so constant in occurrence, specific in character, and rational of explanation that it would require no personal hesitation in the future to regard its presence as highly indicative of a ruptured ectopic gestation sac.

The objection to searching for this sign is acknowledged, inasmuch as it involves the consequence of further extravasation of blood, but as a vaginal examination would undoubtedly be made in suspected cases, the "pulsating pain" could be inquired after at that time, without subjecting the patient to any further danger than those entailed by the customary routine.

82 SARATOGA AVENUE, BROOKLYN.

A NEW OPERATING URETHROSCOPE.

By GEZA GREENBERG, M. D.,
New York,

Assistant Urologist, German Hospital Outpatient Department

I have no doubt that every genitourinary surgeon at one time or another, while endoscopic his patients, has come across that case where examination proved unsatisfactory and treatment more so, owing to lesions hidden between the folds of mucous membrane. Hence my apology for a new instrument

which is not only of diagnostic but of therapeutic value as well.

It is a simple device for distention with air through an airtight compartment, provided with a stopcock to which an air bulb is attached. At the proximal end is an inspecting window; during the examination the urethra is inflated with air and remains distended when closing the stopcock, thus obviating the necessity of holding the rubber bulb, and interfering with the free use of the hands. In addition to this, a telescope (megaloscope) is attached to the outer end of the endoscope, which magnifies the field of vision, being focussed like an opera glass.

When the entire urethra has been examined, it can be treated under air distention, using a special air tight window for the instrument one wishes to use; thus all errors in diagnosis can be obviated and the treatment of urethral lesions more successfully carried out.

Smaller areas of inflammation of the urethra may be touched up without insulting healthy tissues. It may further be very successfully used for the introduction of filiform bougies through tight strictures while the urethra is distended, thereby locating the entrance to the stricture.

The advantages thus gained by this instrument are further accentuated in the posterior urethra by flattening out the prostatic sinuses, thereby enabling the operator to discover the minutest lesions by the aid of the telescope and to institute appropriate treatment therefor.

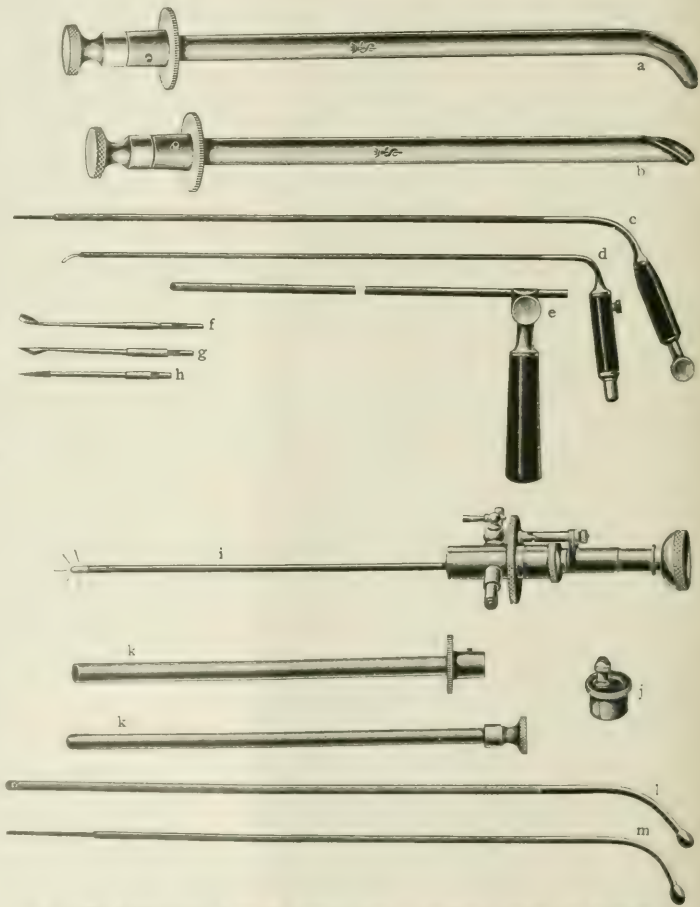
In addition to the regularly curved posterior endoscope, I have constructed a special tube for the examination of the superior wall of the prostatic and membranous urethra as well as that of the sphincter vesicæ, thereby giving us a larger field of vision. The accompanying illustrations clearly outline the new instrument, made by the Kny-Scheerer Company.

MODUS OPERANDI.

For the sake of convenience it is best to have a little table for the

instruments alongside the operating table to the right of the operator, a basin for drainage at the foot of the table, and a little bowl with sterile water on the instrument table. Now, having laid out all the accessories on the table, we can proceed with the endoscopic examination.

Introduce the endoscopes with the obturator to the sphincter vesicæ, remove the obturator, and introduce the light carrier; turn on the light; if any urine escapes into the urethra it can be aspirated by the special aspirator designed for that purpose; now having a clear field, we attach the observation window to the endoscope, which makes it airtight, and join the double air bulb to the stopcock while it is closed, and inflate it (the air bulb) with air until it is well distended. In order to distend the urethral walls, open the stopcock gently, when the air will rush in and distend it to its maximal capacity. When



a, Curved prostatic tube; *b*, straight prostatic tube; *c*, electrolytic needles for galvanism and fulguration; *d*, galvanocautery; *e*, universal operating handle to be used with accessories *f*, *g*, *h*; *f*, curette; *g*, knife; *h*, cotton applicator; *i*, light carrier with observation window and megaloscope; *j*, straight tube for the anterior urethra; *k*, obturator; *l*, aspirator; *m*, follicular speculum.

this is reached the stopcock is again closed and the urethra remains distended. Then swing the telescopes in place over the observation window and examine the urethra carefully.

When we wish to use the operating instruments, the window with a perforation, but airtight compartment, is used instead. When the field gets blurred by the accumulation of blood, it is advisable to fill up the aspirator with sterile water and flood the field; then it is again sucked up by the aspirator, leaving a perfectly clear and dry field in view. The blood adhering to the endoscopic lamp can be removed in the same way without disturbing the light carrier.

63 SECOND AVENUE.

Therapeutical Notes.

Treatment of External Tuberculosis.—Calot, in *Quinzaine thérapeutique* for May 10, 1912, reports excellent results in a large series of cases of "surgical tuberculosis" by the injection of modifying antiseptic fluids, combined with constitutional treatment. In suppurating tuberculous lesions of the bones (coxalgia, Pott's disease, white swellings) and of the soft tissues (adenitis, synovitis, epididymitis, etc.) he has discarded surgical treatment and relies entirely on punctures and injections of creosote in oil or of camphorated naphthol in glycerin. Among patients treated with the injections at Berck, a seashore resort, he is now able to obtain from ninety-eight to ninety-nine per cent. of cures.

In tuberculous lesions with sinus formation he operates only in the rare cases where a loose sequestrum is found in the channel; under these circumstances the dead bone is removed, without any intention, however, of excising the tuberculous focus. In all other instances, the sole measure employed, in addition to the sea air, light and sun baths, is the injection of the following paste:

R	Camphorated phenol, . . .	} of each 6 grammes;
	Camphorated naphthol, . . .	
	Creosote,	
	Guaiacol,	
	Spermaceti,	} of each 50 grammes.
	Hydrated wool fat,	
M.	fiat pasta.	

With this treatment nearly every sinus of bony origin, provided infection, with fever and albuminuria, is not already present, is eventually cured, though occasionally over a year is required. In superficial open tuberculous lesions, where wide excision might lead to a cure, the author nevertheless prefers the injection treatment on account of the better cosmetic results.

In dry tuberculous lesions occurring in children, Calot injects creosote in the mild cases, and where the condition is further advanced or more severe injects "softening" fluids consisting either of camphorated naphthol in glycerin or of a mixture of equal parts of phenol in sulphurated castor oil, camphorated phenol, camphorated naphthol, and oil of turpentine. In this way the "dry" tuberculous foci are transformed into small cold abscesses, which are then evacuated by puncture, and tuberculous joint affections become hydrarthroses or pyarthroses,

which are then treated as has already been described for suppurating tuberculous foci. In a series of 311 cases of white tumors, almost one half involving the knee, every patient was cured by the "softening" treatment. Amputation or even resection was in no instance necessary. The average time required was one year, ten successive injections being given.

In dry tuberculous lesions in adults, Calot insists less on nonsurgical treatment than in children, but thinks that a radical operation should be performed only where complete removal of the diseased tissue can be attained without leaving conspicuous anatomical defects. In tuberculosis of the epididymis and testicle he is strongly opposed to operation, having found it possible to cure every case in a series of 260 treated in the last eighteen years by conservative methods.

Treatment of Asthma.—Léopold-Lévi, in *Archives générales de médecine* for March, 1912, reports that he has witnessed good results in twenty-three cases of asthma from the use of thyroid extract. Many of these were cases of a number of years' standing, and had frequent, intense paroxysms, upon which thyroid preparations exerted an immediate, continued, and very marked inhibitory effect. Asthmatic patients in whom thyroid extract succeeds frequently present in addition other symptoms of the "neuroarthritic" diathesis, such as migraine, upon which the drug has an equally salutary effect. The thyroid gland is believed by the author often to be a contributory factor in the causation of asthma. Functional abnormalities of this gland tend both to create a state of the general system which predisposes to asthma—neuroarthritism—and to bring into play any predisposition of the pneumogastric centres already present, thus transforming a latent or potential asthmatic condition into an active one. Thyroid medication is capable, in favorable cases, of so regularizing and improving the functions of the thyroid gland that the asthmatic and other paroxysmal phenomena disappear.

To Control Rectal Hemorrhage.—J. Wagner, in the *International Journal of Surgery* for August, 1912, advises the following simple procedure: Knot together two strips of gauze, twist one in a spiral about the other, and introduce into the rectum through a speculum, the knotted end first. Remove the speculum and pull the end hanging free from the anus. In this way a solid plug of gauze is formed in the rectum.

Oral Antisepsis.—P. Carles, in *Lyon médical* for July 21, 1912, is credited with the following solution for use in the presence of malodorous breath or of beginning dental caries:

R	Tincturæ iodi,	20 grammes;
	Potassii iodidi,	1 gramme.
M.	ft. solutio.	

From one to three drops of this are to be placed in a quarter glassful of tepid water and the mouth carefully rinsed therewith each day. With solutions of this strength the teeth are not rendered yellow even after the iodine has been used for several months.

NEW YORK MEDICAL JOURNAL

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MENTAL HYGIENE IN PREVENTIVE
MEDICINE.

The increase of insanity and mental defectiveness has attracted much attention of late, especially in its dependent relation to immigration. But it must not be forgotten that, while important, immigration is only one of the sources of the alarming increase of mental unsoundness in this country. Recent investigation indicates that a large proportion of insanities might be placed in the preventable class, and if so, their development is due to causes which can be attacked and removed when they are rightly understood.

Not only is there a new field opening in preventive medicine in the line of the direct prevention of insanity, but associated with it is opportunity for badly needed social service in connection with the relatives or dependents of the insane, and for education of the general public to regard insanity as a disease, and to recognize its preventable causes. The National Committee for Mental Hygiene seeks to conserve mental health in every possible way; to promote the study of mental disorders and to popularize the knowledge of their causes, treatment, and prevention; and to promote the organization in each State of a society for mental hygiene, similar to the one now existing in Connecticut.

The National Committee for Mental Hygiene, in short, aims "to become a clearing house for the nation on the subject of mental health, the prevention of nervous and mental disorders, the care and treatment of the insane; and aims also to become a co-ordinating agency for all State and local agencies interested in these problems."

The State Charity Aid Association of New York has a Committee on Mental Hygiene in charge of this work in New York State. The policy of this committee is threefold, to educate the general public as to the causes of insanity, to promote the establishment of clinics for nervous and mental cases, and to assist individuals in need of medical treatment. Over 560,000 popular pamphlets have been distributed in the past two years, giving the principal facts regarding the nature, cause, and prevention of insanity; forty meetings and lectures on mental hygiene have been held; innumerable press notices and magazine articles have been written to bring these subjects familiarly before the public.

The committee has aided the work of the outpatient department of the Long Island State Hospital, and has assisted in the promotion of clinics and psychopathic wards in various parts of the State for the observation and early care of the insane. But the committee has gone further than this. It has seen the crying need for an independent clinic or mental health dispensary, where disinterested advice can be offered in actual or threatened cases of insanity, and where outpatient care can be afforded those patients for whom it is suited. The large number of incipient patients with mental disorder at large with no supervision or control, is indicated by the report of the New York State Lunacy Commission for 1911, which shows that about thirty per cent. of the first admission patients to the State hospitals for the insane had symptoms for a year preceding. These figures in themselves show the great need of free mind and nerve dispensaries. Several mind clinics existed in New York, but were under the disadvantage of intimate connection with a hospital or large institution. This disadvantage was illustrated at Bellevue, where experience shows that many or most patients who would apply voluntarily for advice or assistance in incipient or threatened insanity, are deterred by the close association of the clinic with a widely known psychopathic ward, and by the fact that they fear that if real insanity was detected in them, they would be committed against their will.

Considering these various points, the Committee on Mental Hygiene has founded the first independent clinic for mental and nervous diseases at 295 Henry Street, New York, without hospital or other connection. This clinic is open five days a week.

with four specially chosen physicians in attendance. In addition a member of the staff from both the Central Islip and Manhattan State Hospitals devotes one day a week to the clinic. At this clinic advice is furnished relative to the preservation of mental health in all its phases, and to the prevention of insanity. Mental examinations are made of school children who are reported by their teachers or parents as showing some abnormality, such as hallucinations, delusions, ungovernable temper, and other symptoms. The Board of Education provides for mentally defective children in a series of ungraded and other classes for backward children, where special instruction and methods are adapted to their needs. But the Henry Street clinic examines only into mental disorders which may presage or indicate insanity.

Over 150 individuals have received advice through this committee already as to where and how they may obtain proper medical attention. Some of these have been committed to State hospitals for the insane, some have received clinical treatment and been cured, others, by means of social service work, have been enabled to return to a normal life. The work of the committee is being extended as fast as its funds permit.

Physicians have been slow to realize that the prevention of insanity and mental defectiveness, not only in relation to the individual patient, but more particularly from the eugenic standpoint of the survival and improvement of the race, is one of the most significant and valuable fields of modern preventive medicine. But there is a rapid awakening to this new conception, and the pioneer work of these committees for mental hygiene deserves active support and intelligent cooperation.

UNDERGRADUATE MEDICAL RESEARCH.

In view of the steady growth of the required studies in medicine one would hardly expect to find time for additional work on the part of undergraduates in the medical school. An inquiry into this subject by Cecil K. Drinker, chairman of the research committee of the Undergraduate Medical Association of the University of Pennsylvania, among twenty-five of the leading medical colleges of the United States has brought out some interesting information, which appears in *Science* for November 29, 1912.

We find that seventeen of these twenty-five colleges allow undergraduates to undertake original research in conjunction with their regular medical work. As was to be expected, the effect of this research work upon the students is of greater importance than are the results achieved. The close

application required to the prescribed curriculum does not leave a sufficient amount of time for even the most ambitious student to carry on original investigations of a character likely to yield results in themselves important. The great value of this work therefore is in the training of the medical student in such a direction that when he has left the college he finds himself both willing and competent to carry on original investigations. In no field is the importance of originality, or rather of an original and independent point of view, of greater importance than in the active practice of medicine. Every case observed in effect requires independent thought on the part of the practitioner, and the young man whose capacities for observation and for making logical deductions from this observation have been properly trained is the best equipped man for meeting the problems of practice.

It is almost too much to hope that any save the particularly brilliant and capable students can take up any systematic original research during their undergraduate course. The fullness of the required curriculum makes this difficult, and for many students impossible. But those who can undertake original investigations will undoubtedly find that the training acquired in this work will be one of their most valuable assets in meeting the constantly shifting problems with which they will be confronted in actual practice.

THE QUALITIES OF A PIONEER.

The suggestion which is made by ages of inherited thought impressed upon the mind in its infancy and childhood, is of tremendous power and is rarely shaken off even to-day. This is so true that a man who is simply susceptible to a new viewpoint considers himself, and is considered by others, to be quite clever, even a little dangerous. But to be the first to break through the brambles and undergrowth of centuries of erroneous teaching and living, to be the first to encounter the wild beasts of superstition and reaction, to create the new viewpoint, that is indeed a feat of daring, rare and sublime. It is done by men who are variants from type, whose eccentricity creates terror or ridicule, as their neighbors are weak or strong, in either case an atmosphere that only the victim of an *idée fixe* could ignore. Fortunately for us the *idée fixe* of the pathfinders of science was the truth, although their contemporaries treated them as they did other lunatics. In bygone days a passion for the truth was looked upon as diabolic possession, and although truth needs no martyrs, she has always had them and always will have.

Since the dawn of the nineteenth century pioneers

médicale for December 11, 1912, musing upon this phenomenon, devised a novel method of reducing weight simply by cutting down the evening supply of food. He allows his too heavy patient a preliminary breakfast of a little bread and butter and a cup of tea, and for déjeuner, about ten o'clock, an egg and a small tart. At one o'clock the victim may have a meal of meat, vegetables, salad, and preserves; at four o'clock coffee and a cracker or a small piece of bread with butter. Dinner is replaced by one small tart. With this régime, which after a few days' discomfort is tolerated by the patient, Galisch has obtained great reduction in weight without the least cardiac disturbance or trouble with the nervous system, unpleasant sequelæ which are extremely likely to occur after employment of the older methods of reduction. As much as two pounds a week are lost by the Galisch method, and when the normal weight has been reached, the diet may be cautiously increased, falling back on the restricted meals at the first sign of overweight.

Medical Law.

I. THE RIGHT TO PRACTISE MEDICINE AND SURGERY.

In the case of *Kirk vs. State*, 150 Southwestern Reports, 84, the constitutionality of the section of the medical act of Tennessee regulating practice by itinerant physicians was upheld by the Supreme Court. The section in question reads as follows:

Be it further enacted, that it shall be unlawful for any itinerant physician, or vendor of any drug, nostrum, ointment, or application of any kind intended for the treatment of disease or injury, to sell or apply the same, or for such itinerant physician or vendor, by writing, printing, or other methods, to profess to cure or treat diseases or deformity by any drug, nostrum, manipulation, or other expedient, in this State, and whoever shall violate the provisions of this section of this act shall be guilty of a misdemeanor, and, upon conviction thereof before a court of competent jurisdiction, shall be fined in any sum not less than \$100 and not exceeding \$400.

It was urged that this section was unconstitutional:

First, because it includes two subjects, the practice of medicine by itinerant physicians and the sale of drugs and nostrums;

Second, because it contravened Article 1, Section 8 of the Constitution of Tennessee, providing "that no man shall be . . . in any manner disturbed or deprived of his life, liberty, or property but by the judgment of his peers, or the law of the land," and

Third, because it was in contravention of the "due process" clause of the fourteenth amendment to the Constitution of the United States.

The court disposed of the first objection by reading for the word "or," appearing between the words "sell" and "apply," the word "and." Justice Shields said:

It was not intended by the General Assembly to prohibit the sales of drugs, etc., but to forbid the sale and application of them. The disjunctive "or" is used in the statute in the sense of the conjunctive "and" between the words "sell" and "apply." . . . Reading the word "and" instead of "or" in the statute preserves it from the vice of con-

taining two subjects, that of practising medicine and that of engaging in the sale of medicine; while a literal reading renders it subject to that vice.

As to the second and third objections, the Justice expressed the views of the court as follows:

We are of the opinion that there is no unlawful discrimination in the provisions of the statute, and that it is not subject to the objection that it is vicious and arbitrary class legislation. We think, on the contrary, that the distinctions made between physicians, surgeons, and vendors who have an established place of business, where they are known to the public and all who may be reasonably expected to become their patients and patrons, and itinerant physicians and vendors of drugs, medicines, appliances, etc., intended for the treatment of disease or injury, is supported by a natural and reasonable basis, and has reasonable relation to the subject matter. The object of the prohibition is to prevent physicians and vendors who have no fixed place of business, are unknown to those to whom they tender their services and medicine, and have no reputations for professional skill, honesty, and fair dealing to maintain, from traveling about the country and defrauding the people by working upon the fears and hopes of the unfortunate and afflicted. It is well known that itinerant physicians and vendors of medicines, nostrums, appliances, etc., of this character are generally and as a class unreliable, and that the money which they obtain from an unfortunate class of the people is without consideration. . . .

The specific provision of the statute which the plaintiff in error is charged with violating is that which prohibits itinerant physicians and vendors, by writing, printing, or other methods, to profess to cure or treat disease or deformity by drugs, manipulation, or other expedient. The object of this provision is to prevent such persons from practising the frauds prohibited in the first clause of the sentence. It is well known that fakirs of the kind here legislated against usually advertised their services and medicines, and that advertising, if not altogether necessary, greatly aids them in perpetrating their fraudulent practices upon the people. It is well settled that the legislature may enact laws which tend to prevent the perpetration of fraud, although the act prohibited is otherwise harmless in itself.

X. THE PHYSICIAN AS WITNESS.

The Supreme Court of North Carolina expressed its opinion, in the case of *Alley vs. Charlotte Pipe and Foundry Co.*, 74 Southeastern Reports, 885, upon the right of the physician as expert witness to testify as to the ills that are "liable" to result from an injury.

In this case plaintiff's foot had been seriously burned by a stream of molten iron. Upon the witness stand, a physician testified that the wound was such that *sarcoma*, or eating cancer was liable to ensue.

Justice Brown, in commenting upon the propriety of this testimony said:

We recognize the general rule that an expert physician testifying to the consequences of a personal injury, should be confined to probable consequences, but in this instance we do not think the physician indulged in pure speculation. Jones on Evidence, §378. The word "liable" is defined as "exposed to a certain contingency more or less probable." *Webster's Dictionary*. The word was used by the witness in the sense of probable, and was doubtless so understood by the jury. The identical phrase was used in *Montgomery vs. Scott*, 34 Wisconsin 339, and upheld as a legitimate expression of opinion by a medical expert. In *Kansas City vs. Stoner*, 49 Federal 209, 1 C. C. A. 231, the court held that the plaintiff was entitled to recover for the probable effects of the injury, even though at the time not apparent.

We think the evidence competent, also, as tending to prove acute mental suffering accompanying a physical injury. The liability to cancer must necessarily have a most depressing effect upon the injured person. Like the sword of Damocles, he knows not when it will fall.

News Items.

North Texas Medical Association.—At the annual meeting of the association, held in Dallas on December 10th, 11th, and 12th, Dr. Martin I. Faber, of Dallas, was elected president, and Dr. J. E. Kelton, of Corsicana, vice-president; Dr. J. Leslie Moore, of Dallas, and Dr. K. H. Beall, of Fort Worth, were reelected secretary and treasurer, respectively. The next semi-annual meeting of the association will be held in Denison on June 10, 1913.

St. Louis Society of Medical Research.—Dr. E. R. Waterhouse was elected president of this society at the annual election and banquet of the organization, held on the evening of December 10th. He will succeed Dr. L. M. Ottoby, who has been president of the association since its inception two years ago. Other officers elected were: Dr. A. H. Schott, first vice-president; Dr. H. H. Helving, second vice-president; Dr. D. M. Gibson, secretary, and Dr. F. W. Luster, treasurer. The board of censors for next year will consist of Dr. E. F. Brady, Dr. Joseph Gill, Dr. Scott Parsons, Dr. H. A. Uhlemer, Dr. B. J. Wiesner, and Dr. Paul R. Fletcher. Dr. L. M. Ottoby presided as toastmaster.

Physicians in the Maine Legislature.—The medical profession will be well represented in the new Maine Legislature, eleven physicians having been elected, three in the Senate and eight in the House of Representatives. In the Senate will be Dr. H. M. Moulton, of Cumberland, Democrat; Dr. A. G. Hagerthy, of Ellsworth, and Dr. J. H. Hatten, of Bar Harbor, Republicans. In the House, Dr. A. W. Plummer, of Lisbon; Dr. John A. Donovan and Dr. Richard T. Leader, of Lewiston; Dr. Wallace N. Price, of Richmond, and Dr. William J. Maybury, of Saco, are Democrats. Dr. B. F. Sturgis, of Auburn; Dr. William S. Thompson, of Standish, and Dr. Isaac D. Harper, of Gorham, are Republicans. Seven are graduates of Bowdoin Medical School.

Convocation Week Meetings of Scientific Societies.—The American Association for the Advancement of Science will meet in Cleveland during convocation week, beginning December 30, 1912, also a number of other national scientific societies at the same time, among them the American Society of Biological Chemists, the American Physiological Society, the Society for Pharmacology and Experimental Therapeutics, the American Society of Naturalists, the American Society of Zoologists, the Association of American Anatomists, the American Microscopical Society, the Botanical Society of America, the American Anthropological Association, and the American Psychological Association. In New York the Society of American Bacteriologists will meet on December 31st and January 2d.

Section in Genitourinary Surgery of New York Academy of Medicine.—The next meeting of this section will be held on Thursday, January 2d. It is the annual meeting with the Academy and will be held in the Auditorium. The programme will consist of a symposium on Lithiasis in the Urinary Tract. The following papers on the subject will be read: Renal Lithiasis, by Dr. J. Bentley Squier; Ureteral Lithiasis, by Dr. Hugh Cabot, of Boston, by invitation; Vesical Lithiasis, by Edward L. Keyes, Jr.; Urethral and Periurethral Lithiasis, by Dr. Victor Cox Pedersen. Among those who will participate in the discussion are Dr. Eugene Fuller, Dr. J. R. Hayden, Dr. James Pedersen, Dr. Ramon Guiteras, Dr. Charles H. Chute, and Dr. Martin W. Warren. Dr. Warner Brooks, of Boston, is chairman of the section for 1913, and Dr. Joseph Francis McCarthy is secretary.

Medical Society of the County of Kings.—This society held its thirty-second annual meeting in Brooklyn on Tuesday, December 11th, with Dr. Elias H. Bartley presiding. Dr. William Lintz, of the bacteriological laboratory of the Long Island College Hospital, read a paper on Blood Cultures Simplified by New Apparatus, which was followed by an important discussion, among those taking part being Dr. John C. Smith, Dr. Ludwig M. Von Cott, Dr. Luther F. Warren, and Dr. Jacob Fuhs. The following officers were elected: President, Dr. James M. Winfield; vice-president, Dr. J. Richard Kevin; secretary, Dr. Claude G. Crane; associate secretary, Dr. Bernard Thomas; treasurer, Dr. John R. Stivers; associate treasurer, Dr. Stephen H. Lutz; directing librarian, Dr. Frederick Tilney; censors, Dr. John A. Lee, Dr. Walter A. Sherwood, Dr. John G. Williams, Dr. L. Storch, and Dr. Charles E. Edmund; trustee, Dr. Elias H. Bartley.

American Society of Medical Economics.—This is a new society recently incorporated in New York by thirty physicians, having for its object the betterment of the economic condition of the medical profession. Over a thousand physicians have already pledged themselves to become members, and it is expected that branches will be formed shortly in other States. The officers are as follows: President, Dr. E. Eliot Harris; vice-presidents, Dr. Algernon T. Bristow, Dr. William Francis Campbell, Dr. Smith Ely Jelliffe, Dr. T. K. Tuthill, and Dr. Thomas F. Kelly; secretary, Dr. Dana Hubbard; treasurer, Dr. Royal S. Copeland, and historian, Dr. W. J. Cruikshank. Among the committees and the men selected to head them are: General Economics, Dr. L. Pierce Clark; Professional Conduct, Dr. J. R. Kevin; Medical Charity, Dr. W. S. Thomas; Education and Statistics, Dr. Alfred S. Taylor; Legislation, Dr. J. E. Wilson; Food, Drugs, and Sanitation, Dr. S. J. Kopetzky; Ways and Means and Inspection, Dr. Russell S. Fowler; Special Business, Dr. Irving Wilson Voorhes.

Personal.—Dr. Harvey W. Cushing has been appointed Moseley professor of surgery at the Harvard Medical School, succeeding the late Dr. Maurice H. Richardson, and Dr. Charles Sedgwick Minot has been made director of the laboratory of anatomy in the same school.

Dr. J. E. Rawls, of Suffolk, Va., was elected president of the Seaboard Medical Association, at its annual meeting held recently in New Bern, N. C.

Dr. J. Chalmers Da Costa, of Philadelphia, professor of surgery at the Jefferson Medical College, was the first physician to receive permission to take the examination for the new Navy Medical Reserve Corps.

Dr. William G. Bissell, chief bacteriologist of the laboratories of the Department of Health in Buffalo, N. Y., and a member of the medical corps of the National Guard of New York, has been detailed to take a special course of expert study in the Laboratory of the Army Medical School, Washington, D. C. These studies will include the most recent methods in serum tests for the diagnosis of disease and the preparation of vaccines.

Immunization Against Typhoid Fever.—Realizing the value of antityphoid vaccination, and feeling that its wider use, under proper precautions, is called for, the Department of Health of the City of New York, on December 10, 1912, authorized the performance of immunization against typhoid fever, by its inspectors, under conditions similar to those governing the free administration of diphtheria antitoxine. Beginning January 1, 1913, inoculations will be made at the homes of applicants or at the central office of the department, Centre and Walker Streets, Manhattan, or the culture will be furnished free to physicians for their own use. All requests for immunization must be made or approved by the attending physician. Requests for inoculation can be made by telephone or letter to the Division of Communicable Diseases of the Department of Health. A circular of information regarding immunization against typhoid fever has been issued, and (together with a leaflet of information regarding the new Diagnostic Clinics for Venereal Diseases of the Department of Health) will be sent to every physician in New York.

Resolutions on the Death of Doctor von Ramdohr.—At a stated meeting of the Medical Board of St. Mark's Hospital, New York, held on December 3, 1912, the following resolutions were adopted:

WHEREAS, Time in his unswerving course has removed from our midst Dr. Casar A. von Ramdohr, an associate, who was one of the founders of our hospital, knowing of whom we could not only respect for his honesty of purpose and indomitable courage of conviction, but personal affection because of the uniform, kindly interest of his department;

WHEREAS, His faithful services abundantly showed his unswerving attention to duty, and these services, eagerly sought by those suffering, made him endeared to every professional and lay member of the hospital, and his counsel was often asked and eagerly accepted, as it was cheerfully given;

WHEREAS, In his life he had acted as his professional brethren did, were troubled in their career with the utmost consideration, with unusual kindness and courtesy, and his services were sought and given cheerfully;

WHEREAS, His genial companionship, his uncommon charm of temper, and cordiality of address, attracted and held the admiration and affection of all with whom he came in contact, therefore be it

Resolved, That the sympathy and confidence of the members of the Medical Board of St. Mark's Hospital in New York City be and hereby are extended to the bereaved family, and furthermore be it

Resolved, That these resolutions be spread upon the minutes of the medical board and published in the principal papers of the medical press.

BENJAMIN T. TILTON, M.D.
ANDREW VON GRODEM, M.D.

Pith of Progressive Literature.

WIENER KLINISCHE WOCHENSCHRIFT.

November 7, 1912.

1. HAMBURGER: Mechanism of Psychogenetic Diseases in Children.
2. LIPSCHÜTZ: Protozoa in Chronic Pemphigus.
3. BAUER: Tetany and Osteomalacia.
4. KERL: Experiments with Salvarsan.
5. LÖWIT: Myomata and Primary Sarcoma of the Stomach.

November 14, 1912.

6. STEIN: Specific Treatment of Deep Trichophytosis.
7. ARZT and KERL: Application of Freund-Kaminer Reaction.
8. SUGO: Case of Knotlike Syphilitic Meningitis.
9. BECK and BLACK: Nystagmus in Fever.
10. ABELS: Bladder Troubles in Little Girls Due to Undiscovered Foreign Bodies.

November 21, 1912.

11. STOCKUM: Therapeutic Effect of Spleen Treated by Röntgen Rays on Tuberculous Patients.
12. BASS and WIECHOWSKI: Estimation of Purin Content of Blood.
13. RÖTH: Flour Days in Diabetes.
14. BOSSI: My Views on Reflex Psychopathies and Necessity for Treating Insanity.
15. JAUREGG: Remarks on Preceding Article by Bossi.
16. BEER: Treatment of Difficult Nursing.

November 28, 1912.

17. FRANKL: Early Operation in Cancer of Uterus.
18. SPRINZELS: Peritoid Enlargement in Obese.
19. ST. ACS-NAGY: Sputum Proteid and Practical Use in Diagnosis of Respiratory Diseases, Especially Tuberculosis.
20. SCHMIDT: Infected Gunshot Wounds.
21. KUTSCHERA von AICHBERGER: "Tostenhuben" in Village of Sirmitz, Carniola, Austria.

4. Experiments with Neosalvarsan.—Kerl administered neosalvarsan in his clinic for six months and arrives at the following conclusions: 1. Neosalvarsan, because of its rapid solubility at room temperature, is more suitable for practical purposes than salvarsan. The results of the various authors are more easily compared since the variable factors produced by differing composition of the solution disappear. 2. The side actions are less even with larger doses than with use of neosalvarsan. 3. It is about equal to the old salvarsan in regard to the strength of its action. 4. The abortive cures are more readily obtained with neosalvarsan and mercury than with mercury treatment alone. 5. In general lues, the small doses give excellent results. 6. The rapid new coverings of skin formed over luetic lesions lessen the danger of infection; the treatment is therefore of importance out of social considerations. 7. The periods between the injections should not be too short. The contraindications are the same as for old salvarsan, but these may be diminished by careful regulation of the doses. Particular care is to be used in patients with unstable mentality.

6. Specific Treatment of Deep Trichophytosis.—Stein says: 1. Deep trichophytosis (Sycosis barbæ parasitaria) may be cured quicker by endodermal injections of trichophytin and by local application of strong trichophytin salve than by other methods. 2. In superficial cases, which do not react to trichophytin, the salve only should be used. 3. As a prophylactic measure the healthy scalp of all children whose playmates are suffering from infectious microspores should be treated with trichophytin. 4. Not all trichophytoses are of equal value biologically. Quincke's cultures growing on maltose bouillon are the most amenable to treatment.

13. Flour Days in Diabetes.—Roth is positive that the different composition of the farinaceous foods does not explain the action of flour days in diabetes. The specific action of oatmeal is doubtful since other flourlike meals produce the same results. The absence of animal proteid is of signifi-

cance; the deleterious effects of which we cannot explain since the extractives play no part, still the action of the differently constructed proteid must be taken into account. The mode of preparation is important, that is, the butter soup which on the one hand has a prolonged diastatic action due to its stimulating effect on the bile, and on the other hand may play an important part in the resorption. He calls special attention to Blum's explanation of the previous vegetable days. His investigations into respiration prove that the different farinaceous foods are used equally well in the metabolism of diabetes.

14. Reflex Psychopathies.—Bossi enlarges on his much debated ideas concerning the reflex psychopathies. He does not assume, however, that a peculiarity of the female genitals influences in a very marked way the nervous system and mentality of woman. He restricts his remarks to reflex neuropsychopathology because a rich clinical experience supports him in this field of investigation. He does emphasize the fact that, notwithstanding the great influence of the genital tract on the one hand, a diseased condition of any other organ, especially when it leads to toxemia, is able to produce the most diverse psychoses and mental disturbances. Just as there are psychopathies in alcoholism, syphilis, typhoid, etc., so also may they arise as the result of toxemias probably having hidden localized foci in the male or female genitals, intestinal tract, ear, etc. Psychopathies may develop in both sexes by torpor of metabolic anomalies, the result of changed internal secretions. The clinical application of these truths that have long been known is still far from being applied to practice. It is a fact that in the large German institutions for the insane no specialist for internal medicine or surgery is included in the staff. The author expresses the wish that all these institutions may soon be connected with a polyclinic where all branches of medicine should be represented in fitting and complete fashion. This would bring about reforms in the laws governing these institutions. The pathogenesis is wholly in the dark, in spite of the extensive onomatology, and the treatment is purely symptomatic, through isolation, work, etc. Neuropathology is the basis for the treatment of the mentally diseased, psychiatry is merely a chapter under this heading and must receive its scientific and clinical direction from it. The best and only remedy for decreasing the growing numbers of the insane is an early diagnosis of the cause and its early removal. It is lamentable that admission and dismissal of these insane does not depend upon the presence or absence of functional or organic disease, but on that purely indefinite and arbitrary term called personal responsibility. It is not the severe gynecological cases, fibromas, cystomas, carcinomas that bring frequent psychic disturbances, but the infectious and toxic diseases, especially of the endometrium with slow and clandestine course, the parenchymatous forms of functional or infectious origin. The influence is more marked when to the infectious disease of the endometrium is added a stenosis of the cervical canal and kinks or version of the uterus which, when present, permit the accumulation of the secretion and its subse-

quent absorption. Nervous disturbances are frequent when there is suppression or diminution of the menstrual function which presupposes a disturbance in the inner secretion of the ovary.

19. Sputum Proteid in Diseases of the Respiratory Organs.—St. Acs-Nagy concludes that the relation of the proteid in the sputum has very little worth for practical diagnosis. In cases of pronounced tuberculosis no proteid could be found. The proteid content in one and the same tuberculous individual is not constant; it shows fluctuations in amount in short periods of time. The quantity of the proteid does not keep pace with the progress of the disease; therefore its diagnostic significance in this respect is destroyed. Further, sputum proteid cannot be used for diagnostic purposes in tuberculosis, because its presence has been demonstrated in all other diseases of the respiratory tract. The quantity exceeds in many cases that in the severest forms of tuberculosis.

BULLETIN DE L'ACADÉMIE DE MÉDECINE

November 12, 1912.

MARINESCO and **J. MINEA**: Growth of Nerve Fibres from Spinal Ganglia into Culture Medium, *in vitro*.

H. HENROT: Blood Transfusion.

1. Artificial Growth of Nerve Fibres from Spinal Ganglia.—Marinesco and Minea report observations made by the cultivation of spinal ganglia of dogs, both young and adult, in a medium consisting of coagulated blood plasma. Nerve fibres grew in various directions from the ganglia, some pushing through the capsule and showing terminal enlargements. Some fibres were observed to divide into two portions of unequal thickness and growing in opposite directions, the heavier being the ascending and the smaller the descending branch; collaterals developed from each. The new fibres showed a marked tendency to follow the adjacent embryonal connective tissue cells, which acted as supporting elements; some fibres, however, especially where the embryonal cells were scarce, developed through the plasma without any support.

2. Blood Transfusion.—Henrot reports six cases of transfusion. In three there was very marked benefit, in two temporary benefit, and in one death took place from embolism.

PARIS MÉDICAL

November 25, 1912.

M. R.: New Nursing Suffer from Albuminous Dyspepsia.

H. R.: New Respiratory Gymnastics: Bottle Method.

H. R.: New Respiratory Gymnastics: Bottle Method.

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plains how he managed to entertain and help a child suffering from large pleural effusion by a simple apparatus. If an uncorked bottle filled with water is placed upside down in a basin also containing water, the bottle will not be emptied owing to atmospheric pressure; the water may be forced out, however, by blowing through a rubber tube introduced through the neck. His little patient, therefore, took a long inspiration through the nose and then blew the water out of the bottle. By gradually increasing the size of the bottle Pescher obtained a graduated series of exercises which cured the child and subsequently many other children. When larger bottles can no longer be obtained, two or more bottles are used successively, the patient holding the breath between bottles, while the rubber tube is changed from one container to the next. This exercise is excellent in convalescence from all acute respiratory affections, in the pre-tuberculous stage, in emphysematous consumptives, and has even stopped hemoptysis when cautiously tried. Used between spasms of whooping cough it shortens the attack and the same is true of asthma. A pint bottle is large enough to start a child with, a quart bottle for an adult. Progression, slow at first, may become more and more rapid as improvement is manifest, until finally the patient is emptying from ten to 100 bottles several times a day. To empty ten bottles properly takes about fifteen minutes. Inspiration should be slow, and, during expiration, effort should be made to force from the lungs the residual air.

PRESSE MÉDICALE.

November 9, 1912.

1. **H. RIGER**: Functions of Lung.
2. **ANDRÉ CHALIER** and **PAUL BONNET**: Neurotomy of Superior Laryngeal Nerve in Dysphagia of Tuberculosis.
3. **ROBERT LEROUX**: Ozena and Tuberculosis.

November 16, 1912.

4. **F. LEGUEU**: Genito-urinary Diseases.
5. **V. RUE**: Obstetrics and Hygiene.
6. **ALFRED MARINETTE**: Paralytic Polyuria of Interstitial Nephritis. Diagnosis of Renal Diseases.

1. Functions of Lung.—Roger points out that the usefulness of the lungs is by no means limited to the respiratory function. They not only eliminate volatile poisons, but act also, probably by oxidation, on a large number of fixed substances, are capable of arresting and destroying microorganisms introduced either by inhalation or through the blood, bear some noteworthy relation to the process of blood coagulation, and judging from the powerful effects of substances extracted from them, possess an important internal secretion.

2. Section of Superior Laryngeal Nerve in Dysphagia of Tuberculosis.—Chalier and Bonnet recommend this operative procedure in cases where injections of alcohol or analgetics in the vicinity of the nerve fail to give adequate relief. Under ethyl chloride, cocaine, or novocain-epinephrine anesthesia a horizontal incision is made midway between the hyoid bone and thyroid cartilage and from one cm. within the sternomastoid muscle to an equal distance from the median line. The nerve to be cut should preferably be anesthetized before it is exposed, in order to avoid reflex symptoms. The lower border of the submaxillary gland is then found and drawn aside, the underlying fascia incised, and the thyrohyoid muscle sought. A short

distance behind this muscle, and in contact with the thyrohyoid membrane, the superior laryngeal nerve may be located with the grooved director, about midway between the hyoid bone and the thyrohyoid cartilage. It should be raised, by means of a thread passed beneath it, sufficiently to permit of identification of its external descending branch, and should then be cut between its terminal distribution and the origin of the external branch, thus sparing the function of the latter. If desired, the peripheral portions of the nerve may be excised or avulsed before closing the incision. The procedure is without special difficulty, provided the operator has the anatomy of the region clearly in mind. Illustrations accompany the article.

6. The Paradox of Polyuria in Interstitial Nephritis.—Martinet points out that the occurrence of polyuria in interstitial nephritis in spite of the renal sclerosis, which one might expect instead to reduce the amount of fluid passing through, is dependent upon an increase of the pulse pressure (*i. e.*, the difference between the systolic and diastolic pressures) in these cases. By multiplying the pulse pressure expressed in cms. of mercury, by the daily output of urine in litres, he obtains a factor which, under normal renal conditions, always approximates 0.25. In twelve cases of interstitial nephritis, the figure obtained was only from 0.075 to 0.16; these figures were taken, without selection, from among a large number. The total output of urine per cm. of pulse pressure is thus much less in nephritics than in other individuals. Wherever the factor obtained is less than 0.20 Martinet believes that the diagnosis of renal sclerosis can be made with almost absolute certainty.

REVUE MÉDICALE DE LA SUISSE ROMANDE.

October, 1912.

1. JAQUEROD: Treatment of Pulmonary Tuberculosis by Artificial Pneumothorax, Clinical Results (Concluded).
2. G. CUTTAR: Etiology of Prostatic Hypertrophy.

1. Treatment of Pulmonary Tuberculosis by Artificial Pneumothorax.—Jaquerod reports fifteen cases treated by endopleural injections of 400 to 800 c. c. of nitrogen at fortnightly intervals. Of five febrile patients with cavities on one side three derived only temporary benefit, but in the other two the results were permanent. In two cases with advanced disease on both sides, a respite from fever and an increase in bodily strength were obtained, lasting three months. Four patients without continued fever but having cavities were greatly improved as to strength and general resisting powers, though no weight was gained. In eight additional cases the treatment could not be carried out, on account of widespread pleural adhesions. Jaquerod believes that the best method of ascertaining whether or not adhesions are present is to watch the manometric oscillations, and states that x ray examination has not in his hands yielded much information on this point. He finds that by introducing the needle exactly two cm. in every case—exerting pressure on the tissues with the finger in stout individuals—one is practically certain to enter the pleural cavity; this plan is far preferable to groping about with the needle. The site of puncture should, wherever possible, be below the scapula in the posterior axillary line. Serious reflex disturbances—"pleural eclampsia"—appear only upon repeated puncture and seem to depend on an acquired local oversensitiveness of the pleura. It is therefore advisable to vary the site of injection at different sittings, and moreover, to avoid making several punctures at one sitting. Regarding gas embolism, Jaquerod advises that since gas bubbles tend to rise, in whatever direction the blood stream may be flowing, the patient should always be recumbent and with the head low, during the injection; in addition to the greater degree of safety thus afforded, the excursions of the manometer are larger when the patient is lying on the side opposite the injection than when he is sitting up. No attempt should be made to break up any adhesions present by forcing in nitrogen, as firm adhesions are generally constituted of tuberculous tissue which, if pulled apart, spreads the infection to the entire pleura. Jaquerod thinks it as yet unjustifiable to recommend lung compression in incipient cases and in advanced cases that are afebrile and whose general condition is still good. As special indications for the treatment he mentions continued fever (after other measures have failed), rapid spread of the disease with abundant expectoration, and severe, frequently repeated hemorrhage.

2. Etiology of Prostatic Hypertrophy.—Cuttat concludes that prostatic hypertrophy cannot be considered the result of a chronic local inflammation of infectious origin; neither can it be classified as a true tumor. It is a form of fibroepithelial degeneration analogous to goitre and to fibroepithelial growths of the mammary gland. Glandular tissue and stroma contribute about equally to the increased size of the organ.

RIFORMA MEDICA.

October 19, 1912.

1. V. MARAGLIANO: New Radiological Sign of Pericardial Effusion.
2. A. FAGIOLI: Therapeutic Pneumothorax.
- October 26, 1912.
3. L. FERRANINI and R. SCALIA: Venous Pulse in Fatigue.
4. L. SILVESTRI: Narcotic Power of Pantopon.
5. A. TORI: Acute Hemorrhagic Pancreatitis in Patient Operated upon for Strangulated Hernia.
- November 2, 1912.
6. L. FERRANINI and R. SCALIA: Venous Pulse in Fatigue.
7. M. DARDANELLI: Sarcomata of Scapula Operated on by Total and Subtotal Resection.
- November 9, 1912.
8. D. PANE: Antagonism between Microorganisms Isolated from Feces and Koch's Vibrio; Virulence of Koch's Vibrio Isolated from Carriers.
9. M. DARDANELLI: Sarcomata of Scapula.
- November 16, 1912.
10. P. F. ZUCCOLA: Nature of Camidge Reaction.
11. A. DELLEPIANE: Pathogenesis of Epilepsy.
- November 23, 1912.
12. L. FERRANINI: Action of Salvarsan.
13. G. LUBICELLI: Action of Iodine on Bloodvessels.

7. 9. Sarcoma of Scapula.—Dardanelli presents the histories of many interesting cases, and concludes that in the different interventions the surgeon must take into consideration, not so much the clinical as the anatomical diagnosis. In sarcomata of recent date, total scapulectomy with all the muscular masses inserted, is indispensable; in sarcomata of some months' duration, beside the complete scapulectomy, all the muscles inserted into the scapula must be completely removed. When the tumor has invaded the muscles around the scapula, and its limits are not far from the scapulohumeral articulation, it is preferable to resort to an inter-scapulothoracic amputation, than to leave a useless

limb, with the danger of not removing all the tissues, where metastasis might have already taken place. When the tumor has extended to the thorax or the articulation of the humerus, it is to be considered inoperable, because of the metastasis into tissues that cannot be reached.

13. Iodine and the Bloodvessels.—Lubicelli states that small doses of preparations of iodine lower the pressure in normal individuals, as well as in patients suffering from high blood pressure. The continuous administration of increasing doses raises the pressure. The viscosity of the blood decreases with small, and increases with large doses. Viscosity and pressure are modified in the same manner, so that small doses lower the pressure and the tone of the vessels; medium and repeated doses increase the pressure and the tone; large doses raise the blood pressure enormously, even if the pressure was high before administration. Therefore in cases of high pressure, iodine should be administered in small doses and for short periods; in cases of lowered tension and torpid tuberculosis it should be administered for long periods and in increasing doses.

PROCEEDINGS OF THE ROYAL SOCIETY.

October 11, 1912.

1. DAVID FRASER HARRIS and HENRY JEREMIAS MAUDE CREGGINGTON: Rejection of Liver and Kidney. *June 1.*
2. KATHY LLOYD: Cerebral Lesions. Process of Excitation in Nerve and Muscle.
3. JOHN WILSON COOPER: Development of Parasite of Earth Worms.
4. MORRIS ROBERTSON: Polymorphism of *Trypanosoma gambiense* in Blood and Its Relation to Exogenous Cycle in *Glossina palpalis*.
5. EDITH R. SANDERS: Further Study of Inheritance of Hoariness in Mice. (Morphology).
6. ARTHUR L. BROWN and E. P. WOLFE: Influence of Temperature on Absorption of Water by Seeds of *Helianthus scaberrimus* in Relation to Temperature Coefficient of Chemical Change.
7. H. E. DICKIN: *Trypanosoma peritum* (Brieger) and *Trypanosoma gambiense* (Brieger).
8. R. KRICKENBECK: *Merina rostrata* and "Montedonias."

1. Reducing Ferments of Liver.—Harris and Creggington were able to confirm the existence both of a catalytic enzyme and a reducing endoenzyme (reductase) in the mammalian liver. They lay stress on the fact that the reductase is able to reduce chemical substances differing very widely in structure, propensities, and stability. Not only does it act on oxygen containing compounds such as methemoglobin and sodium nitrate, but also on substances free of oxygen and relatively stable, such as ferric chloride and soluble Prussian blue. The reductions are not due to the proteins of the liver juice, since boiling the latter destroys its activity.

4. Polymorphism and Exogenous Cycle of *Trypanosoma gambiense*.—Robertson shows that *Trypanosoma gambiense* is a polymorphic organism with a continuous range of variation. The shorter forms constitute the normal adult blood type, while the intermediate individuals are growth forms and lead to the long forms, which are those about to divide. The polymorphism is thus due to growth phenomena and does not correspond to a sex differentiation. The shorter forms are those destined to carry on the cycle in the transmitting host. There are definite periods when the blood is not infective to the fly, although trypanosomes are present, viz.: 1. Just before an outburst of multiplication; 2. during the destruction of trypanosomes preceding a depressed period; 3. at the sum-

mit of a period of exaltation involving very numerous trypanosomes (at such a time the parasites often show signs of exhaustion); 4. during certain periods of rapid multiplication when the number of the shorter forms is low.

PROCEEDINGS OF THE ROYAL SOCIETY OF MEDICINE.

October, 1912.

1. SIR HENRY MORRIS: Remarks Introductory to Discussion on Syphilis.
2. NORMAN MOORE: Prevalence and Intensity of Syphilis in Past and at Present Day.
3. D'ARCY POWER: Treatment of Syphilis.
4. F. W. W. MOORE: Relation of Syphilis to Public Health, Including Congenital Syphilis.

3. Treatment of Syphilis.—Power describes the measures to be adopted, beginning at the time of inoculation, as in the case of a surgeon or nurse infected in the course of professional work, as follows: The wound should be well washed under running water, dried, and covered with an ointment consisting of ten grammes of calomel in thirty grammes of hydrated wool fat, which is to be gently rubbed in for five minutes. Salvarsan, 0.6 gramme, should then be given intravenously. A Wassermann test should be made soon after, though it will probably be negative in the very earliest stages. Mercury should be given at once when the infection is undoubted, but where doubt exists, it may be withheld until a positive Wassermann has been obtained. Wherever possible, it should be given by intramuscular injection, the formulae of Lambkin being used, viz., a cream consisting of calomel, five grammes; creosote and camphoric acid, of each twenty c. c., and palmitin basis, 100 c. c.; and another cream, in which the calomel is replaced by metallic mercury, ten grammes. Four injections of the calomel cream, ten minims each, are given at intervals of a week, then replaced by two injections of the metallic mercurial cream, ten minims, after which a rest of two months is given. Successive courses of four injections of the second preparation at fortnightly intervals are then given, with intervening periods of rest, and a Wassermann test made at the end of each of these periods, just before the mercury is recommenced. If it is negative an intravenous injection of salvarsan may be given with a view to eliciting a positive Wassermann result. If the test still remains negative, the mercury may be omitted for two months more, after which the test is again made. Marriage may be permitted when the test has remained negative and there have been no syphilitic symptoms for at least a year. It is to be borne in mind that there is a certain chance of error in relying exclusively on the Wassermann, which has been shown to remain negative in a certain proportion of cases in every stage of syphilis,—five per cent. in the secondary, twenty-five per cent. in the tertiary stage, and fifty per cent. where syphilis is latent.

BOSTON MEDICAL AND SURGICAL JOURNAL

December 12, 1912.

- PERCY BROWN: Alimentary Alterations, Roentgen Rays as Factors in Diagnosis.
- ALLEN J. McLAUGHLIN: Prevention of Water Borne Disease in Lake and River Traffic.
- G. I. WASSON: Asterozooids, Probably Not Important Factor in Etiology and Progress of Involuntory Psychoses.
- JOHN M. CONNOR and H. GREGG: Use of Glycerol Urethral Solution in Treatment of Pulmonary Tuberculosis by Artificial Pneumothorax, According to Method of Foulani.
- BENJ. BRADSHAW CANNON: Congenital Pelvic Kidney.

2. **The Prevention of Water Borne Disease in Lake and River Traffic.**—McLaughlin considers that in order to prevent water borne disease in lake and river traffic it will be necessary to proceed along the following lines: 1. Popular education is necessary to prevent drinking of unpurified surface water; 2, public water supplies in communities engaged in interstate traffic should conform to United States standards; 3, United States standards should be based upon the bacterial count and the quantitative estimation of *Bacillus coli* and should be the minimum requirements to prevent the spread of disease, such as typhoid fever or Asiatic cholera in interstate traffic, the various States retaining the right to impose additional requirements consistent with State laws where such laws exist; 4, United States regulation is necessary, requiring vessels engaged in interstate traffic to fill their water tanks with distilled water, or from public water supplies certified as safe and conforming to United States standards; 5, inspection of vessels by United States officers and by State and municipal officers duly qualified to enforce this regulation.

4. **Heredity.**—Connolly says, that should larger accumulations of such data as are now furnished give similar results, we shall be able to establish the following rules of theoretical expectation: 1. Both parents being neuropathic, all children will be neuropathic; 2, one parent being normal, but with neuropathic taint from one parent, the other parent being neuropathic, half the children will be neuropathic and half will be normal, but capable of transmitting the neuropathic make-up to their progeny; 3, one parent being normal and of pure normal ancestry, and the other being neuropathic, all children will be normal, but capable of transmitting the neuropathic make-up to their progeny; 4, both parents being normal, but each with a neuropathic taint from one, one fourth of the children will be normal and not capable of transmitting the neuropathic make-up to their progeny, one half will be normal, but capable of transmitting the neuropathic make-up, and one fourth will be neuropathic; 5, both parents being normal, one of pure normal ancestry and the other with the neuropathic taint from one parent, all the children will be normal; half of them will be capable and half of them incapable of transmitting the neuropathic make-up to their progeny; 6, both parents being normal and of pure normal ancestry, all children will be normal and not capable of transmitting the neuropathic make-up to their progeny.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

December 14, 1912.

1. ALEXIS CARREL: Visceral Organisms.
2. THEODORE C. JANEWAY: Causes of Death in One Hundred Patients with High Blood Pressure.
3. HARVEY G. BECK: Duodenal Medication of Ipecac in Amebic Dysentery.
4. RICHARD COLE NEWTON: Recent Hygienic Improvements in Dairying.
5. JOSEPH HEAD: Saliva and Its Action on Tooth Enamel in Reference to Its Hardening and Softening.
6. J. W. MCCONNELL and WILLIAM C. SPILLER: Clinicopathological Study of Carbon Monoxide Poisoning.
7. JOHN B. MURPHY: Safety Razor Blade Scalpel.
8. GEORGE M. TODD: Cleft Palate Needle Holder.
9. ROBERT L. DICKINSON and WALTER TASSLOW: Averages in Attitude and Trunk Development in Women and Their Relation to Pain.
10. VINCENT Y. BOWDITCH and WALTER A. GRIFFIN: After Results in Tuberculous Patients Treated during the Years 1891-1911 at the Sharon Sanatorium.

11. CARL LOVELACE: Etiology of Beriberi.
12. JOHN O. POLAK: End Results of Conserved Ovary.
13. C. B. DAVENPORT: Heredity in Nervous Disease and Its Social Bearings.
14. PHILIP FRANK: Adams-Stokes Disease.
15. JOHN PHILLIPS: Prevalence of Heroin Habit, Especially Use by Snuffing.
16. ROBERT A. LAMBERT: Demonstration of Greater Susceptibility to Heat of Sarcoma Cells Compared with Actively Proliferating Connective Tissue Cells.
17. H. A. SHARPE: Primula Dermatitis; Occurrence in Rural Districts.
18. J. STULTON HORSLEY: New Method of Suturing Bloodvessels.
19. E. GARD EDWARDS: Death from Nonrecognized Duodenal Ulcer Following Operation for Cholecystitis.

2. **A Study of the Causes of Death in One Hundred Patients with High Blood Pressure.**—See this JOURNAL for June 8th, page 1226.

3. **Duodenal Medication of Ipecac in the Treatment of Amebic Dysentery.**—See this JOURNAL for June 15th, page 1291.

5. **A Study of Saliva and Its Action on Tooth Enamel in Reference to Its Hardening and Softening.**—Head is convinced that enamel will harden and soften within certain limits, and that this hardening and softening is influenced by the saliva and foodstuffs. This action, he also acknowledges, may occur in dentine, but his tests have not entirely proved it. Certain spots on the enamel apparently seem to disappear, which fact seems to prove that the enamel is not a dead, inert substance, but undergoes change through a sort of unseen action within itself, and is capable in its own molecular being of softening and hardening, like the Bermuda rock.

6. **Clinicopathological Study of Carbon Monoxide Poisoning.**—See this JOURNAL for June 8th, page 1224.

7. **Safety Razor Blade Scalpel.**—Murphy has devised handles to carry the two types of safety razor blades most commonly used. After these blades are of no further use for shaving they make excellent scalpels.

11. **The Etiology of Beriberi.**—Lovelace concludes from his study of this question that a fatal form of peripheral neuritis occurs among residents of the Madeira valley and among the employees of the Madeira-Mamoré railway, which must be classified as beriberi, or as a member of an as yet hypothetical beriberi group. There is no intimate relation between this disease and the consumption of rice, polished or unpolished, as a staple food. Furthermore, an absence of protein in the diet of those attacked does not cause this disease.

12. **Further Study of the End Results of the Conserved Ovary.**—Polak suggests that only healthy ovaries should be conserved. He asserts that the right ovary when retained is less prone to subsequent inflammatory changes than the left. Noninterference with the circulation should be considered in the placing of all retained ovaries or portions of ovaries. The best results are obtained from resection when it is limited to large monocycts, retention cysts, fibroids, or dermoids. The multiple cystic ovary should never be resected, but should be either ablated or left alone. When resection is made the entire diseased area should be excised, and the suture should only approximate the wound edge and not constrict them. The portion retained should be so fixed in the pelvis as to maintain an equal circulation, covering in the suture line with a reflexion of the peritoneum in every case.

15. **Prevalence of the Heroin Habit.**—Phillips calls attention to the symptoms in all these cases, which resemble closely those of chronic opium poisoning except in the case of the snuffers, who exhibit a chronic rhinitis similar to the rhinitis with ulceration of those who snuff cocaine. The ease with which the drug may be procured facilitates the formation of the habit.

17. **Primula Dermatitis.**—Sharpe concludes that primrose dermatitis in the rural districts is not uncommon. The wild primrose flower causes a violent dermatitis, resembling very closely a chronic eczema, which may last for years. In the writer's cases the most common method of poisoning was through handling the udders of cows that had walked among the dew laden flowers.

18. **New Method of Suturing Bloodvessels.**—Horsley uses a double mattress stitch, or cobbler's stitch, which when properly placed prevents leakage of more than a few drops, even when a segment of vein of large calibre is placed between the ends of an artery of much smaller calibre.

MEDICAL RECORD

December 14, 1910.

JOSEPH I. LEDERER. Sanitary Control of Local Milk Supplies through Local Official Agencies.

CHARLES B. KELSEY. Local Anesthesia in Operations on Rectum.

FRANK ALLESTREE. Radium Hospital Associations.

J. W. FLEMING. Use of Spectinomicrometer in Examinations of Life Insurance.

ROBERT H. BARTHOLOMEW. Heart Murmurs and Patients.

WILLIAM S. RAYBURN. Urinary Calculi Treated with Oil Injections.

MICHAEL W. B. Safety Screws, Drivers and Screws for Lamp Plates.

1. **The Sanitary Control of Local Milk Supplies through Local Official Agencies.**—Lederer calls attention to the sources of danger to the public health from milk infected with excessive bacterial growth, and with the germs of bovine tuberculosis, typhoid fever, scarlet fever, diphtheria, and tonsillitis, the first two being especially dangerous to infants and the other to persons of all ages. The public protection of milk supplies involves three distinct features: 1. The prevention of adulteration, either by the addition of water, the removal of fats, or both, and the exclusion of all preservatives and foreign substances; 2, the production of a clean milk, a milk low in bacteria, involving great care from the time of milking to actual consumption; the production of a milk free from pathological organisms, requiring the selection of healthy animals, and the careful handling of the milk at all stages to prevent the introduction of infectious germs through human agencies, flies, and dust. The methods of public control include the supervision by boards of health and other governmental authorities—a system of inspections of dairies, supplemented by inspection of creameries and of the methods of shipment and handling from the farmer to the consumer, and must provide for the detection of contagious diseases among those handling the milk, as well as the improvement of sanitary conditions. In the cities the control of the milk supply is a function of the local authorities, and includes the regular inspection of stores and wagons, frequent chemical and bacteriological tests, and the enforcement of sanitary requirements by resort to the courts if necessary. Three grades of milk are mentioned by the writer: Grade A, which is safe for infants.

includes certified and guaranteed milk, inspected raw milk from tuberculin tested cattle, and also a high grade of selected pasteurized milk. Grade B, suitable for adults, includes selected raw milk produced under good sanitary conditions, and pasteurized milk. Grade C includes all milk not conforming to these two grades and is to be used for cooking purposes only.

2. **Local Anesthesia in Operations on the Rectum.**—Kelsey has substituted weak solutions of eucain for cocaine, using it either hypodermically or under the mucous membrane, and limits its use to those cases only where the operation may be done without any very decided stretching of the sphincter. This inability properly to dilate the sphincter makes the treatment with local anesthesia inapplicable to any but the simplest forms of fistula (where the sinus is straight and without branches, where there is one opening on the skin and one on the mucous membrane). Slight laceration through the sphincter from parturition (cases in which the edges of the laceration must be freshened and the ends of the muscles brought together by a few sutures), may be repaired under local anesthesia. In fissure of the anus cured by dilatation of the sphincter this method is not applicable, but we may inject the eucain not into the fissure, but underneath it by puncturing the skin at a short distance from it and cure the fissure by incision. Hemorrhoids that can be brought into reach without dilatation of the sphincter, can be tied and removed by this method, but this does not apply to the removal with the clamp and cautery, as the clamp will not be painless, as its pressure affects a much wider area than the hemorrhoid itself; and, furthermore, the tumors must be removed singly at intervals sufficiently long to permit the entire pain and soreness caused by each application.

5. **Heart Murmurs and Patients.**—Robinson asserts that the refinements of auscultation of the heart are not invariably important, as the essential knowledge in practice is the value of the cardiac murmur when detected, as to prognosis and treatment. By themselves and without obviously disquieting symptoms resulting therefrom, cardiac murmurs may have relatively minor importance if the patient is judiciously watched or treated, but when annoying, painful, or threatening symptoms appear, the outlook is very different. The essential matter in many cardiac disorders, acute or chronic, is not the existence of a murmur, but the intimate condition of the heart muscle and nerve supply, as to whether the heart is or is not competent; in the former case how long will the competence last? If the heart is already incompetent how may we prevent untoward progress in this direction? Will any system of treatment cause the heart to become again normal? It is wrong in any event, and useless in the majority of cases to tell patients that they have a cardiac murmur, as it almost invariably alarms them, and the worry continues, especially when the information comes from the trusted family adviser. If asked the direct question by a patient, the doctor should reply: *That is a question I never answer in any case; or, better still, before beginning the examination, say to the patient, I never state precisely what I find, but will*

talk fully with your physician as to what I discover and what I advise. In this way no injury is suffered by any one. Some extra refined knowledge obtained through the use of the newest, complicated, and cumbersome instruments has not added to the comfort nor hastened the cure of patients thus affected. Advanced research has its place in the hospital ward. We must strictly guard the bedside of the nervous or ill, whenever this is carried out so as not to cause unnecessary mental or bodily distress to the patient; we must not ignore the humane feature of any case.

6. Ureteral Calculus Treated with Oil Injections.—Reynolds assists the passage of the stone along the ureter by injecting oil through a ureteral catheter, thus in many cases avoiding a cutting operation. He reports fully a case of this kind in which the method was successful.

AMERICAN MEDICINE.

October, 1912.

1. IRVING S. HAYNES: Ligation of Internal Iliac Arteries.
2. HAROLD BARCLAY: Splanchioplethosis.
3. WILLIAM F. CAMPBELL: Treatment of Cleft Palate.
4. GEORGE MEYERS: Newer Treatment of Gout.
5. JOHN KNOTT: Calvin and Servetus; Episode in the History of Religious Persecution and Scientific Suppression.
6. T. A. STARKES: Typhoid and Typhoidlike Infections, with Method for Isolation of Respective Bacilli.
7. P. RAVAUT: Lumbar Puncture (Rhachicentesis). Translation with Notes by O. L. Mulot.

1. Ligation of the Internal Iliac Arteries.—Haynes advocates the use of this operation in all inoperable pelvic cancers attended with hemorrhage, profuse and recurring, especially from the uterus; as a preliminary to prevent hemorrhages and recurrences in all such operations, as extirpation of the bladder, prostate, and urethra, hysterectomy, with or without removal of the upper portion of the vagina, and excision of the rectum, anus, or vulva; as a preliminary step in the so called palliative operations upon the uterus and vagina, in connection with the later technique of Gellhorn; in all cases of suspected or actual malignant growths, if positive it will delay, possibly prevent return; in the actual case it arrests hemorrhage and delays growth. The effect of the ligation upon uterine hemorrhage in inoperable cases is positive and immediate, and is attended with no bad effects, immediate or remote. Ligation by the transperitoneal route is usually an easy operation. The writer reports six cases without operative mortality.

4. Newer Treatment of Gout.—Meyers says that a normal man, ingesting a large amount of nucleoproteids, excretes the end products of their metabolism within twenty-four or forty-eight hours. The uric acid content of the urine is rapidly increased, the blood quickly freeing itself from the superabundance and retaining only its normal trace. In the gouty the urine continually shows a lessened amount of uric acid, and after the ingestion of a large amount of nucleoproteids, there is only a slow and prolonged excretion of the excess, the blood and tissues, meanwhile, becoming surcharged with the effete products, a urichemia results. This urichemia is apparently due to a disturbance in the oxidizing enzymes, the formation of a uric acid salt which passes through the kidney with great difficulty, and, finally, to some organic change in the kidney which lessens its ability to excrete the

salt and causes retention. The nucleoproteins of an ordinary mixed diet cannot be properly metabolized by a gouty person, his urine always showing less excreted uric acid than that of a control person. His uric acid is eliminated with difficulty, the excess remaining in the blood. Purin bodies and uric acid are in excess in the tissues. The precipitation of much of this excess uric acid in the smaller joints of the body in the form of insoluble urate (sodium, calcium) salts produces the acute paroxysm of a gouty attack. In the light of the foregoing the therapeutic indications are clear. He must avoid in his diet not all protein food, but the particular class of protein known as nucleoprotein. For long periods he must abstain from nucleoprotein foods (the so called source of the exogenous purins), compelling the system to metabolize the normally present nucleoprotein of his body (the so called source of the endogenous purins). Having maintained a patient upon such purin free diet, and established a tolerance (rested his ferments, protected his kidneys, and eliminated the excess of stored up uric acid), small amounts of nucleoproteins may be again given. A saltfree diet is advised, as well as any medicament containing sodium, as the presence of a sodium salt precipitates out the soluble crystalline biurate. Potassium salts should be substituted for the sodium; even waters with high sodium content should be interdicted.

INTERSTATE MEDICAL JOURNAL

October, 1912.

1. J. L. POMEROY: Muscle Rigidity and Degeneration in Pulmonary Tuberculosis and Other Conditions of Thorax.
2. JOHN ZAHORSKY: Bacterin Treatment of Pertussis.
3. LOUIS M. WARFIELD: Auscultatory Blood Pressure Phenomenon.
4. WILLIAM F. BRAASCH: Results of Early Diagnosis of Urinary Tuberculosis.
5. CAREY P. McCORD: Drug Influence on Extrasystoles of Mamalian Heart.

2. The Bacterin Treatment of Pertussis.—Zahorsky concludes that pertussis bacterin is a very helpful therapeutical resource, in doses of thirty to fifty million. This should be given every three or four days in infants from the very beginning of the disease; in older children it should be reserved until the height. It is a question whether the use of this remedy hastens permanent immunity.

3. Auscultatory Blood Pressure Phenomenon.—Warfield considers the auscultatory method of determining blood pressure best, simplest, and most accurate for determining the systolic pressure. The third sound is normally loudest, and a loud, long third sound usually indicates functional heart strength and contrariwise. Irregularities in the force of the heart beats are more easily discovered by this method. Equally important as the measurement of systolic pressure is the measure of diastolic blood pressure. The diastolic pressure is not usually at the fifth phase, the point of disappearance of all sound.

JOURNAL OF BIOLOGICAL CHEMISTRY.

October, 1912.

1. P. A. KOBER and K. SUGIURA: Copper Complexes of Aminoacids, Peptides, and Peptones. I.
2. FRANK P. UNDERHILL: Mechanism of Phlorrhizin Diabetes.
3. GRAHAM LUSK: Animal Calorimetry. III. Metabolism after Ingestion of Dextrose and Fat, Including Behavior of Water, Urea, and Sodium Chloride Solutions.

4. GOTTFRED, F. L. and MARY P. WELSH: Animal Calorimetry. II. Absorption of Dextrose and Effect upon Composition of Blood.
5. AVIAR, I. KENDALL and GEORGE J. FARMER: Bacterial Metabolism. IV.
6. LAFORTUNE, B. M. and AMY I. DANES: Behavior of Fat-Soluble Dye, B. S. 1, in Animal Organism.
7. G. A. MENA: Some New Compounds of Uricine Type. II. Certain Acid Derivatives of Alpha Methylglutamic, Beta Homocitric, Beta Methylglutamic, and Gamma Homocitric.

2. Mechanism of Phlorrhizin Diabetes.—Underhill studied this question by removal of the renal secretory function, both through ligation of the renal vessels in the dog and through abolition of kidney secretion by subcutaneous administration of sodium tartrate to rabbits. He concludes that after either procedure a significant hyperglycemia may be in evidence, and suggests that phlorrhizin may possess a twofold action, 1, an influence upon the kidney whereby this organ becomes more permeable for blood sugar, and, 2, an action upon other structures resulting in the production of sugar in quantities sufficient to cause hyperglycemia if the kidney function is removed.

4. Absorption of Dextrose and Its Effect upon Composition of Blood.—Fisher and Wishart, upon administering fifty grammes of dextrose to a dog by the mouth, found that there occurs a rapid absorption of dextrose during the first hour, the amount of sugar in the blood rising above the normal. At the end of the second hour, from two thirds to three quarters of the sugar has been absorbed, relatively little has been retained by the liver as glycogen, the sugar percentage has become normal, and the blood is usually more dilute, as shown by a fall in the percentage of hemoglobin. The dilution has taken place owing to the increased osmotic power of the blood due to the increase in sugar content found at the end of the first hour. The metabolism is twenty per cent. higher than before, this being at the expense of the dextrose, which is freely distributed to the tissues. This condition lasts through the third hour. During the fourth hour the absorption of dextrose is completed, the urinary secretion suddenly increases very largely, the hydremic plethora of the blood tends to diminish, and the percentage of dextrose likewise, perhaps owing to its absorption by the liver. The fifth hour is marked by a return of the metabolism to its basal value.

5. Bacterial Metabolism.—Kendall and Farmer analyze and synthesize the results of work described in previous papers. Their curves clearly illustrate the diversity of types of bacterial metabolism in identical media. The frankly pathogenic organisms associated with toxemia in the human body, e. g., the typhoid and dysentery organisms, break down but little protein, as is shown by the small amount of ammonia liberated in the sugar-free medium. The ammonia set free by the less-frankly pathogenic organisms increases as the more saprophytic types, e. g., *Bacillus proteus*, are approached. Nevertheless, it appears that the production of bacterial toxins must be the result of proteolytic (putrefactive) activity rather than of fermentative activity. The proteolytic activity, but not the structural activity, of bacteria (except the strictly carnivorous type, such as *Bacillus alcaligenes*) can be arrested by the presence of

utilizable carbohydrate, which exerts a sparing action for protein,—a principle the importance of which in antagonizing toxine production is evident.

SURGERY, GYNECOLOGY, AND OBSTETRICS.

October, 1912.

1. R. C. COFFEY: Surgical Treatment of Gastrointestinal Stasis Due to Causes Other Than Stricture or Ulcerative Conditions.
2. B. F. McGRATH: Intestinal Inverticula; Etiology and Pathogenesis.
3. GUY L. HUMMER: Treatment of Pyelitis.
4. E. E. McKIM: Paget's Disease of Breast.
5. S. E. FRANK: Nephrorectomy in Tuberculosis of Kidney.
6. BERNAS KENNEDY: Uroloepipendicular Anastomosis for Transplantation of Ureter When Shortened by Disease or Surgical Accident.
7. DANIEL N. EISENBERG: Clinical Importance of Horseshoe Kidney.
8. R. T. MORRIS: Attempted Staining Sarcoma with Methyl Blue in Living Patient.
9. A. H. CURTIS and V. C. DAVID: Treatment of Acute Anemia by Blood and Intravenous Saline Infusion.
10. E. GREGG: Curative Effect of Normal Animal Serum in Suppurative Processes.
11. RAYMOND ROUSS: Cecum from Surgical Standpoint.
12. A. J. BARKLEY: Some Facts Not Generally Known Regarding Ephraim McDowell.
13. H. H. KERR: Pyelotomy by Basting Stitch Method.
14. J. M. FLINT: New and Simple Apparatus for Nitrous Oxide-Oxygen Anesthesia.
15. EMIL AMBERG: Keloid Formation in Scar after Mastoid Operation.
16. W. C. CRAMP: New Retractor Drain in Treatment of Small Infected Wounds about Hand.
17. F. R. HOGNER: Regurgitation of Fluid from Bladder to Kidney during Urethral Catheterization.
18. G. KOLNHER: Technique of Suprapubic Prostatectomy.
19. H. P. KUHN: Thymol Alcohol as Disinfectant of Field of Operation.
20. L. W. LITTE: Technique of Tubal Sterilization.

1. Surgical Treatment of Gastrointestinal Stasis.—Coffey makes, among others, the following deductions: 1. There is a direct relation between gastrointestinal stasis and abdominal ptosis; 2, in twenty per cent. of human beings the ascending and descending colon have not completely fused with the parietal peritoneum and these structures, instead of resting on a shelf or incline, are suspended by a direct drop from the kidneys; 3, a pendulous cecum or cecum mobile, suspended from the right kidney, either pulls loose from the kidney, the stasis being relieved by a general visceroptosis or the stasis is relieved by the kidney being pulled out of place, the patient having a movable kidney, or bacterial invasion may take place through the intestinal wall and a pericolic membrane be formed; 4, the pericolic membrane forms in early adult life, usually over the ascending colon, is of bacterial origin, is present only in cases of an unfused, non-rotated colon and while removal of this membrane relieves pain, yet general ptosis is thereby promoted; 5, localized left sided ptosis never occurs, for this reason a unilateral left floating kidney is practically unknown; 6, midline ptosis is independent of any form of ptosis and is acquired from a chronically overloaded colon or stomach. In regard to the treatment the writer summarizes as follows: 1. Surgery should never be considered for the treatment of ptosis *per se*; 2, gastric and intestinal stasis not relieved by medical or dietary measures constitutes the only excuse for surgery; 3, an operation which fixes a floating kidney without fixing the colon at the same time, is not a sound surgical procedure; 4, a mobile cecum should be fixed to the parietal peritoneum; 5, in midline ptosis the ligaments of the liver and stomach may be shortened and the omentum sutured to the abdominal wall; 6, general visceroptosis, the pathognomonic sign of which is a floating left kidney, is not

a surgical condition; 7, postoperative treatment consists of the Trendelenburg position for at least six weeks.

2. Intestinal Diverticula.—McGrath, reviewing twenty-seven cases of intestinal diverticula, draws the following conclusions: 1. Diverticula of the large bowel may be present at any time of life but are comparatively frequent in the middle and late periods; 2, they occur in every division of the large intestine, but are found most commonly in the descending portion, especially the sigmoid; 3, they are usually multiple, of the false type and frequently in relation with the appendices epiploicæ, but at times are found at the mesenteric border or between the layers of the mesentery; 4, in sixty per cent. of cases presenting diverticula, there result pathological conditions which produce symptoms; 5, infection through the pouches may produce peritonitis, with or without perforation, inflammatory conditions, or malignancy; 6, the most constant pathological finding in the processes resulting from infection through these diverticula is a chronic extramucosal inflammation or circumdiverticulitis; 7, carcinomata may develop on these inflammatory processes, and usually in the sigmoid; 8, conservative prognosis should be made of tumors of the large intestine, as only twenty-five per cent. of the writer's cases proved malignant; 9, in the present indefinite state of symptomatology, a knowledge of the comparative frequency of these diverticula, the periods of life in which they most commonly occur, and the changes resulting from infection through them, is a preliminary strong point for the diagnosis.

20. Technique of Tubal Sterilization.—Littig, in view of the action of the last General Assembly of the State of Iowa, which passed a law legalizing the sterilization of certain of its mental and moral delinquents, "by vasectomy or by ligation of the Fallopian tubes," reviews the literature on the subject of tubal sterilization and draws the following conclusions: 1. Animal experiments, the ligation or excision of pathological tubes, and the results of like operations on normal tubes prove conclusively that tubal ligation with or without excision is not an efficient measure to prevent conception; 2, the only operation which gives a promise of success is excision of all or a part of the tube with a deep, wedge shaped excision of the uterine cornu, including the pars uterina of the tube, the uterine defect to be closed with a musculomuscular and a serous row of sutures; 3, the anterior abdominal approach is the easiest, the simplest, and the safest; 4, granting that the State has the right to sterilize its mental and moral delinquents, tubal ligation as legalized in Iowa, considering its remote possibilities of success, and its ever present although vanishing danger, is an unjustifiable operation, entirely without promise as a means of lessening the procreation of the unbalanced; 5, in medical practice, tubal sterilization is but rarely justifiable, because it does violence to the most deeply rooted of all instincts, after that of self preservation; 6, considering the almost fiendish pertinacity with which the female economy conserves the function of the Fallopian tubes, the efficiency of vasotomy or vasectomy may also be questioned.

Proceedings of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

Twenty-seventh Annual Meeting, Held at Atlantic City, N. J., May 14 and 15, 1912.

The President, Dr. J. GEORGE ADAMI, of Montreal, in the Chair

(Concluded from page 1309.)

The Nature and Medical Treatment of Graves's Disease.—Dr. S. B. BEEBE, of New York, said in the last few years the increasing interest in the ductless glands had led to more careful autopsies of all cases where they were to be had, and the result had been that the other ductless gland cases of Graves's disease showed at times marked pathological changes. The adrenal might be hypertrophied, the pituitary might be atrophied or hypertrophied, and in some cases various changes had been noticed in the pancreas, the liver, and brain tissue itself. These findings had diverted the interest which had been felt in respect to the thyroid gland so that the real essential relation of the thyroid to a disorder had been very much questioned, and, instead of accepting this symptom complex as being caused by hyperactivity of this gland, there had arisen a tendency to explain it by a variety of disturbances and to say that the thyroid played only a small part in the disturbance, which apparently took place in many, if not all, of the ductless glands. Whether or not we should say that the disturbance of the thyroid was primary was yet an open question. Why it was that the thyroid gland suddenly became very active and did this tremendous amount of work had never yet been satisfactorily explained. We had carried on a series of experiments in which rabbits and monkeys had been given varying doses of thyroid both by the stomach and by hypodermic injection, and the blood picture studied. There were no characteristic changes produced constantly in the blood of these animals, either by small or large doses or by giving it by stomach, or by giving it intravenously or intraperitoneally. Another fact was that in a considerable proportion of cases what was at first thought to be a benign goitre had later shown in the same patient all of the characteristics of Graves's disease. Suddenly ushered in by severe nervous shock or an infection, such as acute tonsillitis or typhoid fever or severe gripe infection, all the symptoms of Graves's disease rapidly developed and the gland ceased to be a quiescent affair and became a really active Graves's gland. In summarizing the results obtained in the last six years, in over 2,000 cases treated, he would say that in a patient who was not already moribund results might be expected to this degree, fifty per cent. of these patients were made well so that they did everything they wished to do. Many of them still had a somewhat enlarged gland. Their heart and nervous symptoms and everything of that sort cleared up. About thirty per cent. more were made very comfortable, so that their condition in life was very satisfactory. In about twenty per cent. they failed to get satisfactory results.

Dr. GEORGE DOCK, of St. Louis, stated that they

all become accustomed to the idea that in Graves's disease they were dealing with a hyperthyroidia. If nothing else had proved it, surgical operations would. They could no longer question that taking away a bit of thyroid tissue from a so-called case of hyperthyroidia would produce a very different picture; but that did not disprove the possibility of there being another process there. Also, rheumatism had been described as very common in all forms of hyperthyroidia. Much attention was being called to fright as a cause of hyperthyroidia, but he did not know one case where that had been the active factor of the onset of the disease.

Dr. LOUIS B. WILSON, of Rochester, said that Doctor Beebe called attention to the fact that he had not found confirmation of Kocher's statement that there was a hyperleucocytosis in these cases of hyperthyroidia. Since Kocher's first statement some years ago they had a number of differential counts on about 800 cases of exophthalmic goitre and simple goitre as well. They had analyzed all the twenty-seven deaths which had occurred in exophthalmic goitre. Not one gave a high lymphocyte count. Of the twenty-five in which a high lymphocyte count was given, not one had been a severe case. It was true that in exophthalmic goitre there were a great many cases with a relatively high lymphocytosis up to forty per cent., but it was equally true that in simple goitre they had equally high lymphocytosis. So far as results were obtained, all of their exophthalmic cases treated to January 1, 1910, were tabulated a year ago, and seventy-one per cent. of these people, who were formerly a burden to themselves and friends, had been able within three months of the operation to return as working members of the community. This was practically the same as the results from the use of the serum.

Dr. S. B. BEEBE, of New York, said he did not know that any one would say that Graves's disease was caused by fright, but he was perfectly satisfied in his own mind that fright was a factor of considerable importance in the immediate development of acute symptoms in a person who had been previously apparently all right. The fact that they did not all respond to fright by developing hyperthyroidia did not mean that fright was not a factor of very considerable importance. He believed he could safely say that in twenty per cent. of the cases that showed immediate acute development, fright or nervous disturbance due to worry or sickness in the family was a factor in the development of the disease.

Antityphoid Inoculation; Experience with Its Use in Training Schools for Nurses.—Dr. LESLEY H. SPOONER, of Boston, said this work, stimulated by the results of antityphoid inoculation in the British Army, aimed to establish an immunity among nurses and physicians in hospitals, who, under the best conditions, suffered a high morbidity from typhoid. Its success depended upon its safety and the ease with which it could be accomplished. These ends were secured by the use of a low virulence vaccine administered at frequent intervals in small doses. The results, from the point of view of blood changes and incidence of the disease, seemed to justify the procedure. The use of the

same prophylaxis during epidemics was safe, sane, and most desirable.

Dr. WILLIAM H. PARK, of New York, said they had a very interesting case in their laboratory. A girl (one of the laboratory attendants) swallowed by mistake a culture of typhoid. He immediately immunized her, but she came down at the usual time and went through the usual course. In another case, by accident, three persons got 4,000,000 bacilli for their first dose. One had no reaction, the second had a slight reaction, and the last had a severe reaction for five days.

Major FREDERICK F. RUSSELL, U. S. A., of Washington, D. C., stated that he had a case similar to that which Doctor Park mentioned, in which he immunized a man for typhoid. The disease did not develop. He had been especially interested in the statement of Doctor Spooner as to the use of antityphoid vaccine in epidemics at all times of the year. That we could not immunize safely in the presence of an epidemic had been very important to them. It had been the greatest stumbling block to that form of immunization, to find out that there was a negative phase which increased the susceptibility to infection. Wright believed that and preached it widely, and it had done more than anything else to hold the movement back. Last year, in Connecticut, there had been an outbreak in which the water supply of a small town was polluted. One of their men happened to be there and induced friends of his to use vaccination immediately, and half the nurses, of whom there were eighty, were vaccinated. In not one of the vaccinated did the disease develop; three of the thirty-five unvaccinated nurses had the disease in the next two months. He thought that was another instance in which it showed that it was perfectly safe to vaccinate in the presence of an epidemic. They knew pretty well now from the experience of various people that vaccinating against typhoid did not carry with it any danger. They had vaccinated now 150,000, and the only accident had been one case of respiratory paralysis. It was not severe, but painful in the way of neuritis. They knew that it did protect. Their experience on the Mexican border last year proved that it protected from the disease. They knew that the immunity did not begin to fall off until between two and three years, and in that way it compared favorably with the immunity conferred by vaccine in Japan. They did not know how long it would last, but he did not think it would be many years until they did know. The rules for its use were about the same as in vaccination; the injunction should be borne in mind to vaccinate only the healthy. They had had a similar experience in lighting up a few cases of latent tuberculosis. The question of its use in certain classes of people was of some interest. They had been immunizing a good many children and young people, school children, and people who were going from a healthy city to the country. They all knew in New York and Chicago it was much more healthful than country regions; that in the country the liability to infection was five or six times as great. The children had easy reactions and it would protect them against a real danger. For the rest of them, there was no chance of infection so long

as they remained at home in cities where the typhoid rate was low. Obviously, none of them knew that. They were always going into regions where typhoid prevailed. People travelling through the south were constantly exposed to greater risk than if they remained at home.

Dr. M. H. FUSSELL, of Philadelphia, said that during the past winter the supply pipe which ran to the twenty-first and twenty-second wards of Philadelphia, broke. They immediately pumped raw Schuylkill water into the main, which spread quite an extensive epidemic in these two wards. It so happened that he was in St. Timothy's Hospital where they received thirty-six patients. He immediately vaccinated all the nurses, who happened to be eighteen in number. In none of the nurses did typhoid develop, and none of them had a very severe reaction.

Dr. M. W. RICHARDSON, of Boston, stated that this work was especially interesting to him because it represented a continuation of the work he was doing at the Massachusetts General Hospital. At that time they noticed that the nurses used to be sick and they regretted it. At his suggestion Doctor Spooner had looked up the figures for ten years and found the number of nurses affected with typhoid. At his suggestion the nurses were called together, and the question of immunization was put up to them. A large number responded. Then, as secretary of the State Board of Health, he sent a circular letter to all the training schools of the State, and the result had been as detailed by Doctor Spooner. He thought that vaccines, if intelligently used, could prevent a large percentage of the relapses. The legislature in Massachusetts had recently given power to the State Board of Health to furnish these vaccines free to physicians, and it was probable that this vaccine would be available within the next few months.

Experimental Research on the Typhoid Carrier.

—Dr. JOHN ANDERSON JOHNSTON, of Philadelphia, said the problem was whether an analogous condition to the typhoid carrier state in man could be produced in the rabbit; and, in the event of such a condition being established, the effect produced by vaccine treatment. The results of their experiments showed that the condition analogous to the typhoid carrier state in man could be produced in the rabbit. *Bacillus typhosus* could be recovered from the blood up to the end of the first month following inoculation for the blood and up to 110 days for the feces. *Bacillus typhosus* was present in the bile approximately sixty days after inoculation, and would then seem to become attached to the mucosa of the gallbladder wall. An inoculated animal becoming a carrier might have a reappearance of the typhoid organism in the stools, due to a catarrhal condition affecting the gallbladder. From the results obtained in this experiment, vaccination would certainly seem to be indicated as a means of treatment in the human carrier, and also as a prophylactic agent in the prevention of such carriers.

Hospitals and Typhoid Carriers.—Dr. J. W. BRANNAN, of New York, stated that since September, 1911, they had examined during convalescence from typhoid fever 119 cases, and had found typhoid

bacilli in the feces or urine or both, in 12.6 per cent. of the cases. All but two of these were free from bacilli on leaving the hospital. They had found no great difficulty in holding patients until free from bacilli, as shown by two successive negative examinations. All patients recovering from typhoid fever should be instructed in regard to cleanliness.

Dr. WILLIAM H. WELCH, of Baltimore, said that his impression was that it was on the whole exceptional rather than the rule that the typhoid bacilli injected into the veins of rabbits established themselves permanently in the gallbladder, but, once established, they would certainly survive almost indefinitely. His impression was that the idea that any large percentage of carriers were carriers by virtue of the presence of the typhoid bacilli in the gallbladder, rested on a rather weak basis. The gallbladder had been removed in some of these carriers, and in some instances it resulted in the removal of the typhoid bacilli altogether in the stools. In other cases it had been entirely unsuccessful. He did not suppose they were justified in assuming that they were typhoid carriers solely because of their biliary infection. It was curious to him, on the whole, that vaccine with the quick culture should influence the typhoid bacilli in the bile.

Major RUSSELL said that the vaccination of carriers, they knew, was not always successful. He had one carrier under observation for two and a half years and he had been vaccinated with stock and autogenous vaccines for fully two years' time without any effect upon his bacilli. He had no biliary symptoms, nor symptoms of any kind. He said he never had typhoid, for one thing. There was another thing about instruction in personal cleanliness. They had a great deal of experience in instructing soldiers in cleanliness, both in field and barracks; it was very uphill work. They found they were really too old to be taught personal cleanliness. That had led him to see what was done in public schools, whether children could wash their hands after going to the toilet if they wished to. He found in most schools they could not wash their hands. After they grew up they were too old to teach. Cleanliness should be taught in the public schools.

Weight Curves in Typhoid Fever.—Dr. WARREN COLEMAN, of New York, said the loss of weight had usually been considered as an essential symptom of typhoid fever. Previous investigations of the subject failed for the most part to state the amount of food taken by the patients, thus making comparisons of the results difficult. There was general agreement, however, upon the following conclusions: The majority of patients lost weight. The extent of the loss depended upon the severity of the infection and the duration of the disease. The maximum loss was reached in the third week, more rarely in the second. Complications increased the loss of weight. The loss usually ceased with the return of the temperature to normal, but might extend to the third week of convalescence. The majority of patients gained in weight during convalescence, sometimes rapidly. The loss of weight was usually ascribed to the fever, to the so called toxic destruction of protein, and to partial starvation. The loss due to each of these causes might be reduced to a

minimum, or prevented by a liberal diet containing an abundant supply of carbohydrates.

Immunity against Trypanosomes.—Dr. F. G. Novy, of Ann Arbor, said the measures which aimed at the control of the trypanosomal diseases of man and animal might be directed against the insect carrier, or against the vertebrate carrier which constituted the natural reservoir of the virus; or they might be directed against the causative organism, either by the introduction of trypanosoidal agents (chemotherapy), or by resort to methods of immunization. Of the four measures immunization by means of suitable vaccines, if practicable, would be of first importance even if an efficient chemotherapy was developed. In the various attempts at immunization, made by other workers, the parasites as found in the blood of an infected animal were injected either living or dead into the animal to be immunized. The successful cultivation of trypanosomes raised the hope that pure cultures could be obtained which could be at once attenuated and immunizing. This hope had been fully realized in the case of *Trypanosoma Lewisii*. Cultures of this organism when grown in the laboratory for three years or more became attenuated to such an extent that the injection of any amount of the living growth failed to produce an infection. The production of a living vaccine against a protozoal disease was thus realized for the first time. The availability of the method for the more strictly pathogenic trypanosomes remained to be established. The work of the past two years showed that *Trypanosoma Brucei* could become attenuated in a similar manner.

Demonstrations of Lesions of Nitric Acid Poisoning.—Dr. FRANCIS C. WOOD, of New York, said he reported a case of poisoning due to nitrogen tetroxide, and also presented photographs showing the results of experimental work in connection with the study of the pathological lesions incident to the action of the gas. The chief lesion in the human case was a lobular pneumonia accompanied by extensive emphysema. The chief characteristic of the exudate was its large content of cells from the walls of the alveoli. Evidences of a reparative process were very abundant, many of the alveoli being covered with large epithelial cells. Exactly similar changes could be induced in animals by inhalation of very small quantities of nitrogen tetroxide diluted with large volumes of air. If the animal survived, reparative processes began after four or five days, and the lung regained practically normal condition if the etching of the tissue by the acid fumes had not been too severe.

Election of Officers and Honorary Members.—The following officers were elected: President, Dr. L. F. Barker; vice-president, Dr. Simon Flexner; secretary, Dr. George M. Koher; recorder, Dr. S. Solis-Cohen; treasurer, Dr. J. P. Crozer Griffith; councillor, Dr. A. McPhedran; representative on the Executive Committee of the Congress of American Physicians and Surgeons, Dr. W. S. Thayer; alternative representative, Dr. Theodore C. Janeway.

Dr. S. Weir Mitchell, Sir William Osler, and Dr. Abraham Jacobi were elected honorary members of the association.

Washington, D. C., was chosen as the place for the next annual meeting.

Letters to the Editor.

THE FEEBLEMINDED IN CALIFORNIA.

LOS ANGELES, December 12, 1912.

To the Editor:

Referring to your editorial article in the JOURNAL for November 30th, speaking of the value of the feeble-minded to the community, I beg to call your attention to an error which I believe should be corrected. You state that New York, New Jersey, Iowa, Nebraska, and Indiana have passed laws which in select cases make provision for vasectomy or castration, while Pennsylvania and California have failed to get such legislation upon the statutes, because of the vetoes of the respective Governors. I cannot speak for Pennsylvania, but beg leave to state that California has a most excellent law, which has been enforced for some time and which is applicable in a very decided degree. Fully fifty per cent. of those who should be operated upon come under this law.

JAMES T. FISHER, M.D.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

A Treatise on Pellagra. For the General Practitioner. By EDWARD JENNER WOOD, S. B., M. D., Chairman of the Pellagra Commission, North Carolina Board of Health, etc. With Thirty-eight Illustrations in the Text. New York and London: D. Appleton & Company, 1912. Pp. xiv+377.

In this well printed and abundantly illustrated volume a large section is devoted to etiology, though the author begins the chapter with the statement that the cause of pellagra is unknown, and indeed, at the present time there is more uncertainty about the matter than ever before. He himself is inclined to the theory of a parasitic origin, though he is not satisfied that *Simulium* of Sambon is the particular intermediate host in the transmission. Under these circumstances, the chapters on prophylaxis and treatment are necessarily brief and more or less academic. For historical completeness, as the author admits, he recounts the various methods and plans of treatment proposed; and in the last analysis general hygienic and tonic measures are our main reliance. Much can be done by a change of conditions as regards environment, food, etc., together with a purely empirical treatment of the various symptoms as they arise. Wood concludes his book with the statement that the most successful treatment of pellagra depends upon the early diagnosis. The time has not yet come in which a satisfactory monograph on the disease can be written.

Diseases of the Mouth. For Physicians, Dentists, Medical and Dental Students. By Professor Dr. F. ZINSSER, Director of the Department of Dermatology at the City Hospital, Lindendurg, Dozent at the Academy for Practical Medicine, Cologne. Translated and Edited by JOHN BETHUNE STEIN, M.D., Professor of Physiology at the New York College of Dentistry, Late Instructor in Genitourinary Diseases at the College of Physicians and Surgeons (Medical Department of Columbia University), New York. With 52 Colored and 21 Black and White Illustrations. New York: Reban Company, 1912. Pp. xvi+269. (Price, \$7.)

"This book is intended to be an illustrated aid in study and diagnosis," says the author's preface; as such it most admirably achieves the author's aim. It is as good as any atlas that has ever been brought to our attention. A very concise and yet comprehensive monograph on syphilis of the mouth, presented in a thoroughly up to date way, precedes the illustrated part of the work. In the text are found numerous interpolations by the translator, who is to be felicitated on his own ideas, as well

as on the accuracy and readableness of his English rendering of the original.

Twenty-five of the beautifully executed colored plates portray, in a most vivid and instructive way, the facial, oral, and pharyngeal lesions of syphilis, in all its stages and in many unusual aspects. The following twenty-one plates deal with oral and pharyngeal lesions which may simulate syphilis: Drug stomatitis, lichen, erythema, herpes, aphthae, follicular tonsillitis, diphtheria, Vincent's angina, mycosis, lingua geographica, leucoplakia, the various tuberculous lesions of the lips and mouth, new growths of the tongue, Hutchinson's teeth, heridospilitic teeth, and the several microorganisms (beside that of syphilis) which are to be found in the lesions described. In addition there is a chart illustrating the chronology of the calcification of the teeth.

Most of the illustrations have, evidently, been made *ad naturam* from patients whose clinical histories are briefly recounted in the description of the several plates, thus adding greatly to their value.

The reproduction of the illustrations and the presswork reflect great credit on the publishers. Altogether we take pleasure in recommending this book in unqualified terms.

Le Diagnostic et le traitement des cancers inopérables. A l'usage des praticiens. Par JOSEPH THOMAS, docteur en médecine, docteur ès-sciences, Lauréat de l'Académie de Médecine. Paris: A. Maloine, 1913. Pp. 158.

In his introduction the author disclaims the presentation of anything new or startling in the treatment of inoperable cancers. His chief aim is to give to the practitioner the principal indications relating to the treatment of advanced cancer of this or that organ, these indications being modified according to the predominance of this or that symptom. The author's thought is that it is not sufficient for the physician to treat only the alarming symptoms, such as hemorrhage, or merely to relieve the pain by the use of morphine. It should constantly be the physician's aim to increase the patient's resistance, to improve his appetite, to furnish him with the necessary elements for the restitution of his nervous system, and to treat the psychical as well as the physical side. The tendency of the profession being to disregard the details of treatment of these cases, the author lays down clinical rules of hygiene, nursing, diet, stimulation, etc., and gives special directions for the more common forms, viz., cancer of the tongue, larynx, esophagus, stomach, rectum, peritoneum, liver, breast, uterus, kidney, bladder, and skin. The book is full of most valuable suggestions for the treatment of these hopeless cases, and every physician would do well to familiarize himself with this most practical field of treatment. Should the directions given be carried out conscientiously, much of the physical and mental suffering of these victims would be alleviated. It is to be hoped that the book will be translated into various languages. It is compact, being only 150 pages in length, but the text is written in a very clear style and the arrangement of the topics is systematic.

The Therapy of Syphilis. Its Development and Present Position. By DR. PAUL MULZER, of Berlin. With a Preface by Prof. P. UHLENHUTH, M.D. Translated by A. Newbold. New York: Rebman Company, 1912. Pp. xv+248. (Price, \$1.50.)

This volume, though it bears a general title, is devoted entirely to the consideration of the arsenical treatment of the disease, atoxyl, arsacetin, atoxylate of mercury, hecetine, soamin, arsenophenyglycin, and arsenobenzol being practically the only therapeutic agents mentioned. Of this field it is a fairly complete résumé, which will be of service to the practitioner in view of the appalling extent to which the literature of this subject has grown in the last two years. Nevertheless, a therapy of syphilis which mentions the remedies relied upon for generations and still necessarily important therapeutic agents merely once in a heading as the "former" mercurial therapy, or not at all, iodine, for example, and many other drugs, is certainly open to criticism. Even Uhlenhuth, in his introduction to the volume says "... we must acknowledge that even now we are far from possessing an ideal specific drug ... at the same time we must not abandon aromatic arsenic preparations in the treatment of syphilis,

especially as they are effective in those cases in which iodine and mercury fail."

Beiträge zur Chemotherapie der Tuberkulose. Nach den Vorträgen von Prof. Dr. GRÄFIN VON LINDEN, Bonn (Impftuberkulose), Prof. Dr. E. MEISSEN, Hohenhonof (Lungentuberkulose), und Dr. A. STRAUSS, Barmen (Aussere Tuberkulose). Mit 3 Tafeln. (Sonderdruck aus *Beiträge zur Klinik der Tuberkulose*, herausgegeben von Professor Dr. L. Brauer, XXIII, Band Heft 2.) Würzburg: Curt Kabitzsch, 1912. Pp. 31.

This publication consists of three papers. The first deals with the effect of the "Finkler" method of treatment on guinea pigs which have been inoculated with tubercle bacilli. Preparation of methylene blue and copper salts were used subcutaneously. In consequence of the treatment, the animals which had been inoculated lived much longer than the untreated controls, and the longer they lived the less marked became the tuberculous lesions.

The second paper gives the experiences of Professor Meissen in treating pulmonary tuberculosis with iodide methylene blue and copper preparations. He is quite enthusiastic and hopes that a beginning has at least been made in the chemotherapy of tuberculosis.

The third article, by Doctor Strauss, relates his experiences in external tuberculosis, especially lupus, when treated with the same substances. He reports that in sixty cases of lupus and external tuberculosis the material used had a favorable influence in nearly all instances. The iodide methylene blue was slower in action than were the copper salts.

Materia Medica and Pharmacy. For Medical Students. With an Appendix on Incompatibility. By REGINALD R. BENNETT, B.Sc. (Lond.), F.I.C., Pharmaceutical Chemist, Pharmacist and Teacher of Pharmacy to the University College Hospital, London, etc. Second Edition. London: H. K. Lewis, 1912. Pp. xviii+227. (Price, 4s. 6d.)

This little book, which has for its avowed aim to present a concise account of the drugs, chemicals, and compounds of the *British Pharmacopœia*, fills its purpose admirably. The botanical source and description of plants with the principles they contain and dose; and, in the case of inorganic drugs, their source, characters, and dose, with an appendix on incompatibles, represent the extent of the information afforded. It is especially suited for the English student, but will prove helpful to our own freshmen

BOOK AND MAGAZINE NOTES.

Medicine has become a science of specialties to which every year adds an increasing number. The general practitioner of the future will have to examine the patient at the bedside, go to his laboratory to make microscopic studies, diagnose the case, and prepare the medicine for his patient. Then he will have to don an apron and go into the kitchen to see that under his supervision proper food is cooked for his patient. This picture might be somewhat overdrawn but the truth is that every physician should be acquainted with the cooking of dishes which combine proper dietary efficiency and an agreeable taste. The food should also vary in its preparation that the patient may not become tired of it. "To those whose diet, for one reason or another, is restricted as to starches and sugars, and who may be interested in a more varied dietary than that which is ordinarily available under such circumstances, this little volume is dedicated," says Anna Colby Knowlton in her *Diabetic Cook Book* (Englewood, N. J.: Anna Colby Knowlton, 1912; price, \$2). Whoever has undergone a diabetic dietary himself will know what it means to have a variety of food on hand. The patients who follow this book will be pleased instead of bored with their meals, for such a variety of bread, muffins, biscuits, waffles, buns, puffs, can be hardly found in any other cook book, to say nothing of the great number of cakes and desserts. As stated in the preface, the recipes given here have been recorded carefully from practical experience; they are written in such a way that any person of ordinary cooking intelligence, by following the directions given, can accomplish satisfactory results and thus produce a considerable variety of delicious

dishes, so delicious, indeed, that sick and well alike will enjoy what the cook has prepared, and the physician himself or his wife will take pleasure in preparing such dishes for their own table.

Meetings of Local Medical Societies.

THURSDAY, January 2d.—New York Academy of Medicine (stated meeting); Brooklyn Surgical Society; Practitioners' Club, Buffalo; Dansville Medical Association; Geneva Medical Society (annual).

FRIDAY, January 3d.—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Gynecological Society, Brooklyn; Manhattan Dermatological Society; Practitioners' Society of New York; Corning Medical Association; Saratoga Springs Medical Society.

Official News.

Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending December 18, 1912:

Boyd, Frank, Acting Assistant Surgeon. Leave of absence for ten days from November 9, 1912, amended to read "nine days' leave of absence from November 9, 1912." **Cofer, L. E.,** Assistant Surgeon General. Directed to proceed to Philadelphia, Pa., upon special temporary duty. **Frost, W. H.,** Passed Assistant Surgeon. Granted one day's leave of absence, December 11, 1912, under paragraph 191, Service Regulations. **King, W. W.,** Passed Assistant Surgeon. Granted two days' leave of absence from November 27, 1912, under paragraph 191, Service Regulations. **McMullen, John,** Surgeon. Granted seven days' leave of absence from December 16, 1912. **Tappan, J. W.,** Acting Assistant Surgeon. Granted twenty-five days' leave of absence from December 5, 1912. **Vogel, C. W.,** Passed Assistant Surgeon. Granted three days' leave of absence from December 14, 1912. **Wille, C. W.,** Passed Assistant Surgeon. Directed to report to the Director of the Hygienic Laboratory for special instructions in the making of bacteriological examinations of water.

Board Convened.

Board of medical officers convened to meet at St. John, N. B., for the re-examination of a detained alien. Detail for the board: Acting Assistant Surgeon C. A. Bailey, chairman; Acting Assistant Surgeon W. L. Ellis, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending December 21, 1912:

Browne, Rhoderic W., First Lieutenant, Medical Reserve Corps. Granted four months' leave of absence. **Clark, Albert P.,** First Lieutenant, Medical Corps. Relieved from duty at Fort Williams, Me., and will proceed to San Francisco, Cal., and take the transport sailing from that place on or about February 5, 1913, for Hawaiian Territory, and upon arrival will report to the commanding officer, Schofield Barracks, for duty. **Huntington, Bert R.,** First Lieutenant, Medical Corps. Relieved from duty at Fort Worden, Wash., and will proceed at the proper time to San Francisco, Cal., and take the transport to sail from there on or about February 5, 1913, for the Hawaiian Territory, and upon arrival will report to the Commanding Officer, Fort De Russey, for duty. **MacDonald, Robert C.,** First Lieutenant, Medical Corps. Relieved from duty at Fort Baker, Cal., and will take the transport to sail from San Francisco, Cal., on or about January 5, 1913, and will report on the arrival of that transport in Hawaii to the Commanding Officer, Fort Kamehameha, for duty. **Maus, Louis M.,** Colonel, Medical Corps.

Left Governor's Island, New York, on twelve days' leave of absence. **Miller, Alvin C.,** First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort George Wright, Wash., and will proceed to Fort Alcatraz, Cal., for duty.

The following named medical officers are relieved from duty in the United States and will proceed to San Francisco, in time to take the transport sailing from San Francisco for the Philippine Islands, on or about April 5, 1913: **Major R. M. Thornburgh,** Captain Lloyd L. Smith, Captain L. H. Hanson, Captain Paul W. Gibson, First Lieutenant F. N. Chilton, First Lieutenant J. L. Robinson, First Lieutenant Josiah H. Holland, First Lieutenant Lloyd A. Kefauver, First Lieutenant W. H. Myers, Medical Reserve Corps, First Lieutenant Henry F. Lincoln, Medical Reserve Corps.

The following named officers have been relieved from duty in the Philippines Division on or about April 15, 1913, and will proceed to the United States and report to the Adjutant General of the Army for assignment to duty: **Captain J. W. Hanner,** Captain Edward B. Vedder, Captain Theodore Lamson, Captain J. D. Heysinger, Captain J. B. Huggins, Captain H. C. Coburn, Jr., First Lieutenant T. W. Penrose, Medical Reserve Corps, First Lieutenant Edgar F. Haines, Medical Reserve Corps.

Births, Marriages, and Deaths.

Born.

Walker.—In New York, on Saturday, December 14th, to Dr. and Mrs. John B. Walker, a daughter.

Married.

Bogan—Condon.—In Cumberland, Md., on Wednesday, December 4th, Dr. Joseph Borrows Bogan, of Washington, D. C., and Miss Edna Lillian Condon. **Harding—Jones.**—In Tamqua, Pa., on Wednesday, December 11th, Dr. Frederick B. Harding and Miss Marian Roberts Jones. **Moore—Lucky.**—In St. Louis, Mo., on Monday, December 9th, Dr. Isaac Moore, of Alton, Ill., and Miss Lela Lucky.

Died.

Armstrong.—In New Brunswick, N. J., on Tuesday, December 17th, Dr. Edwin R. Armstrong, aged eighty-five years. **Armstrong.**—In Staunton, Va., on Saturday, December 7th, Dr. Glasgow Armstrong, aged thirty-eight years. **Bleiler.**—In Allentown, Pa., on Tuesday, December 10th, Dr. Peter O. Bleiler. **Casey.**—In Manchester, N. H., on Tuesday, December 10th, Dr. Edward L. Casey, of North Woodstock, aged thirty years. **Flatt.**—In St. Paul, Minn., on Thursday, December 5th, D. William K. Flatt. **Gately.**—In Baltimore, Md., on Monday, December 16th, Dr. Michael Joseph Gately, aged sixty-six years. **Goldmann.**—In Pittsburgh, Pa., on Saturday, December 14th, Dr. Simon Goldmann, aged forty-nine years. **Gratiot.**—In St. Louis, Mo., on Wednesday, December 11th, Dr. Charles B. Gratiot, aged eighty-five years. **Love.**—In Winchester, Va., on Thursday, December 12th, Dr. William Samuel Love, aged seventy-six years. **Meyer.**—In Long Island City, N. Y., on Tuesday, December 17th, Dr. Paul Oscar Meyer, aged fifty-six years. **Miller.**—In New York, on Thursday, December 10th, Dr. Eli Peck Miller, aged eighty-four years. **Millsbaugh.**—In Walkill, N. Y., on Thursday, December 12th, Dr. Theodore Millsbaugh, aged seventy-four years. **Moon.**—In Traverse City, Mich., on Sunday, December 8th, Dr. W. E. Moon, aged forty-nine years. **Osborne.**—In Ozone Park, N. Y., on Wednesday, December 11th, Dr. S. C. Osborne. **Pfister.**—In Creve Coeur, Mo., on Wednesday, December 11th, Dr. John D. Pfister, aged forty-nine years. **Rowan.**—In Wesson, Miss., on Tuesday, December 10th, Dr. Elias E. Rowan, aged seventy-four years. **Speckmann.**—In Brooklyn, N. Y., on Saturday, December 14th, Dr. Charles Henry Speckmann, aged fifty-two years. **Torrence.**—In Indiana, Pa., on Saturday, December 14th, Dr. James Monroe Torrence, aged sixty-seven years. **Willey.**—In Kalamazoo, Mich., on Friday, December 13th, Dr. Vernon Justin Willey, aged thirty-eight years.

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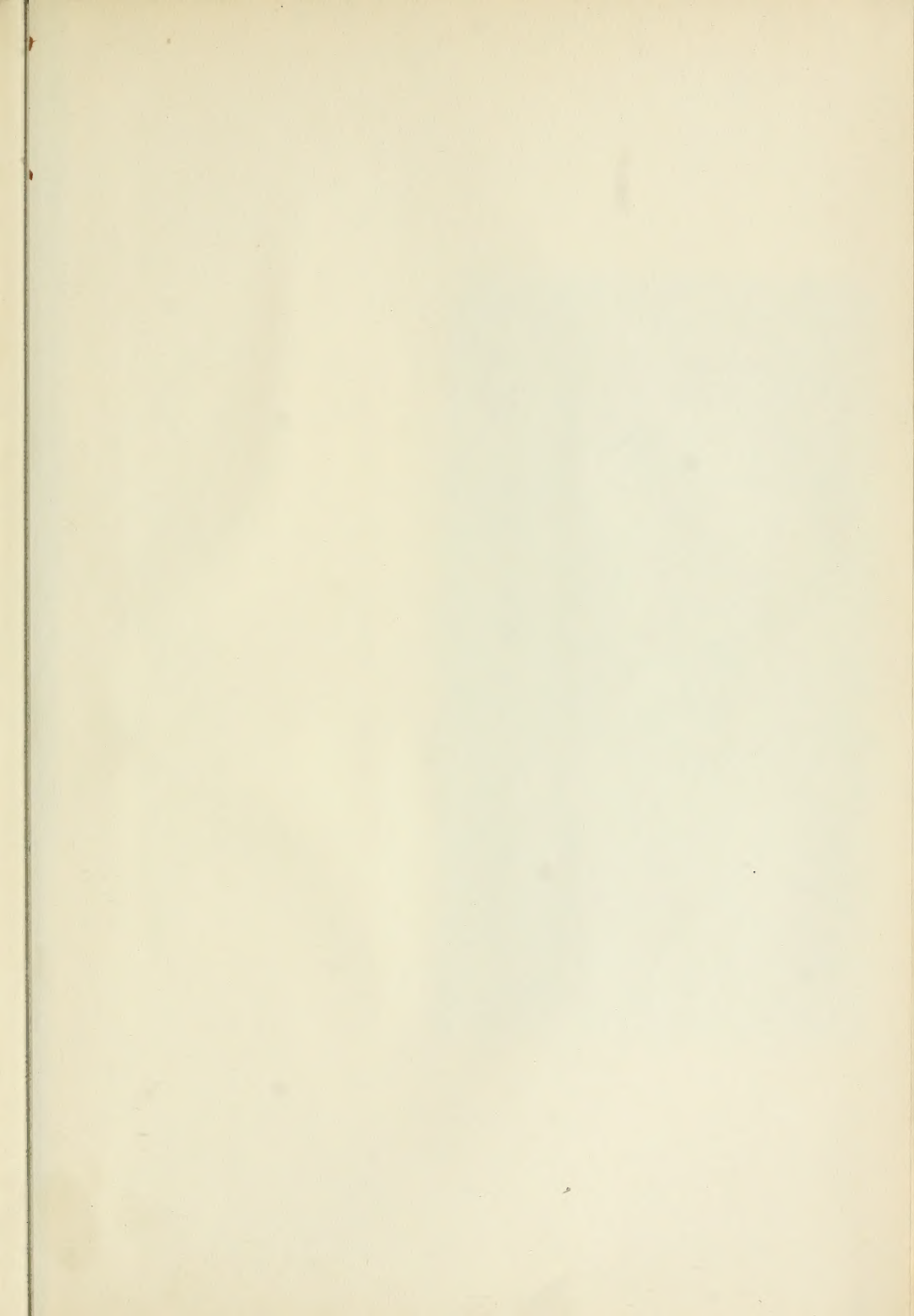
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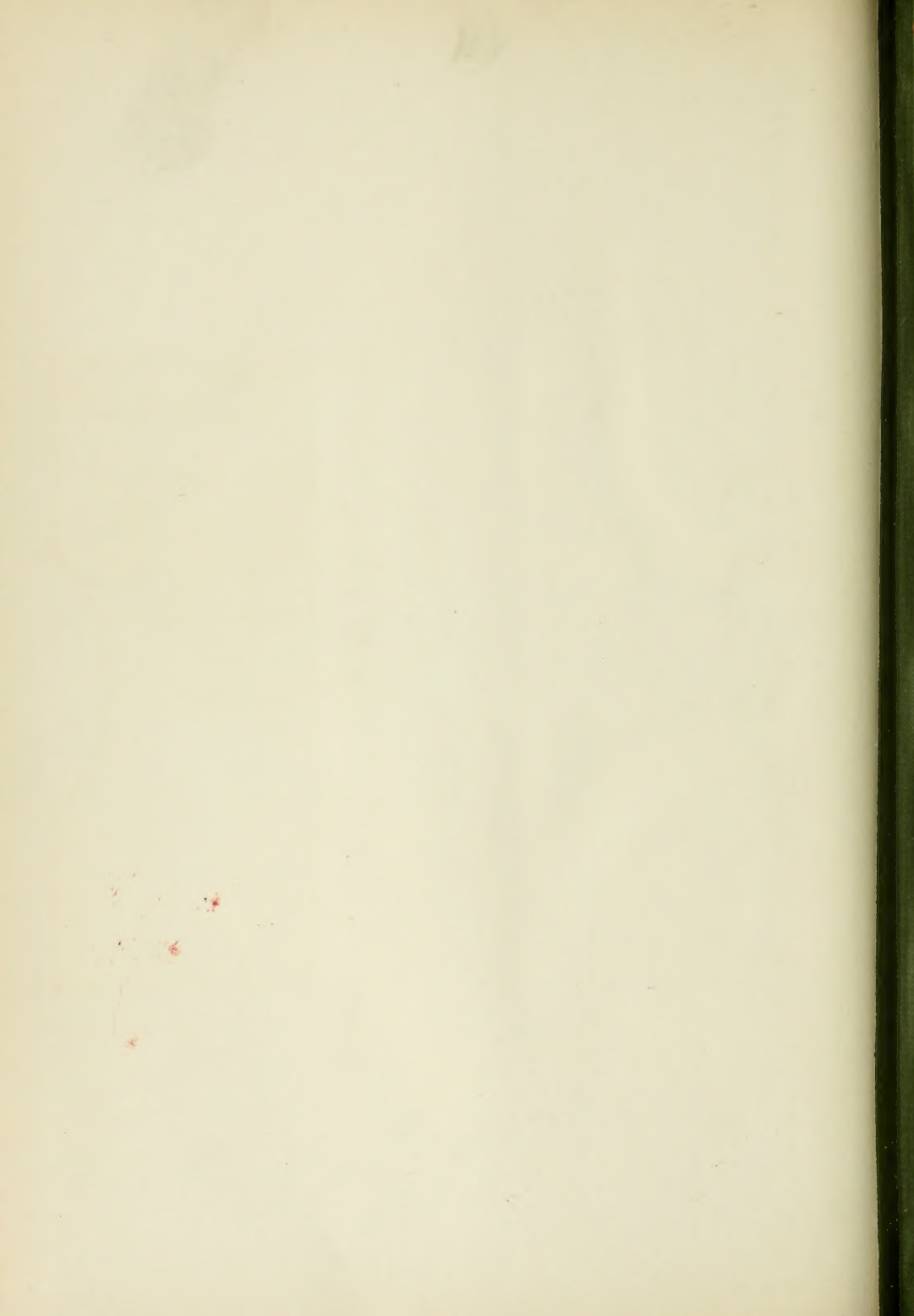
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